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Welcome to the second issue of *Acoustic & Digital Piano Buyer*, a semiannual publication devoted to the purchase of new and used acoustic pianos and digital pianos. *Piano Buyer* is the supplement and successor to the well-known reference *The Piano Book*, since 1987 the principal consumer guide to buying a piano in the U.S. and Canada. Because it's partially supported by advertising, *Piano Buyer* is available free online at www.pianobuyer.com, as well as for purchase in print from the website and in bookstores.

The first issue of *Piano Buyer* required a tremendous investment of time and money to produce, and I'm pleased to report that it's been enthusiastically received by both readers and advertisers. In the first six months, about 30,000 individuals have accessed *Piano Buyer* online or in print, with online visits totaling close to 80,000. This issue is brought to you courtesy of 75 advertisers, including virtually every major piano manufacturer, and many of the largest piano retailers in the U.S. and Canada. When you have occasion to interact with them, please let them know that you appreciate their support for *Piano Buyer*. A special thanks to Frank Baxter, founder and host of the Piano World online community, who has been very gracious in supporting our efforts, and to *Making Music Magazine* for swapping ads with us.

Piano Buyer is a hybrid book/magazine. The "book" part consists of a collection of how-to articles on the many aspects of buying a piano. These basic articles are repeated in every issue to serve the many new buyers continually entering the piano market. The "magazine" part consists of features that change with

each issue to cover topics of more temporary or niche interest, and to provide variety. The brand, model, and price reference material in the second half of the publication is updated, as needed, with each issue.

If you're shopping for a new piano, our searchable online database of 3,000 models allows you to find instruments that match your requirements for size, furniture style, and budget.

In this issue, we offer several new articles for your reading pleasure: a review of Group 3 Performance-Grade "Value" pianos by guest reviewers Dr. Owen Lovell and Adrean Farrugia, both regular contributors to Piano World's online forum (p. 115); a delightful piece titled

"Everything Old Is New Again," by *Temperament* author Stuart Isacoff, on reconnecting with the past through the restoration of vintage pianos (p. 68); the first of two articles of candid comments about high-end pianos by piano technicians who service these outstanding instruments (p. 79); a practical guide for digital piano shoppers, by digital piano editor Alden Skinner, on what to do if you have only \$2,000 to spend on an instrument (p. 149); and Alden's review of Vienna Imperial, the high-end piano software package from Vienna Symphonic Library (p. 145).

Don't forget to explore the rest of our website. If you're shopping for a new piano, the searchable online database of 3,000 models will allow you to home in quickly on the instruments that match your requirements for size, furniture style, and budget. If you missed the last issue of *Piano Buyer*, you'll find it under the Archives tab. And over the next six months, we'll be adding other content, as well as the ability to better search for the information you're looking for.

Finally, if you're reading this online, consider buying a print copy of *Piano Buyer*. It's a handsome volume, printed in color on glossy paper, and will make a great reference, coffee-table book, or gift.

Piano Buyer exists to make shopping for a piano easier and more enjoyable. If you have a suggestion as to how we can do that better, please e-mail me at larry@pianobuyer.com.

Larry Fine, *Publisher*

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**SPRING 2010
Supplement to
THE PIANO BOOK**

The Definitive Guide to Buying New, Used, and Restored Pianos

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NINE is DIVINE



PRACTICE MAKES PERFECT. You've probably heard that saying a hundred times, especially if you've ever studied the piano. Mom said it, so it must be true, right?

Well, hold on a minute—nothing against Mom, but let's get real: "Practice makes perfect" is a terrible motto for piano players. First of all, it's incorrect—how can anything become "perfect" if, every time, you practice it *wrong*? And second, it can't even come close to capturing the prodigious power of playing the piano. So, with all due respect to that venerable axiom, trash it—and make way for a motto that proclaims the *real* benefits of piano playing: *Practice makes prosperous.*

People usually associate the word *prosperous* with wealth. While that's certainly part of its meaning, many dictionaries suggest a broader definition: to be *prosperous* is to *flourish*, to *thrive* . . . to be *successful*. Therefore, the phrase *practice makes prosperous* declares boldly that *those who play the piano are far more likely to flourish, thrive, and experience success in life than those who do not*. Quite a stretch, you say? Read on.

Thriving Children

Consider what happens when eight-year-old Bobby decides to embrace serious piano practice. Not only does he embark upon a wondrous musical adventure (possibly the greatest benefit of all) but, perhaps unconsciously, he acquires a diversity of skills far beyond the musical notes:

- **He learns to work hard.** Anyone who excels at the piano has made

a commitment to practice with vigor and determination.

- **He learns to focus.** In a world where iPods, MySpace, Facebook, Twitter and mobile texting have made multi-tasking the de facto way of life, young people are at risk of losing the art of concentration. Piano practice reminds Bobby how to focus on *one thing*—and do it well.
- **He learns to be responsible.** Serious pianists learn that faithful, consistent practice—even when they don't *feel* like doing it—will bring great satisfaction over time.
- **He learns to pay attention to details.** As his skills mature, Bobby learns to observe the fine points and use the most subtle nuances to create art.
- **He learns to be self-reliant.** While practicing, Bobby can't always rely on Mom and Dad for help. To succeed, he must learn to work well on his own.
- **He learns to be creative.** Creativity is a musician's lifeblood. Pianists use it not only to express musical ideas, but also to conquer the physical and mental obstacles that arise when learning new music.
- **He learns to persevere.** There is little satisfaction in learning only *half* of a piece of music. The determined pianist finds joy in following through to the very end.

These are only some of the skills Bobby will acquire as he devotes himself to diligent piano practice. So, how will such practice make him prosperous?

Ask employers what they look for when interviewing young job candidates for their top positions. Most are looking for a well-defined set of character traits. Specifically, they want people who know how to work hard, can focus well and avoid distractions, are responsible, will pay attention to details, are self-reliant and creative, and will persevere on a project from start to finish. Sound familiar?

You see my point. The skills Bobby learns by practicing the piano will be of immeasurable value to him not only in job interviews, but in every area of his life. People who have these skills are

more likely to flourish in college, thrive in the work world, advance in their careers—and generally enjoy success in any field of endeavor.

Test scores support this contention. Studies show that students of music typically score higher on SATs than do non-music

students—on average, 57 points higher on the verbal section and 41 points higher in math.¹ Further, a 1994 study showed that college undergraduate students who majored in music had the highest rate

Those who play the piano are far more likely to flourish, thrive, and experience success in life than those who do not.

¹ *Profile of SAT and Achievement Test Takers.* The College Board, compiled by Music Educators National Conference, 2001.

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of acceptance to medical school (66%).² *Practice makes prosperous.* Prepare your children for success in life: Introduce them to the piano.

Thriving Adults

But how about *you*? Are you among the 82% of adults who have always wanted to learn how to play an instrument?³ Did you know that adults can gain as much as younger people from playing the piano?

Even if you’ve already achieved career success and significant wealth, there can be *so* much more to a prosperous life. Consider what happens when Nancy, a baby boomer and successful business owner, decides to join a recreational group piano class for adults:

- **She immediately feels *relief from stress*.** After hours of intense daily pressure at work, Nancy finds it easy to unwind at the piano. The class moves at a comfortable pace and no one is ever required to play solo—which means zero stress. In her personal practice and in class, Nancy can just relax and have fun.
- **She’s *making new friends*.** Because recreational piano classes are taught in groups, Nancy enjoys getting to know others who share a common interest. Many of her classmates are professional people like her who, after raising a family, are finally getting to try the things they’ve always wanted to do. The warm camaraderie among class members is a wonderful surprise.
- **She enjoys *playing her favorite songs*.** Nancy always dreamed of learning her two favorite Beatles tunes. Now, she’s thrilled to play these and many other classic hits

for friends and family.

- **Her *mind and spirit are enlivened*.** The process of learning something completely new has been intellectually and emotionally stimulating for Nancy. She enjoys a sense of adventure when exploring new musical concepts and genres with her classmates. Playing the piano has made her feel more fully alive.

Studies have shown that recreational group music-making can significantly improve the quality of life and personal well-being among those who embrace it. So even when you’re playing the piano just for fun, *practice makes prosperous* in meaningful ways that far exceed the balance in your 401(k).

How about you?

Are you among the 82% of adults who have always wanted to learn how to play an instrument?

To give the piano a whirl, contact a local music store or independent piano teacher to find out about recreational piano classes in your area. Whether you’re young or old, striving for success or just playing for fun, the prodigious power of playing the piano can change your life. 🎹

Brian Chung is Senior Vice President of Kawai America Corporation and a leading proponent of the benefits of making music. He is also a pianist, and co-author (with Dennis Thurmond) of *Improvisation at the Piano: A Systematic Approach for the Classically Trained Pianist* (Alfred Publishing, 2007). Visit his website at www.brianchung.net.

²Peter H. Wood, “The Comparative Academic Abilities of Students in Education and in Other Areas of a Multi-focus University,” ERIC Document ED327480 (1990).

³U.S. Gallup Poll. 2008 Music USA NAMM Global Report (August, 2008): 139.

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FOR MANY, there will be no easy answer to this question. Many factors play into this seemingly simple decision, some practical, some not. Ideally, perhaps, the answer should be “Both”—take advantage of the “organic” qualities and connection with tradition of the acoustic piano, as well as the extreme flexibility of the digital. But assuming that, for a variety of reasons, “Both” isn’t an option, careful consideration of the advantages and disadvantages of each will probably quickly reveal which will be best for you.

The advantages of the acoustic piano start with the fact that it’s the “real thing,” inherently capable of nuances that are difficult for the digital piano to emulate. The experience of playing an acoustic piano—the harmonics, the vibrations, the touch, the visual appeal, the interaction with the room, the connection with tradition—is so complex that digitals cannot reproduce it all. And, provided that it’s a decent instrument and properly maintained, the acoustic will continue to serve you or a subsequent owner for several generations, after which it might be rebuilt and continue to make music.

If you’re a beginner, the tone and touch of a good-quality digital piano should not interfere with the elementary learning process for a while, but is likely to become less satisfactory as you advance. If your aspiration is to play classical piano literature, the choice is clear: A digital may serve as a temporary or quiet-time practice instrument (some well-known classical pianists request that a digital piano be placed in their hotel rooms for practice and warmup), but the first time you play an acoustic piano that stirs your soul, there will be no turning back. Although digitals continue to draw closer to the ideal, there is, as yet, nothing like the total

experience of playing a fine acoustic instrument.

The downside of an acoustic piano? Initial cost is generally higher, they’re harder to move, the best ones take up a lot of space, and tuning and maintaining them adds several hundred dollars a year to their cost. And—most important—*all they will ever be or sound like is a piano.*

So why do sales of digital pianos outnumber sales of acoustics by more than two to one? Because, in addition to making a piano sound, digitals can also sound like any other instrument imaginable. State-of-the-art digital pianos can allow a player with even the most basic keyboard skills to sound like an entire orchestra. Many models have features that will produce an entire band or orchestra accompanying you as the soloist.

Digital pianos can also be used as player pianos. They can enhance learning with educational software. They can be attached to a computer, and you can have an entire recording studio at your fingertips, with the computer printing the sheet music for anything you play. Many fine

players whose main piano is a quality acoustic also have a digital, providing the technology for band and/or orchestral compositions, transcriptions, and fun!

Add to all that the advantages of lower cost, convenience, lack of maintenance expense, the ability to play silently with headphones, meeting the needs of multiple family members, the obvious advantages for piano classes, and computer connectivity, and you have a powerful argument for the digital.

While digital pianos have a lot of advantages, it’s important to also consider the disadvantages. In addition to those related to learning and playing classical music, mentioned above, the life expectancy of a good digital piano is limited, primarily by obsolescence (digitals haven’t been around long enough to know how long they will physically last), while the life expectancy of a good acoustic piano is upward

of 50 years. Acoustic pianos hold their value rather well, while digitals, like other electronics, quickly drop in value. Obviously, then, if you’re buying a starter instrument and plan to upgrade later, from a financial perspective you

would do better to start with an acoustic piano.

Both variations have places in our musical lives. Now, which is right for you?

(If you’re still unsure, you might want to consider a hybrid piano—see our [story](#) on the subject in this issue.)

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Introduction

An acoustic piano can be one of the most expensive—and difficult—purchases most households will ever make. The “difficult” aspect arises from several factors that are peculiar to pianos and the piano business. First, a “modern” piano is essentially a 19th-century creation about which few people—even those who have played piano all their lives—know very much, and about which much of what they *think* they know may not be accurate or current. Thus, a person who sets out to buy a piano is unlikely to have a social support network of family and friends to serve as advisors, as they might if buying a car, house, or kitchen appliance. Even music teachers and experienced players often know little about piano construction or the rapidly changing state of piano manufacturing. They often rely on their past experience with certain brands, most of which have changed significantly.

Second, acoustic pianos are marketed nationally in the United States under some 70 different brand names (plus dozens of additional names marketed locally) from a dozen countries, in thousands of furniture styles and finishes—and that’s just new pianos! Many once-popular brands have long gone out of business, yet pianos still bearing their name are made overseas, often to much lower standards, and marketed here. Add in more than a century’s worth of used pianos under thousands of brand names in an almost infinite variety of conditions of disrepair and restoration. Just thinking about it makes me dizzy.

Third, new pianos can vary in price from \$2,000 to \$200,000. But unlike most consumer items, whose differences can be measured by the number of functions performed, or buttons, bells, whistles, and conveniences contained, most pianos, regardless of price, look very similar

and do pretty much the same thing: they’re shiny and black (or a wood color), play 88 notes, and have three pedals. The features advertised are often abstract, misleading, or difficult to see or understand. For this reason, it’s often not clear just what you’re getting for your money. This can lead to decision-making paralysis.

Last, while many piano salespeople do an honest and admirable job of guiding their customers through this maze, a significant minority—using lies, tricky pricing games, and false accusations against competing dealers and brands—make the proverbial used-car salesman look like a saint. And once you get through haggling over price—the norm in the piano business—you may be ready for a trip to a Middle East bazaar.

As you shop for a piano, you’ll likely be bombarded with a great deal of technical jargon—after all, the piano is a complicated instrument. But don’t allow yourself to be confused

or intimidated. Although some technical information can be useful and interesting, extensive familiarity with technical issues usually isn’t essential to a successful piano-shopping experience, especially when buying a new piano. (A little greater familiarity may be advisable when buying a used or restored instrument.) Most technical information you’ll come across relates to how the manufacturer designed the instrument. You should focus on how the instrument sounds, feels, and looks, not how it got that way. In addition, technical features are often taken out of context and manipulated by advertising and salespeople—the real differences in quality are often in subtleties of design and construction that don’t make good ad copy.

For 20 years, *The Piano Book* has acted as a textbook on how to buy a piano, but over the years many people have asked for something a little simpler. *Acoustic & Digital Piano Buyer* is the answer, and this article is the beginning. For those readers who love reading about the finer technical details, *The Piano Book* is a must read. But in the interests of brevity and simplicity, we decided in this publication to keep technical details to a minimum.

The purpose of this article is modest: to provide an overview of the piano-buying process, with an emphasis on the decisions you’ll have to make along the way, and on the factors that will affect any acoustic piano purchase. To do this succinctly, it will be necessary to make a number of generalizations, which you can discard in favor of more complete or nuanced explanations

as you advance toward your goal. References are given to other articles in this publication, or to *The Piano Book*, for further information on selected topics. In addition, for answers to specific questions that arise while you shop, I recommend visiting the Piano Forum at Piano World (www.pianoworld.com), the premiere website for everything related to pianos and pianists.

Vertical or Grand?

Probably the most basic decision to make when buying a piano—and one you may have made already—is whether to buy a vertical or a grand. The following describes some of the advantages and disadvantages of each.

Vertical Advantages

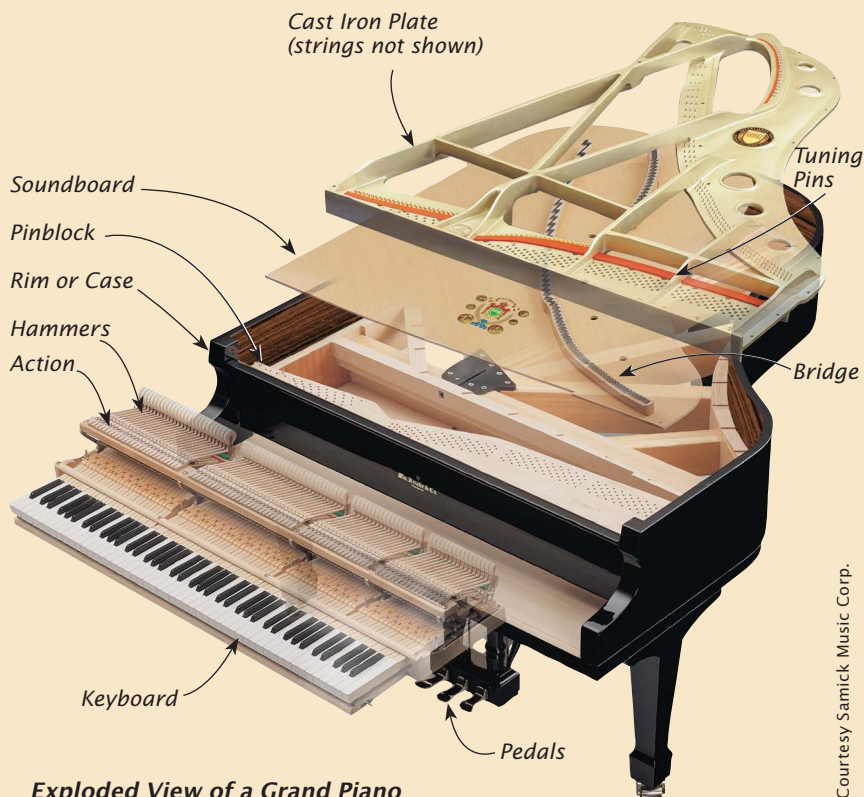
- Takes up less space, can fit into corners
- Lower cost
- Easier to move

Vertical Disadvantages

- Sound tends to bounce back into player's face, making subtle control of musical expression more difficult.
- Action is not as advanced as grand; repetition of notes is slower and less reliable in most cases, and damping is sometimes less efficient.
- Keys are shorter than on grands, making subtle control of musical expression more difficult.
- Cabinetwork is usually less elegant and less impressive.

Vertical pianos are suitable for those with simpler musical needs, or where budget and space constraints preclude buying a grand. Despite the disadvantages noted above, some of the larger, more expensive verticals do musically rival smaller, less expensive grands. They may be a good choice where space is at a premium

A LITTLE BIT OF THE TECHNICAL



Exploded View of a Grand Piano

Courtesy Samick Music Corp.

A little bit (but not too much) of technical information about the piano is useful to have while shopping for one. Important words are in **boldface**.

A piano can be thought of as comprising four elements: mechanical, acoustical, structural, and cabinetry.

Mechanical: When you press a piano **key** (usually 88 in number), the motion of your finger is transmitted through a series of levers and springs to a felt-covered wooden **hammer** that strikes the strings to set them vibrating. This complex system of keys, hammers, levers, and springs is known as the **action**. Also, when you press a key, a felt **damper** resting against each string lifts off, allowing the string to vibrate. When you let the key up, the damper returns to its resting place, stopping the string's vibration. **Pedals**, usually three in number, are connected to the action and dampers via **trapwork** levers, and

serve specialized functions such as sustaining and softening the sound. The right-foot pedal is called the **damper** or **sustain pedal**; it lifts all the dampers off all the strings, allowing the strings to ring sympathetically. The left-foot, **soft pedal** (on a grand piano, the **una corda pedal**) softens the sound. The function of the middle pedal varies depending on the type and price level of the piano (more on that later). As a **sostenuto pedal**, it selectively sustains notes or groups of notes, a function required only rarely in a small percentage of classical compositions. Other possible functions for the middle pedal include a damper pedal for the bass notes only, and a mute pedal that reduces the sound volume by about half.

Acoustical: Piano **strings** are made of steel wire for the higher-sounding notes (**treble**), and steel wire wrapped with copper for the lower-sounding



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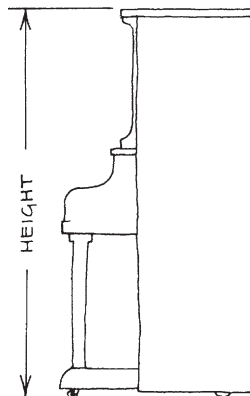
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afford and have space for. Small differences in size between models are more significant in smaller pianos than in larger ones. However, a difference in size of only an inch or two is generally irrelevant, as it could be merely due to a larger cabinet or case.

Verticals



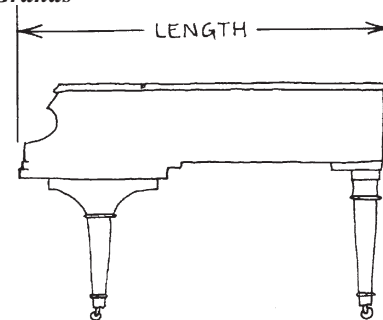
Vertical pianos are measured from the floor to the top of the piano. Verticals less than 40" tall are known as spinets. They were very popular in the post-World War II period, but in recent years have nearly died out. Verticals from 40" to about 43" or 44" are called consoles. Spinet and console actions must be compromised somewhat in size or placement within the piano to fit them into pianos of this size. The tone is also compromised by the shorter strings and smaller soundboard. For this reason, manufacturers concentrate on the furniture component of spinets and consoles and make them in a variety of decorator styles. They are suitable for buyers whose piano needs are casual, or for beginning students, and for those who simply want a nice-looking piece of furniture in the home. Once students progress to an intermediate or advanced stage, they are likely to need a larger instrument.

Studio pianos, from about 44" to 47", are more serious instruments. They are called studios because they are commonly found in the practice rooms of music schools. Manufacturers make them in both attractive furniture styles for the home and in functional, durable, but aesthetically bland styles for school and other institutional use. If you don't require attractive furniture, you may save money by buying the school style. In fact, many buyers prefer the simple lines of the institutional models.

Verticals about 48" and taller, called uprights, are the best musically. New ones top out at about 52", but in the early part of the 20th century they were made even taller. The tallest verticals take up no more floor space than the shortest ones, but some buyers may find the taller models too massive for their taste. Most uprights are made in an attractive, black, traditional or institutional style, but are also available with exotic veneers, inlays, and other touches of elegance.

The width of a vertical piano is usually a little under five feet and the depth around two feet; however, these dimensions are not significantly related to musical quality.

Grands



Grand pianos are measured with the lid closed from the very front of the piano (keyboard end) to the very back (the tail). Lengths start at 4'6" and go to over 10' (even longer in some experimental models). Widths are usually around 5' and heights around 3', but only the length has a bearing on musical quality.

Grands less than 5' long are the musical equivalent of spinets and consoles; that is, they are musically compromised and are mainly sold as pieces of furniture. Grands between about 5' and 5½' are very popular. Although slightly compromised, they can reasonably serve both musical and furniture functions and are available in many furniture styles. (By the way, piano professionals prefer the term *small grand* to *baby grand*. Although there is no

exact definition, a small grand is generally one less than about 5½' long.) Above 5½', pianos rapidly improve, becoming professional quality at about 6'. Pianos intended for the home or serious professional top out at about 7' or 7½'. These sizes may also satisfy the needs of smaller concert venues. Larger venues require concert grands, usually about 9' long.

When considering what size of piano is right for your home, don't forget to add two to three feet to the length of a grand or the depth of a vertical for the piano bench and pianist. Shoppers tend to underestimate what will fit and buy smaller pianos than necessary. Sometimes, the next-size-larger instrument can give you a great deal of tonal improvement at little additional cost. Dealers can usually lend you templates corresponding to different piano sizes to lay down on your floor so you can measure what will fit.

Budget

Your budget is probably the most important factor in your choice of piano, but it's hard to make a budget when you don't know how much pianos cost. Here is some rule-of-thumb information to get you started:

Most new vertical pianos sell in the range of \$3,000 to \$10,000, though some higher-end ones cost two or three times that, and a few cost less. Entry-level grand pianos generally go for \$5,000 to \$10,000, mid-range grands from \$10,000 to \$30,000, and high-end grands for \$30,000 to \$100,000 or more. Unrestored but playable used pianos cost from perhaps 20 to 80 percent of the cost of a comparable new instrument, depending on age and condition, with 15-year-old used pianos coming in at about 50 percent. The cost of restored instruments will be discussed later. More complete and accurate information can be found in the articles

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on **new** and **used** pianos, and in the “**Model & Pricing Guide**” reference section, elsewhere in this issue.

Rent or Buy?

If the piano is being purchased for a beginner, there is a significant possibility that he or she will not stick with playing the piano. To handle this and other “high-risk” situations, most dealers offer a rental/purchase program. In the typical program, the dealer would rent you the piano you are considering purchasing for up to six months. You would pay round-trip moving expenses upfront, usually \$300 to \$400, plus a monthly rental fee, typically \$50 to \$100 for a vertical piano. (Rental/purchase programs do not usually apply to grand pianos.) Should you decide to buy the piano at any time before the end of the six-month term, all money paid up to that point would be applied to the purchase. Otherwise, you would return the piano and be under no further obligation.

Two pieces of advice here: First, make sure you rent the piano you ultimately wish to buy, or at least rent from the dealer who has that piano, and not simply the piano or dealer with the lowest rental rate—if you eventually decide to buy from a different dealer, you’ll forfeit the rental payments already made to the first dealer. However, if you decide to buy a different piano from the same dealer from whom you rented, it’s possible that dealer would agree to apply some or all of the rental payments to the new piano—but check on this in advance. Second, clarify issues of price before you decide whether to rent or buy. Specifically, find out whether you’ll be allowed to apply the rental payments toward, for example, today’s sale price, rather than toward the regular price six months from now—or conversely, if you’ll be held to today’s price should

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there be a sale six months from now. Keep in mind, however, that a “sale” is generally a reduction in price designed to entice you to buy now.

Quality

Like just about everything else you can buy, pianos come in a range of quality levels. When we speak of *quality* in a piano, we are referring to how it sounds, plays, and looks, and how well it will hold up with time and use. These are functions of the care taken in the design of the

instrument; the quality of the materials used and how they are assembled; and the amount of handwork put into the final musical and aesthetic finishing of the instrument. With a new piano, we are also concerned, to a lesser extent, with how much pre-sale service is required by the dealer to make the instrument ready—a dealer is less likely to perform a lot of “make-ready” on an inexpensive piano. Also important are the terms of the warranty and the manufacturer’s (or other warrantors’) reputation for honoring

warranties. The prestige value of the name and the history of the brand may also be perceived as a form of quality by some buyers. *The Piano Book* goes into great detail about what creates quality in a piano.

As you can imagine, any discussion of quality in pianos is likely to involve a lot of subjectivity and be somewhat controversial. However, a useful generalization for the purpose of discussing quality can be had by dividing pianos into two types: performance-grade and consumer-grade. Performance-grade pianos

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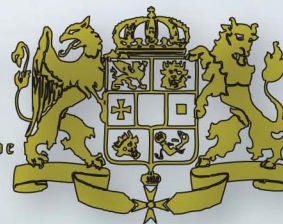
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are made to a single, high quality standard, usually in relatively small quantities, by companies that strongly favor quality considerations over cost. Consumer-grade pianos, on the other hand, are built to be sold at a particular price, and the design, materials, and level of workmanship are chosen to fit that price. Most consumer-grade pianos are mass-produced at a variety of price levels, with materials and designs chosen accordingly. Throughout much of the 20th century, the United States produced both types of piano in abundance. At the present time, however, most performance-grade pianos are made in Europe and the United States, while virtually all consumer-grade pianos are made in Asia. Due to globalization and other factors, the distinction between the two types of piano is beginning to blur. This is discussed at greater length in the article “**The New-Piano Market Today**,” elsewhere in this issue.

The above explanation of quality in pianos is very general, and some aspects of quality may be more applicable to your situation than others. Therefore, it pays to take some time to consider exactly what you expect from your piano, both practically and in terms of lifestyle. Practical needs include, among others, the level of expressiveness you require in the piano’s tone and touch, how long you want the instrument to last or intend to keep it, and what furniture it must match—as well as certain functional considerations, such as whether you use the middle pedal, desire a fallboard (key cover) that closes slowly, or need to be able to lock the piano. Lifestyle needs are those that involve the prestige or artistic value of the instrument, and how ownership of it makes you feel or makes you appear to others. Just as a casual driver may own a Mercedes, or one devoid of artistic abilities may own great works of

art, many who don’t play a note purchase expensive pianos for their artistic and prestige value.

A couple of the practical considerations require further discussion. Concerning expressiveness: What kind of music do you play or aspire to play? One can play any kind of music on any piano. However, some pianos seem better suited in tone and touch than other kinds to some kinds of music. Quality in piano tone is often defined in terms of the instrument’s ability to excel at pleasing players of so-called “classical” music because this kind of music tends to make the greatest expressive demands on an instrument. So if you aspire to play classical music seriously, you may wish to one day own a fine instrument capable of the nuanced tone and touch the music demands. On the other hand, if classical music isn’t your thing, you can probably get away with a much less expensive instrument.



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A key factor concerns how long you want to keep the instrument: Is it for a beginner, especially a youngster, and you're not sure piano lessons will "stick"? Is it a stepping stone to a better piano later on? Then an inexpensive piano may do. Do you want this to be the last piano you'll ever buy? Then, even if your playing doesn't yet justify it, buy a piano you can grow into but never grow out of.

A note about how long a piano will last—a question I hear every day. The answer varies for pianos almost as much as it does for people. A piano played 16 hours a day in a school practice room might be "dead" in ten years or less, whereas one pampered in a living room in a mild climate might last nearly a century before requiring complete restoration to function again. A rule-of-thumb answer typically given is that an average piano under average conditions will last 40 to 50 years. If past experience is any guide, it would not be unreasonable to predict that the best-made pianos will last about twice as long as entry-level ones, given similar conditions of use and climate. However—and this is the important point—most pianos are discarded not because they no longer function—in fact, they may go on to long lives as used pianos for other people—but because they no longer meet the needs or expectations of their owners or players. A player may have musically advanced beyond what the instrument will deliver, or the owner may now be wealthier and have higher expectations for everything he or she buys—or perhaps no one in the house is playing anymore and the piano is just taking up space. Thus, the important consideration for most buyers, especially buyers of new or relatively young pianos, is how long the piano in question will meet their needs and expectations, rather than how long that piano will last.



Reinstalling the cast-iron plate during the rebuilding of a grand piano

You'll get a better sense of what quality means in a piano if you play a wide variety of them, including ones that cost less than what you plan to spend, as well as ones you can't afford. Warning: The latter can prove dangerous to your bank account. It's not unusual for a buyer to begin shopping with the intention of buying a \$3,000 vertical, only to emerge some time later with a \$30,000 grand!

New or Used?

The next choice you'll have to make is whether to buy new or used. The market for used pianos is several times the size of the market for new ones. Let's look at the merits of each choice:

New Piano Advantages

- Manufacturer's warranty
- Little chance of hidden defects
- Lower maintenance costs
- Easier to shop for
- Usually more local choices
- Longer piano life expectancy
- Greater peace of mind after purchasing

New Piano Disadvantages

- Higher upfront cost

- Significant depreciation loss if resold within first few years
- Limited choice of attractive old styles and finishes

Used Piano Advantages

- Lower upfront cost
- Greater choice of attractive old styles and finishes
- Can be more fun and interesting to shop for (if you like shopping for old things)
- Restorer may detail instrument to an extent that rivals new piano
- Piano likely to be already significantly depreciated, resulting in little or no loss if resold

Used Piano Disadvantages

- No manufacturer's warranty (though there may be a dealer's or restorer's warranty)
- Greater chance of hidden defects (unless completely restored)
- Higher maintenance costs (unless completely restored)
- Shorter piano life expectancy (unless completely restored)
- Can be maddeningly difficult and confusing to shop for
- Need to pay technician to examine and appraise it
- Usually fewer local choices
- Possible need to size up restorer's ability to do a good job

Despite the longer list of disadvantages, most people buy used because of the lower upfront cost and because they feel they can manage the risks involved. The most important rule by far in managing risk is to have the piano professionally examined and appraised by a piano technician prior to purchase. This is especially important when buying from a private-party seller because there is no warranty, but it should also be done for peace of mind when buying from a professional seller, particularly if the piano is over ten years old. This will cost between \$100 and \$200 and is well worth the money. If you don't already have a



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A subset of used pianos consists of instruments that have been professionally restored. The complete restoration of a piano is known as *rebuilding*. There is no universally agreed-on definition of what is included in a rebuilding job, so you have to ask specifically what has been done. A minimal partial restoration is called *reconditioning*—often just cleaning up the piano, replacing a few parts, and adjusting it. Vertical pianos are almost never completely rebuilt because the cost cannot be recouped in the sale price. However, verticals are frequently

reconditioned. A complete rebuilding of a top-quality grand piano by a top-notch rebuilder generally costs from \$20,000 to \$40,000—and that's if you own the piano. If you're buying the piano too, figure a total cost of from 75 to more than 100 percent of the cost of a new piano of similar quality. A partial rebuilding of a lower-quality brand might cost half that, or even less.

Buying a used or restored piano is generally more difficult than buying a new one because, in addition to making judgments about the underlying quality of the instrument, you also must make judgments about its condition or about the skill and trustworthiness of the restorer—there's a greater concern about being burned if you make a mistake. Some find this too stressful or time-consuming. Others find the hunt fascinating, and end up discovering an entire world of piano buffs, and piano

technical and historical trivia, in their community or online. It helps to remember that a new piano becomes “used” the moment it is first sold. Although junk certainly exists, used pianos actually come in a bewildering variety of conditions and situations, many of which can be quite attractive, musically and financially. The subject is vast. *The Piano Book* has a chapter devoted to it, including how to do your own preliminary technical examination of a piano. A summary of the most important information, including a description of the most common types of used pianos, where to find them, and how much to pay, can be found in the article “**Buying a Used or Restored Piano**” elsewhere in this issue.

The Piano Dealer

The piano dealer is a very important part of the piano-buying experience, for several reasons. First, a knowledgeable and helpful salesperson can help you sort through the myriad possibilities and quickly home in on the piano that's right for you. Second, a dealership with a good selection of instruments can provide you with enough options to choose from that you don't end up settling for less than what you really want (although you can make up for this to some extent by shopping among a number of dealers). Third, all pianos arrive from the factory needing some kind of pre-sale adjustment to compensate for changes that occur during shipment, or for musical finishing work left uncompleted at the factory. Dealers vary a great deal in their willingness to perform this work. There's nothing worse than trying to shop for a piano, and finding them out of tune or with obvious defects. It's understandable that the dealer will put the most work into the more expensive pianos, but a good dealer will make sure that

even the lower-cost instruments are reasonably playable. Last, a good dealer will provide prompt, courteous, skilled service to correct any small problems that occur after the sale, and act as your intermediary with the factory in the rare event that warranty service is needed. Knowledge, experience, helpfulness, selection, and service—that's what you're looking for in a dealer.

Shopping Long-Distance via the Internet

The question often arises as to whether one should shop for a piano long-distance via the Internet. It turns out that this is really two different questions. The first is whether one should locate a dealer via the Internet, possibly far away, then visit that dealer to buy a piano. The second is whether one should buy a piano sight unseen over the Internet.

If you're shopping for a new piano, you'll probably have to visit a dealer. This is because dealers are generally prohibited by their agreements with manufacturers from quoting prices over the phone or via the Internet to customers outside their "market territory," the definition of which differs from brand to brand. But once you set foot in the dealer's place of business, regardless of where you came from, you're considered a legitimate customer and all restrictions are off, even after you return home. There are no such restrictions for advertising or selling used pianos.

Customers, of course, don't care about "market territories." They just want to get the best deal. Given the ease of comparison shopping via the Internet, and the frequency with which people travel for business or pleasure, dealers are increasingly testing the limits of their territorial restrictions, and more and more sales are taking place at dealerships outside the customer's area. This is a delicate subject in the industry, and

the practice is officially discouraged by dealers and manufacturers alike. In private, however, dealers are often happy when the extra business walks in the door (though they hate like heck to lose a sale to a dealer outside their area), and some manufacturers are choosing to look the other way.

There are obvious advantages to shopping locally, and it would be foolish not to at least begin there. Shopping, delivery, and after-sale service are all much easier, and there can be pleasure in forging a relationship with a local merchant. That said, every person's lifestyle and priorities are different. A New Yorker who frequently does business in San Francisco may find it more "local" to visit a piano dealer in downtown San Francisco, near his or her business meeting, than to drive all over the New York metropolitan area with spouse and children on a Saturday morning. In the marketplace, the customer is king. As people become more and more at ease with doing business of all kinds long-distance with the aid of the Internet,

it's inevitable that piano shopping will migrate in that direction as well. In recognition of this trend, several manufacturers now mandate that when a customer buys a piano from a dealer outside the customer's local area, the local authorized dealer of that brand will actually deliver the piano, and will receive a small percentage of the sale from the selling dealer in return for handling any warranty issues that may arise.

Buying a piano sight unseen (which, in view of the above discussion, must involve used pianos, not new) is something entirely different. Obviously, if you're at all musically sensitive, buying a piano without trying it out first is just plain nuts. But, as much as I hate to admit it, it may make sense for some people. In the piano business, we like to say (and I say it a lot) that a piano is not a commodity; that is, a product of which one example is more or less interchangeable with another. Each piano is unique, etc., etc., and must be individually chosen. But for someone who is buying a piano for a beginner, who has no preference in



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touch and tone, and just wants a piano that's reasonably priced, reliable, and looks nice, a piano may, in fact, actually be a "commodity." I might wish it were otherwise, just as an audiophile might wish that I wouldn't buy a stereo system off the shelf of a discount department store, but we're all aficionados of some things and indifferent about others, and that's our choice. Furthermore, just as people who buy electronic keyboards frequently graduate to acoustic pianos, the person who today buys a piano over the Internet may tomorrow be shopping at a local dealer for a better piano with a particular touch and tone. Although it isn't something I'd advise as a general rule, the fact is that many people have bought pianos over the Internet without first trying them out and are pleased with their purchase (and some people, probably, are not so pleased).

If you're thinking of making a long-distance purchase, however, please take some precautions (not all of these precautions will be applicable to every purchase). First, consider whether it's really worth it once you've taken into account the cost of long-distance shipping. Find out as much as you can about the dealer. Get references. Get pictures of the piano. Hire a piano technician in the dealer's area to inspect the piano (use the Piano Technicians Guild website, www.ptg.org, to find a technician) and ask the technician about the dealer's reputation. Make sure the dealer is experienced with arranging long-distance piano moves, and uses a mover that specializes in pianos. Find out who is responsible for tuning and adjusting the piano in your home, and for repairing any defects or dings in the finish. Get the details of the warranty, especially who is responsible

for paying the return freight if the piano is defective. Find out how payment is to be made in a way that protects both parties. And if, after all this, you still want to buy long-distance, my best wishes for a successful purchase.

Negotiating Price and Trade-Ins

The prices of new pianos are nearly always negotiable. Only a handful of dealers have non-negotiable prices. If in doubt, just ask—you'll be able to tell. Some dealers carry this bargaining to extremes, whereas others start pretty close to the final price. Many dealers don't like to display a piano's price because not doing so gives them more latitude in deciding on a starting price for negotiation, depending on how they size up the customer. This makes shopping more difficult. Use the

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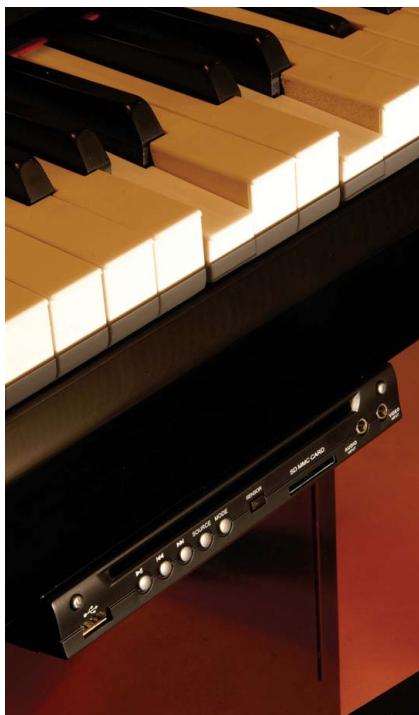


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Typically, the control box for an electronic player-piano system is attached to the underside of the keyboard.

price information in the “**Model & Pricing Guide**” of the current issue of *Acoustic & Digital Piano Buyer* to determine the likely range within which a given model will sell. Don’t give in too quickly. It’s quite common for the salesperson to call a day or two later and offer a lower price. If there’s an alternative piano at another dealership that will suit your needs just as well, it will help your negotiating position to let the salesperson know that.

Due to the high cost of advertising and conducting piano megasales (such as college sales, truckload sales, etc.), prices at these events are often actually *higher* than the price you could negotiate any day of the week, and the pressure to buy can be enormous. Shop at these sales only after you’ve shopped elsewhere, and look for the real bargains that occasionally exist.

If you’re buying a new piano to replace one that’s no longer satisfactory, you’ll probably want to trade

in the old one. Dealers will usually take a trade-in, no matter how bad it is, just to be able to facilitate the sale. In fact, in many cases the dealer will offer you what seems like a king’s ransom for the old one. The downside is that when a generous trade-in allowance is given on the old piano, the dealer is then likely to offer you a less-generous price on the new one. To see if you’re being offered a good deal, you’ll have to carefully analyze the fair-market value of the old piano and what would be a likely price for the new one without a trade-in. Sometimes it will be to your advantage to sell the old piano privately, though in that case you’ll need to take into account the hassle factor as well.

For more information about new-piano prices and negotiating, see the introduction to the “**Model & Pricing Guide**,” elsewhere in this issue, as well as in *The Piano Book*.

Used-piano prices may or may not be negotiable. If the used piano is being sold by a dealer who primarily sells new pianos at negotiable prices, then the used-piano prices are probably also negotiable. Prices of restored pianos sold by the restorer are less likely to be negotiable, as technical people are usually less comfortable with bargaining. Prices of pianos for sale by private-party sellers are usually negotiable, in part because the seller often has little idea of what the piano should sell for and has just made up a price on the basis of wishful thinking. But even knowledgeable sellers will usually leave a little wiggle room in their price.

Electronic Player-Piano Systems

Prior to the Great Depression, most pianos were outfitted with player-piano mechanisms—the kind that ran on pneumatic pressure and paper rolls. Today’s player pianos are all electronic; they run on CDs,

iPods, floppy diskettes, or electronic downloads from the Internet, and are far more versatile and sophisticated than their pneumatic ancestors. Now you don’t have to wait until Junior grows up to hear something interesting from the piano! A substantial percentage of new pianos, especially grands, are being outfitted with these systems. In fact, many pianos are being purchased as home-entertainment centers by buyers who have no intention of ever playing the piano themselves.

Several companies make these systems. Yamaha’s Disklavier system is built into select Yamaha models at the Yamaha factory. PianoDisc and QRS Pianomation, the two major after-market systems, can be installed in any piano, new or used, typically by the dealer or at an intermediate distribution point. If installed properly by a trained and authorized installer, none of these systems will harm the piano or void its warranty. However, such installations are complicated and messy and must be done in a shop, not in your home.

The most basic system will play your piano and accompany it with synthesized orchestration or actual recorded accompaniment over speakers attached to the piano. These systems generally add about \$4,000 to \$7,000 to the price of the piano. Add another \$1,500 to \$2,000 to enable the piano to record your own playing for future playback. For a little bit more, you can mute the piano (stop the hammers from hitting the strings), turn on a digital piano sound, and listen through headphones. The range of prices reflects the variety of configurations and options available, including what music source you use (CD, iPod, MP3 player, etc.) and how much memory storage you purchase, among others. There are also higher-level systems at twice the price that provide touch screens with wireless connection for instant downloading



Continental Style

Wyman/Oria



Institutional or Professional Style

Sammick Music Corp.



School Style

Pramberger Piano Co.

of songs from the Internet. See the article “**Buying an Electronic Player-Piano System**” elsewhere in this issue for more information.

Furniture Style and Finish

Although for most buyers the qualities of performance and construction are of greatest importance in selecting a piano, a piano is also a large piece of furniture that tends to become the focal point of whatever room it is placed in. This is especially true of grands. Add to that the fact that you’ll be looking at it for many years to come, and it becomes obvious that appearance can be an important consideration. For some buyers, it may be the most important consideration.

Vertical pianos without front legs are known as *Continental* style (also called *Contemporary*, *European Contemporary*, or *Eurostyle*). They are usually the smallest (42 to 43 inches high) and least expensive pianos in a manufacturer’s product line.

Pianos with legs supported by *toe blocks* are sometimes known as *Institutional* or *Professional* style, particularly when the cabinet also has little in the way of decoration or embellishment.

School pianos are a subset of the institutional-style category. Generally 45 to 47 inches in height, these are institutional-style pianos made specifically for use in school practice rooms and classrooms. They usually



Decorator Style: French Provincial Cherry

Pramberger Piano Co.



Decorator Style: Traditional Mahogany

Pramberger Piano Co.



Decorator Style: Mediterranean Oak

Sammick Music Corp.



Hybrid Style

Wyman/Oria

come equipped with long music racks for holding multiple sheets of music, locks for both the lid and the fallboard, and heavy-duty casters for easier moving. They are generally available in ebony or satin wood finishes. Sturdy and sometimes plain-looking, they are also often purchased by non-institutional customers for less furniture-conscious locations. (If you’re buying a piano for an institution, please read “**Buying Pianos for an Institution**,” elsewhere in this issue.)

Vertical pianos with free-standing legs not reinforced by toe blocks are generally known as *Decorator* style. Common decorator styles are Queen

Anne and French Provincial, generally in cherry (or Country French in oak), all with curved legs; Italian Provincial, typically in walnut with square legs; Mediterranean, usually in oak with hexagonal legs; and Traditional, most often in mahogany or walnut, with round or hexagonal legs. Matching music racks and cabinet decoration are common furniture embellishments. Furniture-style preference is an entirely personal matter. A practical consideration, however, is that front legs not supported by toe blocks have a tendency to break if the piano is moved frequently.

Hybrids styles, containing features of both institutional and



Straight Leg

Spade Leg

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**Victorian Style
with Ice-Cream Cone legs**

Petrof



Queen Anne Style

Samick Music Corp.

decorator styles, are common, especially in Asian pianos.

Grand pianos come in far fewer styles than verticals. As you shop, it is likely you will see only a few different styles, in a number of woods and finishes.

The traditional grand piano case is likely familiar to everyone. It has rather straight or slightly tapered legs, often flaring slightly just above the floor (called a *spade leg*), and usually a rather plain, solid music rack.

Victorian style (sometimes called *Classic style*) is an imitation of a style in fashion in the late 1800s, with large, round, fluted legs and a fancy, carved music desk. Variations of the Victorian style have “ice-cream cone” or other types of round-ish legs.

As with verticals, grands also come in Queen Anne and French Provincial styles, with curved legs, and in other period styles. In addition to the leg style, these usually differ in the treatment of the music rack and cabinet embellishment as well.

Pianos come in a variety of woods, most commonly ebony (sometimes called ebonized), which is not actual ebony wood, but an inexpensive,

sturdy veneer that has been painted black; as well as mahogany, cherry, walnut, and oak. Exotic woods include bubinga, rosewood, and many others, available on higher-priced uprights and grands. In pianos of lesser quality, sometimes a less expensive wood will be stained to look like a more expensive one. Pianos are also available in ivory or white, and it’s often possible to special-order a piano in red, blue, or other colors.

In addition to the wood itself, the way the wood is finished also varies. Piano finishes come in either high polish (high gloss) or satin finishes. Satin reflects light but not images, whereas high polish is nearly mirror-like. Variations on satin include matte, which is completely flat (i.e., reflects no light), and open-pore finishes, common on European pianos, in which the grain is not filled in before finishing, leaving a slightly grainier texture. A few finishes are semigloss, which is partway between satin and high polish. As with furniture style, the finish is an entirely personal matter, though it should be noted that satin finishes tend to show fingerprints more than do high-polish finishes.

Most piano finishes are either lacquer or polyester. Lacquer was the finish on most pianos made in the first three-quarters of the 20th century, but it is gradually being supplanted by polyester. In my opinion, lacquer finishes—especially high-gloss lacquer—are more beautiful than polyester, but they scratch quite easily, whereas polyester is very durable. (Lacquer finishes can be repaired more easily.) Hand-rubbed satin lacquer is particularly elegant. Sometimes, when a customer desires a piano in a satin finish but the dealer has in stock only the high-polish polyester model, the dealer will offer to buff it down to a satin finish at a cost of \$500 to \$1,000. This is commonly done, and it works, but usually doesn’t look as nice as the factory-made satin finish.

Touch and Tone

Touch, in its simplest form, refers to the effort required to press the piano keys. Unfortunately, the specifications provided by the manufacturers, expressed in grams, don’t do justice to this complicated subject. The apparent touch can be very different when

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the piano is played fast and loud than when it is played soft and slow, and this difference is not captured in the numbers. If you are other than a beginner, be sure to try it out both ways.

Advanced pianists tend to prefer a touch that is moderately firm

because it provides better control than a very light touch and strengthens the muscles. Too light a touch, even for a beginner, can cause laziness, but too firm a touch can be physically harmful over time. The touch of most new pianos today is within a reasonable range for their intended audience, but the touch of older pianos can vary a lot depending on condition. A piano teacher may be able to assist in evaluating the touch of a piano for a beginner, particularly if considering an entry-level or used piano.

Piano *tone* is also very complex. The most basic aspect of tone, and the one most easily changed, is its brightness or mellowness. A *bright* tone, sometimes described by purchasers as *sharp* or *loud*, is one in which higher-pitched overtones predominate. A *mellow* tone, sometimes described as *warm*, *dull*, or *soft*, is one in which lower-pitched overtones are dominant. Most pianos are somewhere in between, and vary from one part of the keyboard to another, or depending on how hard one plays. The key to satisfaction is to make sure that the tone is right for the music you most often play or listen to. For example, jazz pianists will often prefer a brighter tone, whereas classical pianists will often prefer one that is mellow, or that can be varied easily from soft to loud; i.e., that has a broad dynamic range. However, there is no accounting for taste, and there are as many exceptions to these generalizations as there are followers. A piano technician can make adjustments to the brightness or mellowness of the tone through a process known as *voicing*.

Another aspect of tone to pay attention to is *sustain*, which is how long the sound of a note continues at an audible level, while its key is depressed, before disappearing. Practically speaking, this determines the ability of a melodic line to “sing”

THE PIANO AS SCULPTURE

Both grands and verticals are available in *Designer* versions, with such decorative features as inlays and marquetry, carving, wood veneer or chrome accents, burl woods, two-tone effects, decorative moldings, painting, and more. Some designer pianos are outrageous or defy categorization, while others attempt to be very “modern,” or combine both the modern and the traditional.

The highest form of piano art is embodied in *Art-Case* pianos. These are usually highly decorated instruments, their embellishments organized around a theme and designed by a famous furniture designer, who in his work may make use of inlays, paintings, gem stones, or just about any other medium one can think of. These pianos are very expensive and considered works of art as well as musical instruments.

Under the heading “Piano Art,” examples of designer and art-case pianos are scattered throughout this publication for your appreciation and amusement.

above an accompaniment, especially when played in the critical mid-treble section.

Most pianos will play loudly quite reliably, but providing good expression when played softly is considerably more challenging. When trying out a piano, be sure to play at a variety of dynamic levels. Test the action with your most technically demanding passages. Don’t forget to test the pedals for sensitivity commensurate with your musical needs.

Room acoustics have a tremendous effect on piano tone, so you’ll want to note the extent to which the acoustics of the dealer’s showroom differ from those of your home, and make allowance for it. Hard surfaces, such as bare walls, tile, and glass will make the tone brighter. Absorbent surfaces—upholstered furniture,

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heavy drapes, plush carpeting—will make it mellower. Once the piano is in the home, a technician may be able to make adjustments to the tone, but to avoid unpleasant surprises, it's best to buy a piano whose tone is already close to what you want. Adjusting the room acoustics through the strategic use of wall hangings, scatter rugs, and furniture can also help. See the article “**How to Make Your Piano Room Sound Grand,**” elsewhere in this issue.

The Piano Warranty

The majority of pianos never generate a warranty claim. That said, few people would sleep well worrying about potential problems arising in such a major purchase. Key warranty issues are: what is covered, for how long, and who stands behind the warranty. The overwhelming majority of new-piano warranties cover

the cost of parts and labor necessary to correct any defect in materials or workmanship. The warrantor (usually the manufacturer or distributor) also generally reserves the right to replace the piano should it choose to in lieu of repair. The warrantee (the customer) generally makes warranty claims to the dealer who, upon approval of the warrantor, makes the necessary repairs or replaces the instrument, as applicable. If the dealer is out of business, or if the customer has moved, warranty claims are made to the new local dealer of that brand, if any, or directly to the warrantor.

Warranties are in effect from the date of purchase and generally run between five and fifteen years, depending on the manufacturer. Note that there is little correlation between the length of warranty and the quality of the piano, as decisions on warranty terms are often made

based on marketing factors. For example, a new manufacturer might well offer a longer warranty to help bolster sales.

The Magnuson-Moss Warranty Act mandates that warranties be either *full* or *limited*. In the piano industry, the only significant difference is that full warranties remain in effect for the entire stated term, regardless of piano ownership, whereas limited warranties cover only the original purchaser. If you plan on possibly selling or trading up within a few years, a full warranty offers protection to the new owner, increasing the piano's value to them, and may justify a little higher selling price or trade-in value.

The final key issue about piano warranties concerns who stands behind the warranty. In most cases the warranty is backed by the actual manufacturer. This is advantageous, as the manufacturer has a major capital investment in its factory and has probably been in business for many years. The likelihood is that it will be around for the entire five- to fifteen-year period of your warranty. In today's piano market, however, many brands are manufactured under contract for a distributor, and the warranty is backed only by that distributor. Often, the distributor's only investment is a small rented office/warehouse and a few dozen pianos. Pianos are also often made to order for a particular dealership under a private brand name and are sold—and warranted—only by that dealership and/or its affiliates. In those cases, the warranty is further limited by the financial strength of the distributor or dealership, which can be difficult for the shopper to evaluate. In these situations, caution is called for.

When purchasing a used or restored piano, there is no warranty from a private, non-commercial seller, but a commercial seller will usually provide some kind of warranty, even



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if for only a few months. Pianos that have been completely restored typically come with a warranty with terms similar to that of a new piano, though of course it is backed by only the restorer.

Miscellaneous Practical Considerations

Bench

In all likelihood, your purchase of a new piano will include a matching bench. Benches for consumer-grade pianos are usually made by the piano manufacturer and come with the piano. Benches for performance-grade pianos are more often provided separately by the dealer.

Benches come in two basic types: fixed-height and adjustable. Consumer-grade pianos usually come with fixed-height benches that have either a solid top that matches the piano's finish, or a padded top with

sides and legs finished to match the piano. The legs of most benches will be miniatures of the piano's legs, particularly for decorative models. Most piano benches have music storage compartments. School and institutional-type vertical pianos often come with so-called "stretcher" benches—the legs are connected with wooden reinforcing struts to better endure heavy use.

Adjustable benches are preferred by serious players, and by children and adults who are shorter or taller than average. The deeply-tufted tops come in a heavy-duty vinyl and look like leather; tops of actual leather are available at additional cost. Adjustable benches vary considerably in quality. The best ones are expensive (\$500 to \$750) but are built to last a lifetime.

Finally, if the piano you want doesn't come with the bench you desire, talk to your dealer. It's common

for dealers to swap benches or bench tops to accommodate your preference, or to offer an upgrade to a better bench in lieu of a discount on the piano.

For more information, see "**Benches, Lamps, Accessories, and Problem Solvers**," elsewhere in this issue.

Middle Pedal

As I mentioned near the beginning of this article, the function of the middle pedal varies. In some circumstances, you may need to consider whether the function of the middle pedal on a particular instrument will meet your musical needs.

On most new vertical pianos, the middle pedal operates a mute that reduces the sound volume by about 50 percent, a feature often appreciated by family members of beginning students. If your piano lacks this feature, after-market mute

mechanisms are available for grands and verticals through piano technicians or dealers. On older verticals and a few new ones, the middle pedal, if not a mute, usually operates a bass sustain, although occasionally it's a "dummy" pedal that does nothing at all. I've never known anyone to actually use a bass-sustain pedal, so it might as well be a dummy.

On most grands and a few expensive uprights, the middle pedal operates a sostenuto mechanism that selectively sustains only those notes whose keys are down at the moment the pedal is pressed. This mechanism is called into action for only a relatively few pieces of classical music, yet it is generally considered obligatory for any "serious" instrument. Only inexpensive new and used grands omit the sostenuto, usually in favor of a bass sustain. (The obligatory nature of the sostenuto

pedal—or any middle pedal—on a grand piano is a largely American phenomenon. Until fairly recently, many "serious" European pianos made for the European market had only two pedals.)

Fallboard (*Keyboard Cover*)


Vertical pianos use one of three basic fallboard designs: the Boston fallboard, a sliding fallboard (both of which disappear when open), or a one-piece "drop" fallboard with integrated music shelf.

The Boston fallboard is found on most furniture-style pianos and characteristically is a two-piece, double-hinged assembly. It is easily removed for service, and the rigidity provided by the hinges keeps the fallboard and the piano's side arms from being scratched when the fallboard is opened or closed.

The sliding fallboard, a one-piece cover that slides out from

under the music desk to cover the keys, is considerably less expensive. However, if it is pulled unevenly and/or upwardly, it can scratch the fallboard or the inside of the piano's side arms.

The one-piece "drop" fallboard is commonly found on larger uprights. It is simply hinged at the back and lifts up to just past vertical, where it lies against the upper front panel of the piano. Attached to its underside is a small music shelf that is exposed when the fallboard is opened, then manually unfolded.

Grand pianos use a smaller one-piece "drop" fallboard that opens under the music desk. Fallboards on many newer grands are hydraulically damped so as to close slowly over the keys, eliminating the possibility of harming the player's or a young child's fingers. Aftermarket kits are available for pianos that lack this feature. 



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WHEN I BEGAN servicing pianos during the 1970s, most pianos sold in the U.S. (with the important exception of the growing number of pianos from Japan) were made in the U.S. by about a dozen different makers, which together turned out hundreds of thousands of pianos annually. By current standards, many were not particularly well made. Today, only three companies make pianos in the U.S. in any real quantities, which combined amount to no more than a few thousand instruments per year. However, about 60,000 new acoustic pianos are sold here annually under some 70 different brand names, made by more than 30 companies in a dozen countries. The quality is the best it's ever been. Here are the highlights of what's happened:

- The Japanese "invasion" of the 1960s onward was followed by a wave of pianos from Korea in the 1980s and '90s. Together, these imports put most low- and mid-priced American makers out of business.
 - Rising wages in Korea in the 1990s caused much of that country's piano production to move to Indonesia and China.
 - The economic emergence of China during the 2000s resulted in a new wave of low-priced, low-quality pianos appearing in the U.S. and globally.
 - Foreign firms and investors have combined low-cost Chinese and Indonesian labor with high-quality design and manufacturing expertise, parts, and materials from Western countries to greatly increase the quality of low-priced Chinese and Indonesian pianos.
 - Cheaper equipment for computer-aided design and manufacturing has allowed for their more widespread use by small and large firms alike, with a consequent
- increase in precision of manufacturing at all price levels.
- Since the 1990s, a dozen or more European makers of high-quality pianos have been aggressively marketing their pianos in the U.S., challenging entrenched interests and creating more choice and higher quality in the high end of the piano market. They are currently hampered, however, by a disadvantageous exchange rate.
 - To better survive in a global economy, high-end companies have diversified their product lines to include low- and mid-priced pianos, setting up factories or forming alliances with companies in parts of the world where labor is cheaper. At the same time, makers of low- and mid-priced pianos are creating higher-priced models using parts and expertise

usually associated with the high-end companies, thus blurring the line between the high and low ends of the piano market.

China

The first piano factory in China is said to have been established in 1895, in Shanghai (perhaps by the British?). During the 1950s, the Communists consolidated the country's piano manufacturing into four government-owned factories: Shanghai, Beijing, and Dongbei (means "north-east") in the northern part of the country, and Guangzhou Pearl River in the south. Piano making, though industrial, remained primitive well into the 1990s. In that decade, the government of China began to open the country's economy to foreign investment, first only to partnerships with the government, and later to completely private concerns.

As China's economy has opened up, the nation's rising middle and upper classes have created a sharp increase in demand for pianos. Tempted by the enormous potential of the Chinese domestic market, as well as by the lure of cheap goods manufactured for the West, foreign interests have built new piano factories

in China, bought existing factories, or contracted with existing factories for the manufacture of pianos. The government has also poured

About 60,000 new acoustic pianos are sold here annually under some 70 different brand names, made by more than 30 companies in a dozen countries.

money into its own factories to make them more competitive and to accommodate the growing demand.

Except for the government involvement, the piano-making scene in China today is reminiscent of that in the U.S. a century ago: Hundreds of small firms assemble pianos from parts or subassemblies obtained from dozens of suppliers and sell them on a mostly regional basis. The government factories and a few large foreign ones sell nationally. Most of the pianos sold in the Chinese domestic market are still primitive by Western standards. Primarily, the quality has markedly improved where foreign technical assistance or investment has been involved; only those pianos are good enough to be sold in the West.

Although in China the government factories have long had a monopoly on sales through piano dealers, that hold is gradually being eroded, and the government entities are experiencing great competitive pressure from all the smaller players. Combined with the inefficiencies and debt inherent in government operations, the current competitive situation is probably making the government think twice about continuing to subsidize the piano industry. Already, one of its factories, Dongbei, has been privatized through its sale to Gibson Guitar Corporation, parent of Baldwin Piano Company.

Besides the government-owned factories and Baldwin, the largest makers in China of pianos for the North American market are Yamaha (Japan), Young Chang (Korea), Sejung (Korea), and, for the Canadian market, Kawai (Japan)—all of

whom own factories in China. Other foreign-owned companies that own factories in China or contract with Chinese manufacturers to make pianos for the U.S. market include Brodmann, Perzina, AXL (Palatino brand), Heintzman, and Schimmel (May Berlin brand). Many American distributors and dealers contract with Sejung, Pearl River, Dongbei, and Beijing, selling pianos in the U.S. under a multitude of names. Steinway & Sons markets the Essex brand, designed by Steinway and manufactured by Pearl River and Young Chang.

And one company, Hailun, is owned and operated by a Chinese entrepreneur, Chen Hailun.

For the first half of this decade, most sales of Chinese pianos in the U.S. were based on the idea of luring customers into the store to buy the least

expensive piano possible. Dealers that staked their business on this approach often lost it. A growing trend now is to manufacture and sell somewhat higher-priced pianos that have added value in the form of better components, often imported to China from Europe and the U.S., but still taking advantage of the low cost of Chinese labor. The best ones are not just a collection of parts, however, but also have improved designs developed with foreign technical assistance, and sufficient oversight to make sure the designs are properly executed.

The oversight is especially important. Chinese piano manufacturers have been quite aggressive in acquiring piano-making knowledge, and are happy to use their alliances with Western distributors in furthering that end. There has been a

tendency, however, for Chinese factory managers to ignore the advice and requests of Western distributors once their inspectors leave the factory, resulting in product that does not meet the standards or specifications contracted for. The distributors have gradually discovered that the only way to overcome this problem is to own the factory themselves, to maintain a constant presence at the factory, or to constitute such a large percentage of the Chinese company's business that they, the Westerners, can control production. Alternatively, a Western company can examine all the pianos in its home country before sending them on to dealers, but this is less satisfactory than stopping problems at the source. Western distributors of Korean pianos used to complain of a similar problem with Korean factory managers during the height of that country's piano industry in the 1980s and '90s. As in Korea, the situation in China is gradually improving as the Chinese become accustomed to Western ways of doing business and more focused on quality control.

Pianos made in China now dominate the North American market, constituting about a third of all new pianos sold in the U.S. At the beginning of this decade, most were just barely acceptable technically, and not musically desirable. Over the years, however, both the technical and musical qualities have taken big leaps forward. While some remain at the entry level, others rival the performance of more expensive pianos from other parts of the world. The jury is still out as to whether some of these pianos will hold up over the long term and in demanding climates and situations. Reports often suggest less consistency than with pianos from other countries, and a continuing need for thorough pre-sale preparation by the dealer (who sometimes must weed out the

**A growing trend
[in Chinese pianos]
is to sell somewhat
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form of better
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bad ones and return them to the factory), but otherwise few major problems. Prices on the better ones are increasing, but for many entry-level buyers, and even for some mid-level buyers, many brands are still good value despite their short track records. Certainly, as short-term investments, and in milder climates and less demanding situations, they should be fine.

Indonesia

Indonesia is China's closest competitor in terms of price and quality. But unlike China, in which many small and large companies, domestic and foreign, are involved in piano manufacturing, virtually all pianos made in Indonesia are the products of three large, foreign players: Yamaha, Kawai, and Samick. For the U.S. market, Yamaha makes only one model, an entry-level grand, in Indonesia; Kawai makes all its small and medium-sized verticals there, and one entry-level grand; and Samick makes all its low- and medium-priced pianos there, both grand and vertical.

Overall, the manufacturing quality is similar to China's, but Indonesia got to this level of quality more rapidly and is perhaps more consistent. This may have been due to the smaller number and, on average, larger size of Indonesia's piano manufacturers, as well as to cultural and political differences between the countries. Development of manufacturing in Indonesia was aided by the fact that the country was already a democratic (more or less), capitalist nation with strong ties to the West, and accustomed to Western ways of working and doing business, with English widely spoken. The government does not own or manage the factories.

One of the big challenges in Indonesia, as in the rest of tropical Asia

(which includes southern China), is climate control inside the factories, and the proper handling of wood to avoid problems later on when the instruments are shipped to drier countries and the wood dries out. All three companies, as well as Pearl River in southern China, have done a good job of meeting this challenge (though some only recently), but caution and proper climate control by the consumer are especially advised when these pianos are to be used in very difficult, dry indoor climates.

Korea

The Korean piano industry has had a tumultuous history, from its beginnings in the war-torn 1950s through its meteoric global rise in the 1980s; through labor unrest, the Asian economic crisis, and the abrupt collapse of the country's piano industry in the 1990s; and most recently through bankruptcies, reorganizations, aborted takeovers, and more bankruptcies. Today, both Samick and Young Chang seem to be on relatively stable financial footing, the latter having just emerged from bankruptcy after being purchased by Hyundai Development Company. As mentioned earlier, due to high labor costs in Korea, both companies have moved most of their manufacturing elsewhere, limiting production at home to the more expensive models.

Quality control in the Korean models is now nearly as good as in pianos from Japan, but getting there has taken 30 years of two steps forward, one step back. The reasons for the slow development are probably

numerous, but undoubtedly some are cultural in nature: Western piano-company personnel have often reported that their Korean counterparts can be proud people, reluctant to take advice from Americans (not that they necessarily should—unless they're trying to sell products to Americans). Samick seems to have discovered that the only way it could achieve the high quality level it was seeking was to do the final preparation or actual production of the instruments in the U.S., which it is now doing for its top-level Wm. Knabe and J.P. Pramberger models.

Musically, the two companies' pianos have never really gained clear, aesthetic identities of their own, other than as very acceptable musical products. Periodic redesigns by German engineers, or American engineers with Germanic names (always sought by piano makers), have brought some progress, but never as much as was hoped for. Part of the reason for the lack of identity may be that there have been such a multitude of product lines made in different factories to constantly changing specifications that nothing has settled down long enough to

Quality control in the Korean models is now nearly as good as in pianos from Japan, but getting there has taken 30 years of two steps forward, one step back.

stick. Internal politics and dealing with quality-control problems have also taken up much energy over the years.

Things are settling down now for both companies. Samick, in its upper- and mid-level lines, is producing some of its nicest pianos ever. Young Chang is playing catch-up, but also has some good designs, with new ones in the pipeline. Both companies' top-level products have much to offer at good prices. Samick also makes pianos for QRS under the Story & Clark brand.

Japan

Japan's two major piano manufacturers, Yamaha and Kawai, began making pianos around 1900 and 1927, respectively, with export to the United States beginning in earnest in the early 1960s. The first few years of export were spent learning to season the wood to the demands of the North American climate, but since then the quality control has been impressive, to say the least, and the standard to which other piano manufacturers aspire. Both companies also have outstanding warranty service, so customers are never left hanging with unsatisfactory instruments. As in Korea, labor costs in Japan have risen to the point where both companies have been forced to move much of their manufacturing elsewhere, making only their more expensive models in Japan. With some exceptions, their grands and tallest uprights are made in Japan, small and mid-sized verticals in other Asian countries.

The tone of Japanese pianos tends to be a little on the bright and percussive side (Yamaha more than Kawai), though less so than in previous years, and pleasing in their own way. In addition to their regular lines, both companies make high-end lines with more "classical" qualities, as well as entry-level lines that reflect a compromise between price and quality. The pianos are very popular with institutions and are real workhorses. Although more expensive than most other Asian pianos, a Japanese-made Yamaha or Kawai piano is hard to beat for reliability. Kawai also manufactures the Boston brand, designed by Steinway and sold through Steinway dealers.

Although more expensive, a Japanese-made Yamaha or Kawai piano is hard to beat for reliability.

United States

Only three American companies manufacture pianos here in any numbers: Steinway & Sons, Mason & Hamlin, and Charles R. Walter. Near Nashville, Tennessee, Samick completes manufacture of Wm. Knabe and J.P. Pramberger pianos, which are partially made in Korea and Indonesia. A couple of other makers are in very limited production: Astin-Weight in Salt Lake City, whose factory was shut down several years ago by storm damage, says it still makes a few pianos; and pianos are once again being assembled in Chicago under the Kimball name using parts sourced from around the world. Baldwin, for a century one of the largest American producers, finally ceased most production at its American factory in 2009, having moved nearly all piano production to its two plants in China.

Steinway & Sons has been making high-quality pianos in New York City since its founding in 1853 by German immigrants. For most of the past century, the company has had little competition in the U.S.: when one desired to buy a piano of the highest quality, it was simply understood that one meant a Steinway. The last decade or two has seen a gradual erosion of that status by more than a dozen European firms and our own Mason & Hamlin. Although each by itself is too small to make a dent in Steinway's business, their combined effect has been to claim a substantial share of the market for high-end pianos in the home. (Steinway still dominates the concert-grand market and, to some extent, the institutional market.) This has been made easier by the

fact that in certain respects these European-made pianos are visibly and audibly of higher quality than American-made Steinways (to be distinguished from Steinways made at the company's branch factory in Hamburg, Germany, which are of the highest quality). Steinways have classic designs and use proven materials and methods of construction, but the musical and aesthetic finishing of the American-made pianos has too often been left uncompleted at the factory in the expectation, frequently unmet, that the dealers would finish it off. Fortunately, the past few years have seen a reversal of this trend in the form of many small improvements at the factory, as well as perhaps better performance by dealers. Though there is room for further improvement, the ratio of compliments to complaints, in my experience, has become more favorable. The recent replacement of American Steinway management by personnel from Steinway's European branches may also be having a salutary effect.

Mason & Hamlin, Steinway's principal competitor in the early part of the 20th century, went into a long period of decline after the Great Depression. After a series of bankruptcies and reorganizations in the 1980s and '90s, Mason & Hamlin was purchased in 1996 by the Burgett brothers, owners of PianoDisc, a leading manufacturer of player-piano systems. Over the past 14 years, from an old brick factory building in Haverhill, Massachusetts, the Burgetts have completely restored the company to its former excellence, and then some. They and their staff have designed or redesigned a complete line of grand pianos and modernized century-old equipment. Rather than compete with Steinway on Steinway's terms, Mason & Hamlin has repositioned itself as an innovator, seeking out or developing high-quality but

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lower-cost parts and materials from around the world, and combining them with traditional craftsmanship to produce a great piano at a somewhat lower price.

Charles R. Walter, a piano design engineer by profession, has been making high-quality vertical pianos in Elkhart, Indiana, since the 1970s, and grands for over ten years. The factory is staffed in large part by members of his extended family. The instruments are built using the best traditional materials and construction practices. Right now, times are tough for small companies such as this, which produce an excellent product but are neither the high-priced celebrated names nor the low-cost mass producers. If you're looking to "buy American," you can't get any more American than Charles R. Walter.

Europe

European makers that regularly sell in the U.S. include: Bechstein, Blüthner, Feurich, August Förster, Grotrian, Sauter, Schimmel, Seiler, Steingraeber, and Wilh. Steinberg (Germany); Bösendorfer (Austria); Fazioli and Schulze Pollmann (Italy); Estonia (Estonia); and Petrof (Czech Republic). Most are of extremely high quality; even the least of them is very good. Until two decades ago, most of these brands were virtually unknown or unavailable in the U.S., but as the European demand for pianos contracted, many of the companies found that Americans, with their large homes and incomes, would buy all the grand pianos they could produce. The liberation of Eastern Europe resulted in an increase in the quality of such venerable brands as Estonia and Petrof, which had suffered under Communist rule, and these brands, too, became available and accepted here.

The rush to sell to Americans has caused some European companies to reconsider the tonal designs of their instruments and to redesign them for better sound projection, tonal color, and sustain—that is, to sound more like American Steinways. Considering that some of these companies are five or six generations old and have redesigned their pianos about that many times in 150 years, this degree of activity is unusual. Some of the redesigns have been great musical successes; nevertheless, the loss of diversity in piano sound is to be mourned.

Several German companies have started or acquired second-tier lines to diversify their product lines, and have gradually shifted much of their production to former Soviet-bloc countries with lower labor costs, producing brands such as Bohemia and W. Hoffmann (by Bechstein) in the Czech Republic, and Vogel (by Schimmel) in Poland. Today, there is enough commonality in business practices, laws, and attitudes toward quality among the countries of Europe that the distinction between Eastern and Western Europe carries little meaning—except for labor costs, where the savings can be great.

Globalization, Quality, and Value

The worldwide changes in the piano industry are making it more difficult to advise piano shoppers. For many years, the paradigm for piano quality has been an international pecking order: pianos from Russia, China, and Indonesia at the bottom; followed by Korea, Japan, and Eastern

Europe; and, finally, Western Europe at the top, with pianos from the U.S. scattered here and there, depending on the brand. This pecking order has never been foolproof, but it has served a generation of piano buyers well enough as a rule of thumb.

Now this order is being disturbed by globalization. High-end and low-end makers are, to some extent, adopting each other's methods and narrowing the differences between them. On the one hand, some Western European and American makers of high-end pianos are partially computerizing the manufacture of their "hand-built" pianos, quietly sourcing parts and subassemblies from

China, and developing less expensive product lines in Eastern Europe and Asia. On the other hand, some Korean and Chinese makers are importing parts and technology from Germany, Japan, and the U.S., producing pianos that sometimes rival the performance of more expensive pianos from

the West. Global alliances are bringing new products to market that are more hybridized than anything we've seen before. Although the old pecking order still has some validity, the number of exceptions is increasing, causing temporary confusion in the marketplace until a new order emerges.

At the same time that the range of quality differences is narrowing, the range of prices is widening, bringing into greater prominence issues of "value." Eastern European brands have emerged as "value" alternatives to Western European brands, the latter becoming frightfully expensive due to high labor costs and the rapid appreciation of the euro against the dollar. Some of the better pianos from China, Korea, and

The worldwide changes in the piano industry are making it more difficult to advise piano shoppers.

Indonesia have become value alternatives to Japanese pianos. Brands that don't scream "value" are being squeezed out of the market.

As mentioned above, one of the consequences of globalization is that parts and materials formerly available only to high-end makers are now for sale to any company, anywhere, that's willing to pay for them. Thus, you'll see a number of Asian firms marketing their pianos with a list of well-regarded brand-name components from Germany and North America, such as Renner, Röslau, Mapes, and Bolduc. The question then naturally arises: Given that high-end pianos are so expensive, and that today one can buy for so little a Chinese-made piano with German design, German parts, and perhaps even a German name, is it still worth buying a performance-grade piano made in the West? Are there any differences worth paying for?

There's no question that high-end components, such as Renner hammers and Bolduc soundboards, add to the quality and value of consumer-grade pianos in which they're used. But in terms of quality, components such as these are only the tip of the iceberg. Although the difference between performance- and consumer-grade pianos has narrowed, in many ways the two types of manufacturers still live in different worlds. Differences are manifested in such things as the selection, drying, and use of wood; final regulation and voicing; and attention to technical and cosmetic details.

Makers of performance-grade pianos use higher grades of wood, selected for finer grain, more even color, or greater hardness, strength, and/or acoustical properties, as the use requires. Wood is seasoned more carefully and for longer periods of time, resulting in greater dimensional stability and a longer-lasting product. Veneers are more carefully

matched, and finishes polished to a greater smoothness. Action assemblies purchased from suppliers may be taken apart and put back together to more exacting tolerances than originally supplied. The workspace is set up to allow workers more time to complete their tasks and a greater opportunity to catch and correct errors. Much more time is spent on final regulation and voicing, with an instrument not leaving the factory, in some cases, until a musician has had an opportunity to play it and be satisfied. Of course, the degree to which these manifestations of quality, and many others not mentioned, are present will vary by brand and circumstance, but underlying them all is this philosophical difference: with performance-grade pianos, the driving force behind decision-making tends to be the quality of the product; with consumer-grade pianos, cost is a greater factor.

A MAP OF THE MARKET FOR NEW PIANOS

The chart and commentary that follow are intended to provide the newcomer to the piano market with a simple summary of how the brands compare with one another in overall quality and recommendability, taking into account each brand's features, performance, and track record.

Any such rating system is obviously not scientific but subjective, the product of my contacts with dozens of piano technicians, dealers, and other industry personnel, as well as my more than thirty years of involvement with the piano industry. My sense is that most knowledgeable people in the industry would agree in broad terms with this comparison, though many will disagree with me—and with each other—about the details.

The key to proper use of this chart is not to cling to it too tightly but to understand that, given its subjectivity

PERFORMANCE-GRADE PIANOS	
1	
Highest Quality Performance Pianos	
Verticals:	\$17,000–\$42,000
Grands 5' to 7':	\$52,000–\$97,000
Blüthner Bösendorfer C. Bechstein Fazioli Steingraeber & Söhne Steinway & Sons (Hamburg)	
2	
High Quality Performance Pianos	
Verticals	\$13,000–\$27,000
Grands 5' to 7':	\$32,000–\$78,000
August Förster Bechstein (Academy) Estonia Feurich Grotrian Haessler Mason & Hamlin Sauter Schimmel (Konzert) Seiler Shigeru Kawai Steinway & Sons (New York)	
3	
Good Quality Performance Pianos	
Verticals:	\$8,000–\$20,000
Grands 5' to 7':	\$25,000–\$58,000
Bohemia Charles R. Walter Kemble Petrof Schimmel (Classic) Schulze Pollmann W. Hoffmann (Tradition) Wilh. Steinberg (IQ) Vogel	

and simplicity, it should be used only as a learning tool. In addition, use common sense when comparing one brand with another. Compare verticals with verticals and grands with grands, and compare only similar sizes, or models whose selling prices

CONSUMER-GRADE PIANOS				
	<i>Chinese</i>	<i>Samick</i>	<i>Young Chang</i>	<i>Yamaha/Kawai</i>
4 Upper Level Verticals: \$3,700–\$13,000 Grands 5' to 7': \$12,000–\$36,000		J.P. Pramberger Platinum Wm. Knabe	Albert Weber Young Chang Platinum	Boston (Japan) Kawai RX grands Kawai verticals (Japan) Yamaha C grands Yamaha verticals (Japan)
	Brodmann grands (PE) Perzina verticals			Kawai GE grands Kawai verticals (Indonesia) Yamaha GC grands Yamaha verticals (China)
5 Mid-Range Verticals: \$3,300–\$8,500 Grands 5' to 7': \$7,500–\$30,000	Brodmann verticals (PE) Hailun May Berlin Palatino Ritmüller (new models) Wendl & Lung	Kohler & Campbell Millennium Pramberger Signature Sohmer & Co. grands Story & Clark Signature	Essex (Steinway/ Y.C. Korea) Weber Sovereign Young Chang Professional Artist	Kawai GM grands Yamaha GB grands
	Carl Ebel Gerh. Steinberg Heintzman Perzina grands			Cable-Nelson (Yamaha)
	Essex (Steinway/Pearl River) Everett grands Hallet, Davis & Co. grands			Essex (Steinway/Y.C. China)
6 Entry Level Verticals: \$2,800–\$6,000 Grands 5' to 7': \$7,000–\$15,000	Cristofori Henry F. Miller Pearl River Ritmüller (old models)	Kohler & Campbell New Yorker Pramberger Legacy Samick Story & Clark Heritage	Weber Legend Young Chang Traditional/Gold	
	Everett verticals Falcone Geo. Steck Gulbrandsen Hallet, Davis & Co. verticals Hardman, Peck & Co. Hobart M. Cable Suzuki Wyman	<p>To better understand this chart, please read the accompanying commentary.</p>		

fall within the same range. Note that, for the sake of simplicity, there may be quality differences within a single product line that are not shown here; also, a few brands were omitted due solely to lack of sufficient information about them.

A generalization useful to understanding the piano market is that pianos can be divided into two types: performance and consumer. Performance-grade pianos are built to a single high standard, and the price charged is whatever it takes to build such a

piano and bring it to market. Most performance-grade pianos are made in Europe or the United States. Consumer-grade pianos are built to be sold at a particular price, and adjustments to (i.e., compromises in) materials, workmanship, and

method and location of manufacture are made to meet that price. Most of these instruments are made in Asia. Both grades of piano are necessary to meet the needs of the wide variety of consumers. The chart for each grade is divided into three levels of quality; for consumer-grade pianos, each of these levels is further broken down into two or more subgroups. **Within each group or subgroup, the brands are listed in alphabetical order. No judgment of these brands' relative quality should be inferred from this order.**

Within each grade of piano, the distinctions between one group or subgroup and the next can be quite subtle, so don't get hung up on small differences. Furthermore, the preparation of the piano by the dealer can be far more important to the quality of the product you receive than some of the distinctions listed in the chart.

Prices shown for each group are the approximate lowest and highest typical selling prices of new pianos in the least expensive style and finish.

Performance-Grade Pianos

Group 1: Highest Quality

Group 1 pianos, and most of those in "Group 2: High Quality," are for those buyers who want the best and can afford it. The companies that make them use the very best materials, and their manufacturing processes emphasize much hand labor and refinement of details. These companies' painstaking execution of advanced designs puts considerations of quality far ahead of cost and volume of production. These instruments are suitable for the most advanced and demanding professional and artistic uses.

It was easier to arrive at a consensus about Group 1 brands than about any other group in this rating system. So celebrated are the brands in this group that dealers eagerly nominated even their competitors for the list. These pianos have everything, and the attention to detail paid in their manufacture can only be called fanatical. (Note that pianos made by Steinway &

Sons/Hamburg are not routinely available in North America; I include the brand here for informational purposes only.)

Group 2: High Quality

The pianos in Group 2 are also fabulous, but are in second place here either because their workmanship is not quite as refined as the first group, or because their musical designs are considered slightly less desirable, or perhaps because their names have not yet earned as much prestige value as those in Group 1. However, preferences among performance-grade pianos are greatly dependent on musical taste, and most of the brands in Group 2 have their devoted followings.

Most knowledgeable observers of the piano business would consider the list of brands in Group 2 to span quite a range of quality within the rarefied air of high-end pianos, and would insist that Group 2 be divided into two or more subgroups. The problem is that I found an utter lack of agreement among my many



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contacts as to which brands each subgroup should contain. Furthermore, the relative ranking of these brands is one of the most hotly debated topics among piano aficionados. Rather than arbitrarily impose my own preferences, I have chosen to leave the group undivided. Since this chart is primarily intended for newcomers to the piano market, any further division of this group would be academic.

Group 3: Good Quality

The brands in Group 3, though very good, are considered to have considerably less finesse or renown than those in Groups 1 and 2. Some are lesser product lines of the brands listed above. However, most of these models are also considerably less expensive than the ones above, and may be a better value for the money where the highest quality is not needed. Again, for the purpose of

simplicity, this group represents a somewhat wide range of qualities.

Consumer-Grade Pianos

The chart for consumer-grade pianos is organized differently from that for performance-grade pianos. The Korean-based companies Samick and Young Chang each has its own column listing all the brand names each makes for the U.S. market, including brands made under contract for other distributors; the Japanese-based companies Yamaha and Kawai share a column for their brands, including those made under contract; and there is a column for all brands made in China not already included in the other columns.

Within the Samick, Young Chang, and Yamaha/Kawai columns, the various brand names or model groupings are organized approximately as the respective companies

themselves position them in the marketplace by price and features. Some small adjustments have been made for subjective reasons. The brands within the Chinese column are organized by approximate overall recommendability, which also tends to fall along lines of price and features, though not uniformly so.

The tricky part of organizing this chart was figuring out how to align each column with the others to indicate the relative recommendability of the brands. As you can see, the brands and models in the Yamaha/Kawai column are concentrated toward the top of the chart, whereas those in the Chinese column are skewed slightly downward. This reflects, in large part, the differences in these brands' track records for durability, reliability, and warranty service. It must be noted that many dealers and others compare pianos only on the basis of their musical performance qualities when new, but a true comparison must also include their track records for these other factors. How *much* each factor is to be valued is a highly subjective matter, thus reasonable people will disagree as to how these columns should be aligned.

As can be expected, the upper-level consumer grade pianos generally have premium components and better performance and quality control than the lower-level instruments. The entry-level models are basic, no-frills pianos suitable for beginners and casual users, but which a conscientious student may outgrow in a few years. The mid-range pianos usually have better design, performance, quality control, track record, and/or components than the entry-level ones, but not as good as the upper-level ones. As piano quality in general improves, the distinction between levels becomes more subtle and difficult to discern. ■■■



(This article is adapted from Chapter 5, “Buying a Used Piano,” of *The Piano Book*, Fourth Edition, by Larry Fine. Steve Brady updated the depreciation schedule and used-piano pricing information. Before reading this article, be sure to read “*Piano Buying Basics*”—especially the section “New or Used?”—elsewhere in this publication.)

WHAT TO BUY: A Historical Overview

1700–1880

The piano was invented about 1700 by Bartolomeo Cristofori, a harpsichord maker in Padua, Italy. Cristofori replaced the plucking-quill action of the harpsichord, which can pluck only with unvarying force and hence unvarying volume of sound, with a newly designed striking-hammer action, whose force could be precisely controlled by the player. Thus was born the *gravicembalo col piano e forte* (keyboard instrument with soft and loud). This name was later shortened to *pianoforte*, then *fortepiano*, and finally just *piano*. In the 1700s the new instrument, made mostly by craftsmen in their shops, spread quietly through upper-class Europe. A number of different forms of piano action and structure were invented, such as the Viennese action, the English action, the square piano, and so on. Replicas of early



Cristofori Piano, circa 1720

fortepianos are popular among certain musicians who prefer to play the music of that period on the original instruments for which that music was written.

In the 1800s the piano spread more quickly through the middle classes, and across the ocean to North America. Riding along with the Industrial Revolution, piano-making evolved from a craft into an industry. Many important changes took place during the 19th century: The upright piano was invented; the modern grand piano action was invented, incorporating the best aspects of the previous rival actions; the cast-iron plate was invented, vastly strengthening the structure and allowing the strings to be stretched at a higher tension, thus increasing the power and volume of sound; the range of the instrument was extended from about five octaves to the present seven-plus octaves; and, toward the end of the century, the square piano died out, leaving just grands of various sizes and the full-size upright. By 1880, most of these changes were in place; the pianos made today are not very different from those of a hundred or more years ago.

In your search for a piano, you're unlikely to run across instruments made before 1880, with two exceptions. The square piano, or square grand, as it is sometimes called, looks like a rectangular box on legs (see illustration), and was very

popular as a home piano during the 19th century. Its ornate Victorian case makes very pretty furniture—but it also makes a terrible musical instrument for 21st-century playing and practicing. Tuning, servicing, and repair are difficult and expensive, very few piano technicians know how to do it, and parts are hard to come by. Even at their best, these instruments are unsuitable to practice on, even for beginners.

Another piano to avoid is a type of upright made primarily in Europe from the middle to the end of the 19th century. The dampers on these piano are positioned *above* the hammers and actuated by wires in *front* of the action—the reverse of a modern-day upright. This over-damper system has been nicknamed the “birdcage action” because the damper wires form an enclosure that resembles a bird cage. Besides being very difficult to tune and service through the “bird cage,” these pianos are usually so worn out that they won't hold a tuning longer than about ten seconds, and their actions work erratically at best. Many of these pianos were cheaply made to begin with, but they often have ornate cabinets and fancy features,



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such as candlestick holders, that make them attractive to antique collectors.

Although most pianos you'll come across made prior to 1880 will have little practical or financial value, the few that have historical value are best left to specialists and collectors who can properly conserve them.

1880–1900

The years from 1880 to about 1900 were a transition period, as some old styles were slow to fade. But some pianos from this period may be suitable for you. A piano with only 85 instead of 88 notes may be perfectly satisfactory if you don't anticipate ever needing the highest three notes. The resale value of such a piano may be slightly lower than its modern equivalent, but so should be the price you pay for it. A piano with an old-style cast-iron plate that, while extending the full length of the piano, leaves the pinblock exposed to view is, for all practical purposes, just as structurally sound as one in which the plate covers the pinblock. Avoid, however, the so-called "three-quarter-plate" piano, in which the plate ends just short of the pinblock. These pianos have a high rate of structural failure. Pianos with actions that are only very slight

variations on modern actions are fine as long as the parts are not obsolete and absolutely unobtainable.

Most pianos this old will need a considerable amount of repair and restoration to be fully usable, so the best candidates from this period will be those instruments that justify the expense involved, such as Steinway, Mason & Hamlin, Bechstein, and Blüthner grands, or, in rare instances, a more ordinary brand that has been exceptionally well preserved. With occasional exceptions, the vast majority of uprights and cheaper grands that survive from this period are not worth repairing, unless for historical or sentimental reasons.

1900–1930

The period from about 1900 to 1930 was the heyday of piano manufacturing in America. The piano held an important place in the national economy and as a symbol of culture and social status. Hundreds of small firms turned out millions of pianos during this time; in fact, far more pianos were made annually then than are made today. If you're shopping for a used full-size upright or a grand, some of the pianos you'll see will probably be from this period. Smaller pianos weren't introduced until later. Although some well-preserved instruments from this period may be usable as is, most will need rebuilding, or at least reconditioning.

Those in the market for a used piano often ask for recommendations of specific brands from this period. This is a problem, because the present condition of the piano, the kind of use you'll be giving it, and the cost of the piano and repairs are far more important factors than the brand when considering the purchase of an old piano. Even a piano of the best brand, if poorly maintained or badly repaired, can be an unwise purchase.

Some of the well-regarded piano brand names of the 1900–1930 period, in alphabetical order.

Apollo	Jewett
Baldwin	Kimball
Bechstein	Wm. Knabe
Blüthner	Krakauer
Bösendorfer	Lester
A.B. Chase	Mason & Hamlin
Chickering	McPhail
Emerson	Henry F. Miller
Everett	Packard
Haines Bros.	Sohmer
Hallet & Davis	Steinert
Hamilton	Steinway & Sons
Heintzman	Chas. Stieff
Hume	Vose & Sons
Ibach	Weber
Ivers & Pond	Wing

Time and wear are great levelers, and a piano of only average quality that has not been used much may be a much better buy. Nevertheless, since that answer never satisfies anyone, I offer a list (see box) of some of the brand names of the period that were most highly regarded. Please note that this list, which is by no means

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GRAY-MARKET PIANOS

If you're looking for a piano made within the last few decades, there is usually a plentiful supply of used Yamaha and Kawai pianos originally made for the Japanese market. However, there has been some controversy about them. Sometimes called "gray-market" pianos, these instruments were originally sold to families and schools in Japan, and some years later were discarded in favor of new pianos. There being little market for these used pianos in Japan—the Japanese are said to have a cultural bias against buying any used goods—enterprising businesspeople buy them up, restore them to varying degrees, and export them to the U.S. and other countries, where they are sold by dealers of used pianos at a fraction of the price of a new Yamaha or Kawai. Used Korean pianos are available under similar circumstances. (Note: The term "gray market" is used somewhat erroneously to describe these pianos. They are used instruments, not new, and there is nothing illegal about buying and selling them.)

Yamaha has taken a public stand warning against the purchase of a used Yamaha piano made for the Japanese market. When Yamaha first began exporting pianos to the United States, the company found that some pianos sent to areas of the U.S. with very dry indoor climates, such as parts of the desert Southwest and places that were bitterly cold in the winter, would develop problems in a short period of time: tuning pins would become loose, soundboards and bridges would crack, and glue joints would come apart. To protect against this happening, Yamaha began to season the wood for destination: a low moisture content for pianos bound for the U.S., which has the greatest extremes of dryness; a higher moisture content for Europe; and the highest moisture content for Japan, which is relatively humid. The gray-market pianos, Yamaha says, having been seasoned for the relatively humid Japanese cli-

mate, will not stand up to our dryness. The company claims to have received many calls from dissatisfied owners of these pianos, but cannot help them because the warranty, in addition to having expired, is effective only in the country in which the piano was originally sold when new.

My own research has led me to believe that while there is some basis for Yamaha's concerns, their warnings are exaggerated. There probably is a little greater chance, statistically, that these pianos will develop problems in conditions of extreme dryness than will Yamahas seasoned for and sold in the U.S. However, thousands of gray-market pianos have been sold by hundreds of dealers throughout the country, in all types of climates, for many years, and I haven't found evidence of anything close to an epidemic of problems with them. In mild and moderate climates, reported problems are rare. There are, however, some precautions that should be taken.

These pianos are available to dealers in a wide variety of ages and conditions. The better dealers will sell only those in good condition made since about the mid-1980s. In some cases, the dealers or their suppliers will recondition or partially rebuild the pianos before offering them for sale. Make sure to get a warranty that runs for at least five years, as any problems will usually show up within that period if they are going to show up at all. Finally, be sure to use some kind of humidity-control system in situations of unusual dryness. Remember that air-conditioning, as well as heating, can cause indoor dryness.

It's not always possible to determine visually whether a particular instrument was made for the U.S. or the Japanese market, as some original differences may have been altered by the supplier. The dealer may know, and Yamaha has a utility on its website (www.yamaha.com/pianoserials/index.asp) that will look up the origin of a particular Yamaha piano by serial number.

complete—or universally agreed on—applies only to pianos made before about 1930, since in many cases the same names were later applied to entirely different, usually lower, quality standards.

During this period, a large percentage of the pianos made were outfitted with pneumatically driven player-piano systems. When these mechanisms eventually fell into disrepair, they were often removed. Although there is still a small group of technicians and hobbyists dedicated to restoring these fascinating relics of the past, in most cases it is not economically practical to do so except for historical or sentimental reasons.

1930–1960

The rise of radio and talking pictures in the 1920s competed with pianos for the public's attention and weakened the piano industry, and the Great Depression decimated it. During the Depression, many piano makers, both good and bad, went bankrupt, and their names were bought up by the surviving companies. Sometimes the defunct company's designs continued to be used, but often only the name lived on. Still, piano making in the 1930s, though reduced in quantity from earlier years, was in most cases of a similar quality.

To revive the depressed piano market in the mid-1930s, piano makers came up with a new idea: the small piano. Despite the fact that small pianos, both vertical and grand, are musically inferior to larger ones, the public decided that spinets, consoles, and small grands were preferable because they looked better in the smaller homes and apartments of the day. There has always been a furniture aspect to the piano, but the degree to which piano makers catered to that aspect from the mid-'30s onward marked a revolution in piano marketing.

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During World War II, many piano factories were commandeered to make airplane wings and other wartime products, and what piano making there was fell somewhat in quality because of a lack of good raw materials and skilled labor. Things changed for the better in the post-war period, and you’ll sometimes find used pianos from this period, still in reasonably good condition or needing some reconditioning, from such brands as Steinway, Baldwin, Mason & Hamlin, Sohmer, Everett, Knabe, and Wurlitzer.

1960–Present

In the 1960s, the Japanese began exporting pianos to the U.S. in large numbers. Although at first they had some difficulty building pianos to the demands of our climate, by the mid- to late-’60s their quality was so high and their prices so low that they threatened to put all U.S. makers out of business. In response, most of the mid-priced American makers cheapened their product to compete. As a result, the 20 years from about 1965 to 1985 are considered, from a quality standpoint, to be a low point in U.S. piano manufacturing. In any case, the Americans were unable to compete. The international takeover of the U.S. piano market accelerated in the 1980s as the Koreans began to export here, and by 1985 all but a few U.S. piano makers had gone out of business. As in an earlier period, some of their brand names were purchased and later used by others.

Please see the article “**The New-Piano Market Today**” for more information on the post-1960 period.

A used piano made within the past few decades can often be a very good deal, as these instruments may still show very few signs of age and wear, but with a price far below that of a new piano. The most recently made used pianos may even come with a warranty that is still in effect.

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Also, the influx of new, low-priced, Chinese- and Indonesian-made pianos has driven down the price of used pianos, in some cases rather substantially, as the imports offer the opportunity to buy a new piano for a price only a little higher than a decent used one previously commanded. If you're considering a piano from this period, you may wish to read applicable articles in this publication about new pianos, as well as current and past editions of *The Piano Book*. See also the accompanying article about so-called gray-market pianos.

Though in each decade both good and bad pianos have been produced, and each piano must be judged on its own merits, this brief historical overview may give you some idea of what to expect to see as you shop for a used piano. You can determine the age of a piano by finding its serial number (*The Piano Book* tells how) and looking it up in the *Pierce Piano Atlas* (www.piercepianoatlas.com), or perhaps by asking a piano dealer or technician to look it up for you.


How to Find a Used Piano

Finding a used piano essentially involves networking, a concept very much in vogue these days. Some networking can be done by computer, and some with old-fashioned phone calls and shoe leather. Here are some of your options—you may be able to think of others.

- **Contact piano technicians, rebuilders, and used-piano dealers**

People who service pianos often have customers who want to sell their instruments. Some technicians also restore pianos for sale in their shops. Contacting these technicians or visiting their shops is a good way to acquaint yourself with local market conditions, to better understand what's involved in piano restoration,

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and to see an interesting slice of life in your community you might not otherwise encounter. If you decide to buy from a technician, you may pay more than you would a private party, but you'll have the peace of mind of knowing that the piano has been checked over, repaired, and comes with a warranty. Even though you trust the seller, it's a good idea to hire an independent technician to inspect the piano before purchase, just as you would if the piano were being sold by a private party, because even the best technicians can

differ in their professional abilities and opinions.

- **Visit dealers of new pianos**

New-piano dealers take used pianos in trade for new ones all the time, and need to dispose of them to recoup the trade-in allowance they gave on the new piano. Although many of the trade-ins will be older pianos, it's quite common for a customer to trade in a piano purchased only a few years earlier for a bigger or better model, leaving a nearly new piano for you to buy at a substantial

discount on its price when new. Again, you may pay more than you would from a private party—usually 20 to 30 percent more—but it may be difficult to find something like this from a private party, and the dealer will likely also give some sort of warranty. Some of the best deals I've seen have been acquired this way. If you're also considering the option of buying a new piano, then you'll be able to explore both options with a single visit. On the other hand, sometimes dealers advertise used pianos just to get customers into the store, where they can be sold on a new piano. The used piano advertised may be overpriced, or may no longer be available. When you have a used piano inspected, make sure the technician you hire owes no favors to the dealer who's selling it.

■ *Shopping via the Internet*

The best way to use the Internet to shop for a used piano is to look for

sellers, both commercial and non-commercial, within driving distance of your home. That way, you can more easily try out the piano, develop a face-to-face relationship with the seller, and get a better sense of whether or not you want to do business with them. Craigslist (www.craigslist.org), though not a piano-specific site, seems to have become the preferred classified-ad site for this purpose, as it's both free and is organized by city. If you travel frequently, you should check out sellers in other cities, too—easy to do on Craigslist. Other popular piano classified-ad sites include www.pianoworld.com (which also has extensive forums for exchanging information and getting answers to your questions), www.pianomart.com (smartly organized for easy searching), and www.pianobroker.com. These sites either charge a monthly fee to list or a small commission upon sale, but are free to buyers.

You'll also find pianos for sale

on the Internet auction site eBay. Search on a variety of keywords, as each keyword will bring up a different group of pianos for sale. This can be frustrating, as either too broad or too specific a search term may yield unsatisfactory results. The bidding process generally provides a window of time during which you can contact the seller for more information, see the piano, and have it inspected before placing a bid. This is definitely not a good way to buy a piano unless you have the opportunity to first try out the piano and have it inspected. On both eBay and the classified-ad sites mentioned above, many listings that appear to be non-commercial will actually turn out to have been placed by commercial sellers, who may have many more pianos for sale than the one in the ad you answered.

The website of the Piano Technicians Guild (www.ptg.org) has a listing of dealer websites and other resources that may be useful in locating used or restored pianos. If your situation is such that finding a local source of used pianos is unlikely, one reliable source that ships nationwide is Rick Jones Pianos in Beltsville, Maryland (www.rickjonespianos.com).

If you're thinking of making a long-distance purchase, the precautions mentioned in the section "[Shopping Long-Distance via the Internet](#)," in the article "Piano Buying Basics," bear repeating: First, take into account the cost of long-distance shipping and consider whether it's really worth it. If buying from a commercial source, find out as much as you can about the dealer. Get references. If you haven't actually seen the piano, get pictures of it. Hire a technician in the seller's area to inspect the piano and ask the technician about a commercial seller's reputation. Make sure the dealer has experience in arranging long-distance moves, and

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uses a mover that specializes in pianos. Find out who will be responsible for tuning and adjusting the piano in your home, and for repairing any defects or dings in the finish. Get the details of any warranty, especially who is responsible for paying the return freight if the piano is defective. Find out how payment is to be made in a way that protects both parties.

■ *Non-Internet Techniques*

In this age of the Internet, it's important not to forget older, more conventional methods of networking that still work, such as placing and answering classified print ads in local newspapers and want-ad booklets; and posting and answering notices on bulletin boards anywhere people congregate, such as houses of worship, community centers, laundromats, etc. Other, more aggressive, techniques include contacting movers and storage warehouses to see if they have any pianos abandoned by their owners; attending auctions; contacting attorneys and others who handle the disposition of estates; and just plain old asking around among coworkers, friends, and acquaintances.

■ *Obtaining a Piano from a Friend or Relative*

It's nice when pianos remain in the family. I got my piano that way. But pianos purchased from friends and relatives or received as gifts are as likely as any others to have expensive problems you should know about. It's very hard to refuse a gift, and perhaps embarrassing to hire a piano technician to inspect it before you accept it, but for your own protection you should insist on doing so. Otherwise you may spend a lot of money to move a "gift" you could have done without.

Which of these routes to finding a used piano you end up following will



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depend on your situation and what you're looking for. If you have a lot of time and transportation is no problem, you may get the best deal by shopping around among private owners or in out-of-the-way places. If you're busy or without a car but have money to spend, it may be more convenient to shop among piano technicians, rebuilders, or dealers, who may be able to show you several pianos at the same time and spare you from worrying about future repair costs and problems. If you travel a lot to other cities or have few piano resources in your local area, the Internet can be a big help in locating an appropriate commercial or non-commercial source far away. (See the ads in this publication for movers that specialize in long-distance piano moving.) The best route also depends on where you live, as some communities may have a brisk trade in used pianos among private owners but few rebuilding shops, or vice versa, or have an abundance of old uprights but few grands.

Buying a Restored Piano

Three terms are often used in discussions of piano restoration work: *repair*, *reconditioning*, and *rebuilding*. There are no precise definitions of these terms, and any particular job may contain elements of more than one of them. It's therefore very important, when having restoration work done on your piano or when buying a piano on which such work has been done, to find out exactly what jobs have been, or will be, carried out. "This piano has been reconditioned" or "I'll rebuild this piano" are not sufficient answers. One technician's rebuilding may be another's reconditioning.

Repair jobs generally involve fixing isolated broken parts, such as a broken hammer, a missing string, or an improperly working pedal. That is, a repair does not necessarily involve upgrading the condition of the instrument as a whole, but addresses only specific broken or improperly adjusted parts.

Reconditioning always involves a general upgrading of the entire



GRAND PIANO REBUILDING CHECKLIST

The following is a list of the tasks that might comprise a fairly complete rebuilding of a grand piano. Any particular job may be either more or less extensive than shown here, depending on the needs and value of the instrument and other factors, but this list can serve as a guide. See also *The Piano Book* for information about specific rebuilding issues pertaining to Steinway and Mason & Hamlin pianos.

Notice that the restoration can be divided into three main parts: the soundboard or resonating unit, the action, and the cabinet. The *soundboard* (also known as the *strung back* or *belly*) includes the soundboard, ribs, bridges, strings, pinblock, tuning pins, plate, and the structural parts of the case; the *action* includes the keyframe and action frame, keys and keytops, hammers, dampers, trapwork, and all other moving action parts; the *cabinet* includes cosmetic repair and refinishing of the case and of the non-structural cabinet parts and hardware. Note that the damper parts that contact the strings are restored with the soundboard, whereas the damper underlever action is treated with the rest of the action.

There is very little overlap among the three types of work; each of the three parts could be performed alone or at different times, as technical conditions permit and/or financial considerations require. In a typical complete rebuilding job, restoration of the soundboard might comprise 45 percent of the cost, the action 30 percent, and the cabinet 25 percent, though these percentages will vary according to the particulars of the job.

Soundboard or resonating unit

- Replace or repair soundboard, refinish, install new soundboard

decal (if not replacing soundboard: shim soundboard cracks, reglue ribs as necessary, refinish, install new soundboard decal)

- Replace pinblock
- Replace bridges or bridge caps
- Replace or ream agraffes, restore capo-bar bearing surface
- Refinish plate, paint lettering, replace understring felts
- Replace strings and tuning pins, tune to pitch
- Replace damper felts, refinish damper heads, regulate dampers

Action

- Replace hammers, shanks, and flanges
- Replace or overhaul wippen/ repetition assemblies
- Replace backchecks
- Replace front-rail key bushings
- Replace balance-rail key bushings or key buttons
- Replace or clean keytops
- Replace key-end felts
- Clean keys
- Clean and refelt keyframe
- Replace let-off felts or buttons
- Clean and, if necessary, repair action frame
- Regulate action, voice
- Overhaul or replace damper underlever action and damper guide rail
- Overhaul pedal lyre and trapwork, regulate

Cabinet

- Repair music desk, legs, other cabinet parts, as needed
- Repair loose or missing veneer
- Strip and refinish exterior; refinish bench to match piano
- Buff and lacquer solid-brass hardware, replate plated hardware

piano, but with as little actual replacement of parts as possible. For instance, reconditioning an old upright might include resurfacing the hammer felt (instead of replacing the hammers) and twisting (instead

of replacing) the bass strings to improve their tone. However, definitions of *reconditioning* can vary widely: Many technicians would consider the replacement of hammers, tuning pins, and strings to be

part of a reconditioning job in which more extensive work is either not needed or not cost-effective; others would call such work a partial rebuild.

Rebuilding is the most complete of the three levels of restoration. Ideally, *rebuilding* means putting the piano into “like new” condition. In practice, however, it may involve much less, depending on the needs and value of the particular instrument, the amount of money available, and the scrupulousness of the rebuilder. Restringing the piano and replacing the pinblock in a grand, as well as repairing or replacing the soundboard, would typically be parts of a rebuilding job. In the action, rebuilding would include replacing the hammer heads, damper felts, and key bushings, and replacing or completely overhauling other sets of parts as well. Refinishing the piano case is also generally part of the rebuilding process. Because of the confusion over the definitions of these terms, sometimes the term *remanufacturing* is used to distinguish the most complete rebuilding job possible—including replacement of the soundboard—from a lesser “rebuilding.” However, there is no substitute for requesting from the technician an itemization of the work performed.

When considering buying a rebuilt piano, or having a piano rebuilt, particularly an expensive one, the rebuilder’s experience level should count heavily in your decision. The complete rebuilding of a piano requires many dissimilar skills. The skills required for installing a soundboard, for example, are very different from those required for installing a new set of hammers or for regulating the action. Mastering all of these skills can take a very long time. In a sense, you should be shopping for the rebuilder as much as for the piano.

Many rebuilders contract out portions of the job, particularly the



Gluing a new soundboard into the rim of a grand piano

refinishing of the piano's case, to others who have special expertise. Although this has always been so, more recently groups of technicians, each with his or her own business and shop, have been openly advertising their close, long-term collaboration with one another on rebuilding jobs. In a typical collaboration of this type, one person might rebuild the strung back or soundbox (soundboard, bridges, pinblock, strings, tuning pins, cast-iron plate); another would rebuild the action and do the final

musical finishing, such as regulating and voicing; and the third would re-finish the case. Collaboration of this kind is a positive development, as it means that each technician does only what he or she does best, resulting in a better job for the customer. But make sure you know with whom you are contracting or from whom you are buying, and which technician is responsible for making things right if problems arise.

It may occur to you that you could save a lot of money by buying an unrestored piano and having a technician completely restore it, rather than buying the completely restored piano from the technician. This is often true. But the results of a rebuilding job tend to be musically uncertain. That is, if you are particular in your taste for tone and touch, you may or may not care for how the instrument ultimately turns out. For that reason, especially if a lot of money is involved, you might be better off letting the technician make



A rebuilt grand piano action with new hammers is ready for regulating and voicing.

the extra profit in return for taking the risk.

“Vintage” . . . or New?

“Vintage” pianos are those made during the golden years of piano-making in the United States—roughly, from 1880 to World War II. More specifically, the term usually refers to the Steinway and Mason & Hamlin pianos made during that period, though it's occasionally



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applied to other great American makes as well. In the last few decades the demand for these pianos, and consequently their prices, has mushroomed due to a (until recently) strong economy, increased entrepreneurial activity on the part of rebuilders and piano brokers,

allegations by rebuilders and others that today's new pianos are not as well made as the older ones were, and the purchase of many older Steinways by Steinway & Sons itself for rebuilding in its factory.

What makes these vintage pianos so alluring? Many musicians and technicians believe that these instruments, when rebuilt, sound and play better than new pianos. However, no one knows for sure why this should be so, since most of the components in the piano are replaced during rebuilding. Some point to the fact that Steinway operated its own plate foundry until about World War II, afterward using a commercial plate foundry (which it now owns). Because this radical change in the manufacture of such an important component roughly corresponds with the end of the vintage era, and because the plate is one of the few original parts to survive the rebuilding process, some speculate that it holds the key to the difference. Others say it has to do with changes in the quality of the wood available to Steinway and other companies. Still others say it wasn't any single thing, but rather a combination of many fortuitous factors, including extremely skilled and talented craftsmen, that enabled these companies to make such special pianos during that period, but allegedly not afterward (though that doesn't explain why the rebuilt ones from that period should be better).

Steinway & Sons, for its part, disputes the entire idea that older Steinways are better, dismissing it as a romantic notion spread by purveyors of those pianos in their own financial interest. The company says it has done extensive testing of both plates and woods, and the idea that the older plates and woods were better has no scientific basis. It says it has also carefully inspected hundreds of older Steinways at its

factory rebuilding facility, which is the largest Steinway rebuilding facility in the world, and finds no evidence that the older pianos were built better than today's—in fact, it believes that just the opposite is true. Steinway acknowledges that some pianists may prefer the sound of specific older pianos for subjective artistic reasons, but says that those considering the purchase of a restored, older instrument should do so to save money, not to seek better quality.

For more discussion of this topic, and of specific technical issues applicable to the rebuilding of a Steinway or Mason & Hamlin, please see *The Piano Book*.

How Much Is It Worth?

Three methods are typically used by professional appraisers to appraise pianos and many other goods: fair market value, depreciation, and idealized value minus the cost of restoration.

Fair market value is determined by comparing the piano being appraised to recent actual selling prices of other pianos of like brand, model, age, and condition. In the chart "Prices of Used Pianos," I and my staff have attempted to approximate the fair market value of pianos of various types, ages, and conditions, though I stress that we do not have enough data to do more than make rough estimates.

Note that insurance appraisals are often for "replacement cost." This is the cost of a *new* piano of the same or comparable make and model, not the fair market value of the used one.

A *depreciation* schedule, an example of which is provided here, shows how much a used piano is worth as a percentage of the actual selling price of a new piano of comparable quality (or of the same brand and model, if still in production and of the same quality).

APPRECIATE OR DEPRECIATE?

Some piano manufacturers market their instruments as “investments” and tout their potential for appreciation in value. If that’s the case, then why a *depreciation* schedule? Do pianos appreciate or depreciate?

It depends on how you look at it. Imagine parking a sum of money in a savings account earning 2 percent interest at a time when inflation is at 3 percent. Each year, the balance in the account grows . . . and *loses* purchasing power. This is something like the situation with pianos. After a large initial drop in value during the first five to ten years (because, unless given an incentive to buy used, most people would prefer a new piano), used pianos lose value in comparison with similar new ones at about 1.5 to 2 percent per year. However, because the price of *everything* (including pianos) is rising in price at 3 or 3.5 percent per year (the rate of inflation), the value of your used piano will appear to *rise* by 1 to 2 percent per year (the difference between the depreciation and the inflation).

Why do we figure depreciation from a comparable new piano instead of figuring appreciation from the original

price of the used one? Theoretically, it could be done either way. But the price of a comparable new piano is easier to look up—one might have to do a lot of research to find out what grandma paid for her piano. And the price of the new piano embodies all the inflation that has occurred between the original purchase of the used piano and the present, avoiding the trouble of having to look up the change in the cost of living during that time. The case is even stronger for using this method with foreign-made pianos: Tying the value of a used piano to the cost of a comparable new one makes it unnecessary to calculate the changes in the currency exchange rate—and sometimes changes in the currency itself!—that have occurred since the used piano was new.

Figuring depreciation from a comparable new piano is not without its own problems, however. With so many piano brands of the past now defunct or made to entirely different standards (usually in China), the task of figuring out what constitutes a “comparable” new piano can sometimes be formidable, if not impossible.

Idealized value minus the cost of restoration is the difference between the cost of a rebuilt piano less the cost to restore the unrebuilt one to like-new condition. As an example, if a rebuilt piano of the same or comparable model costs \$15,000, and it would cost \$10,000 to restore your piano to like-new condition, then according to this method your unrebuilt piano is currently worth \$5,000.

These three methods of appraising will typically yield three very different values. Which you choose to use will depend to some extent on your reason for having the piano appraised (buying, selling, insuring, etc.). Professional appraisers will sometimes

use all three methods, then average them to obtain a final value.

When considering a used piano being sold by a private, non-commercial seller, keep in mind that many such sellers really have no firm idea of how much their piano is worth, and have made up something based on little more than a wish. Therefore, don’t let a high asking price keep you from making a more reasonable offer. Ask the seller how they arrived at their asking price. If you can back up your offer with your own technician’s appraisal (including a list of the things that need to be fixed), credible listings of similar pianos, or other evidence of the piano’s true value, you stand a

DEPRECIATION SCHEDULE			
Age in Years	Percent of New Value		
	Worse	Average	Better
1	75	80	83
2	72	77	80
3	69	74	77
5	63	68	71
10	52	57	60
15	43	48	51
20	36	41	44
25	29	34	37
Verticals only			
30	22	27	30
35–70	15	20	23
Grands only			
30–70	25	30	33
Steinways			
1	75	80	83
2	72	77	80
3	70	75	78
5	66	71	74
10	58	63	66
15	50	55	58
20	42	47	50
25	34	39	42
Verticals only			
30	28	33	36
35–70	25	30	33
Grands only			
30	31	36	39
50	30	35	38
70	28	33	36

good chance of getting the piano at or close to your price.

Depreciation Schedule for Pianos

There is no universally agreed-on depreciation schedule for pianos, but one such schedule is provided above. The percentages given represent what the unrestored, used piano is worth relative to the actual selling price today of a new piano comparable in quality to the used one in question. The values computed are meant to reflect what the piano would sell for between *private, non-commercial parties*. We suggest adding 20 to 30 percent to the computed

PRICES OF USED PIANOS (US\$)

	Private Seller			Dealer	
	Worse	Average	Better	Reconditioned	Rebuilt
Vertical, pre-1950, average brand	0–300	300–750	600–1,000	1,000–1,500	N/A
Vertical, pre-1950, better brand	150–500	400–1,000	700–1,500	1,200–2,000	N/A
Vertical, pre-1950, best brand	500–1,000	1,000–3,000	2,000–5,000	3,000–6,000	10,000–16,000
Vertical, 1950–1980, average brand	200–600	400–1,000	1,000–1,500	1,200–2,500	N/A
Vertical, 1950–1980, better brand	400–800	700–1,500	1,000–2,500	2,000–4,500	N/A
Vertical, 1950–1980, best brand	700–2,000	1,500–2,500	3,000–5,000	4,000–7,000	7,000–10,000
Vertical, 1980–	Use Depreciation Schedule				
Grand, pre-1950, average brand, 5'	0–500	700–1,500	1,000–2,500	1,500–3,500	N/A
Grand, pre-1950, average brand, 6'	500–1,200	1,500–2,000	2,000–3,000	3,500–4,500	N/A
Grand, pre-1950, average brand, 7'	800–1,500	1,500–3,500	3,000–5,000	4,000–7,000	8,000–10,000
Grand, pre-1950, better brand, 5'	500–1,000	2,000–3,000	2,500–4,000	5,000–8,000	N/A
Grand, pre-1950, better brand, 6'	1,000–2,500	2,500–4,000	4,000–7,000	7,000–10,000	12,000–18,000
Grand, pre-1950, better brand, 7'	1,800–3,500	3,500–7,000	6,000–10,000	8,000–15,000	18,000–30,000
Grand, pre-1950, best brand, 5'	3,000–6,000	6,000–9,000	8,000–15,000	15,000–20,000	15,000–25,000
Grand, pre-1950, best brand, 6'	5,000–8,000	7,000–15,000	12,000–20,000	15,000–28,000	28,000–50,000
Grand, pre-1950, best brand, 7'	7,000–10,000	12,000–18,000	20,000–35,000	20,000–40,000	35,000–65,000
Grand, 1950–1980, average brand, 5'	500–1,200	1,500–2,500	2,000–4,000	3,000–5,000	N/A
Grand, 1950–1980, average brand, 6'	800–2,000	2,000–3,000	3,000–5,000	3,500–7,000	N/A
Grand, 1950–1980, average brand, 7'	1,500–2,500	2,500–4,000	4,000–7,000	4,000–8,000	8,000–12,000
Grand, 1950–1980, better brand, 5'	800–2,000	2,000–4,000	2,500–5,000	5,000–9,000	N/A
Grand, 1950–1980, better brand, 6'	1,500–3,000	2,500–5,000	4,000–9,000	8,000–12,000	12,000–22,000
Grand, 1950–1980, better brand, 7'	3,000–6,000	5,000–10,000	8,000–15,000	10,000–20,000	15,000–30,000
Grand, 1950–1980, best brand, 5'	4,000–7,000	7,000–10,000	9,000–18,000	16,000–21,000	17,000–25,000
Grand, 1950–1980, best brand, 6'	6,000–10,000	8,000–15,000	12,000–20,000	20,000–28,000	28,000–50,000
Grand, 1950–1980, best brand, 7'	8,000–12,000	14,000–20,000	18,000–30,000	20,000–40,000	35,000–65,000
Grand, 1980–	Use Depreciation Schedule				

value when the piano is being sold by a dealer unrestored, but with a warranty. These figures are intended only as guidelines, reflecting our general observations of the market. “Worse,” “Average,” and “Better” refer to the condition of the used piano for its age. A separate chart is given for Steinway pianos. Other fine pianos, such as Mason & Hamlin, may command prices in between the regular and Steinway figures.

Prices of Used Pianos

The valuation of used pianos is difficult. Prices of used pianos vary wildly, depending on local economies, supply and demand, and the cosmetics and playing condition of the instrument at hand, including the amount and quality of any restoration work done. As if this weren’t enough, it’s

almost a certainty that no two piano technicians or piano salespeople would return exactly the same verdict on any given piano’s value. Art being what it is, beauty is in the eye and ear of the potential purchaser, and values are very much subjective.

These disclaimers aside, we’ve tried to assemble some used-piano values as general guidelines for shoppers. We asked a number of knowledgeable piano industry professionals to give their opinions of prices for used pianos in each of our categories, then reconciled their varied responses to produce a price range for each category. We also consulted the online service Pianomart.com, though the prices listed there are asking prices, not selling prices. The chart is organized by categories of vertical and grand piano broken down by age (pre-1950 and 1950–1980), quality (Average, Better,

Best), and condition (Worse, Average, Better, Reconditioned, and Rebuilt). For prices of pianos made since 1980, we suggest you use the depreciation schedule accompanying this article.

The price ranges given reflect the wide possibilities a buyer faces in the used-piano market. At the low end of each range is a price one might find in a poor economy or a “buyer’s market,” where supply exceeds demand. At the high end, the prices are consistent with both a better economy and a higher demand for the type of instrument indicated. In some categories, the prices we received from our sources varied all over the map, and we had to use a considerable amount of editorial discretion to produce price ranges that were not so broad as to be useless as guidelines, and to retain at least a modicum of internal consistency

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in the chart. For that reason, you should expect to find some markets or situations in which prices higher or lower than those given here are normal or appropriate.

The prices given here for pianos that are not reconditioned or rebuilt (those labeled Worse, Average, Better) are the price ranges you might expect to find when buying pianos from private owners. The Reconditioned and Rebuilt categories represent prices you might encounter when shopping for such pianos at piano stores or from piano technicians, with a warranty given. In some cases we have omitted the Rebuilt price because we would not expect rebuilding to be cost-effective for pianos of that general age and type. In every case, prices assume the least expensive style and finish; prices for pianos with fancier cabinets, exotic veneers, inlays, and so forth, could be much higher.

Quality

“Best brands” include Steinway, Mason & Hamlin, and the very best



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European makes, such as Bechstein, Blüthner, and Bösendorfer. “Better brands” include the well-regarded older names mentioned in the accompanying article for the pre-1930 period, such as Knabe and Chickering; and names such as Baldwin, Everett, Kawai, Sohmer, Yamaha, and others of similar quality for the 1950–1980 period. “Average brands” are pretty much everything else.

Condition

Worse, Average, and Better refer to the condition of the piano in comparison to the amount of wear and tear one would expect from the piano’s age. However, even Worse pianos should be playable and serviceable. Note that because many buyers are quite conscious of a piano’s appearance, pianos that

are in good shape musically but in poor shape cosmetically will often sell at a price more consistent with the Worse range than with a higher one. This offers an opportunity for the less furniture-conscious buyer to obtain a bargain.

For a discussion of the definitions of *reconditioned* and *rebuilt*, please see the section “**Buying a Restored Piano**” in this article. For the purposes of this chart, however, we have adopted the requirement that a piano has not been *rebuilt* unless its pinblock has been replaced, and that a piano that has been restrung, but without a new pinblock, is considered to have been *reconditioned*. Note that these definitions are not precise, and that both the quality and the quantity of the work can vary greatly, depending on the needs of the instrument and the capabilities of the restorer.


These variations should be taken into account when determining the piano's value.

Inspect, Inspect, Inspect

In closing, I'd like to remind you that your best protection against buyer's remorse is having the piano inspected by a piano technician prior to purchasing it, particularly if the piano is more than ten years old. Sometimes it will be sufficient to speak to the seller's technician about the piano, if he or she has serviced it regularly and has reason to believe that he or she will continue servicing it under your ownership. However, in most situations, you'll be better off hiring your own technician. You can find a list of Registered Piano Technicians in your area on the website of the Piano Technicians Guild, www.ptg.org.

More Information

If you're serious about buying a used piano, additional information in *The Piano Book* may be useful to you, including:

- How to remove the outer cabinet parts to look inside the piano
- How to do a preliminary inspection of a piano to rule out those that are not worth hiring a technician to inspect, including an extensive checklist of potential problem areas
- A discussion of issues that frequently come up in regard to the rebuilding of Steinway pianos
- A complete list of older Steinway models, from 1853 to the present
- How to locate the serial number of a piano
- A list of manufacturing dates and serial numbers for Steinway pianos 

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IS OLDER BETTER? Archeologists, antique dealers, and even aging writers will tell you so. And many pianists agree, especially when one finds a certain special instrument with which he or she can form the musical partnership of a lifetime. But even legendary wines can turn to vinegar. So when dealing with the acquisition—or restoration—of a vintage piano, it's important to get the advice of experts.

There are reasons to favor an older instrument over a new one, and one of the strongest is purely sentimental. "To the extent this was grandma's piano, there is a certain attraction," says Bill Youse, who heads Steinway & Sons' restoration center in Long Island City, New York. "We've had people come in and cry at seeing their restored pianos. One time we asked a technician to play something on it as the customer entered the room to see the results, and she nearly fainted. It turned out that the piece he was playing was the one her husband had last played on the instrument before he passed away. The coincidence was amazing. But the point is, when you bring a piano back to life, you get the family history, the love, the memories. You can't get that with a new instrument."

It's also rare to get the sound in new pianos that vintage instruments produce, say Sara and Irving Faust, of Faust Harrison Pianos in New York City, a dealership renowned for high-level restorations. "The old Steinways, produced in the late 1800s and early 1900s, have never been surpassed," says

Sara. "They have warmth, soul, what I would call a sort of 'three-dimensionality' and color in the sound that you can't find in a modern instrument. And each era seems to have its own special quality. Starting in the 1920s, the Steinway sound became

more extroverted. Steinways of the 1940s are both lush and bold. Most importantly, in the hands of a top piano restorer the special rich, mellow, colorful tones of the older instruments are retained. They may look, feel, and smell like new pianos, but they sound like wonderful old pianos.

"You have to have a very large sample to appreciate this fully," Faust continues. "I'm making these judgments based on working with thousands of pianos." The exact reasons why the old Steinways sound different from today's instruments remain a mystery; one theory attributes it to changes in the manufacture of the cast-iron plate that sits at the heart of the instrument.

At Cunningham Piano Co. in Philadelphia, founded in 1891, co-owner Rich Galassini agrees that there are differences among Steinway pianos made at different times. "The final product depends on choices made in materials, design, and the execution of these designs in manufacturing. Any change, intentional or unintentional, in any of these categories will result in a difference in performance.

"But I wouldn't single out just one brand," adds Galassini. "There are a number of beautifully made instruments that historically have had their own voice and, restored, have wonderful performance potential." Galassini would include in this list such venerable brands as Mason & Hamlin, Bösendorfer, Blüthner, and Bechstein, as well as the slightly



Mason & Hamlin poster, 1887

lesser-known Chickering and Knabe, among others. “There is a very wide palette of tone and touch available to a pianist who wishes to seek out an older instrument that speaks to him or her personally.”

Steinway’s Bill Youse has a somewhat different perspective. There may be differences in quality between older instruments and today’s, he says, but it’s difficult to render an opinion because, “by the time I get them, they are in demise.” More likely, the perceived differences have to do with changing aesthetics, he adds: “The tonal requirements today—the sounds people are looking for—are different than they were years ago. Today we juice the hammers to produce a brighter sound. We tune at a higher pitch. Sometimes it’s too harsh for my senses. I like pianos voiced in a mellow way. But the entire piano industry has developed that trend toward brightness.”

Perhaps because of these different outlooks, the three firms have different approaches to restoration. “We replace rather than repair,” reports Youse. “We retain original parts only in a museum-type restoration, as we did for the White House piano, and the ‘Peace Piano’—the one with gold stars all around that had been in Congress and that now resides at the Smithsonian Institution. When we worked on the ‘King of Sweden’ piano, which arrived with envoys and armed guards, we of course had to use the original types of glue and varnish. But in most cases, we believe that newer is better.

“There is a perception that the old craftsmen did it better,” Youse continues. “Yet the materials we use, and the ways we have of testing things, have gotten better. We replace hardware, to avoid sympathetic vibrations that develop as things wear. The modern action is an improvement over older ones.

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And our wood technologist tells me that after about 60 years the cellular structure of spruce breaks down, and the soundboard just won’t have the same resilience. The newer ones are superior.”

At Faust Harrison Pianos, standardizing parts is not always considered the right way to go. Indeed, their technicians often mix replacement parts—combining elements of Renner and Steinway, for example—to achieve the desired results. Rather than replacing items wholesale, they may design individual solutions for each area of the instrument being serviced, in order to accommodate the original dimensions and materials, or to maintain the look of an earlier design.

Cunningham, too, takes a more customized approach to restoration. “All manufacturers change the design of their pianos over time,” says Galassini, “in part to improve their

instruments, but also in an attempt to appeal to the fashionable tone of the time.” Because of this, rebuilders must decide if they wish to be faithful to the originally intended design, or if they wish to make the piano sound more modern. “For instance,” says Galassini, “a well-educated rebuilder, if he wanted to, could reproduce the tone and touch of the Mason & Hamlin that so moved Ravel.”

Of course, all of these companies employ expert workers. One particular Steinway restorer, brags Bill Youse, can make anything seem new again: he once repaired a mummy that had lost a leg in transit. Another, he claims, “can duplicate any painting you show him.” That comes in handy when the piano to be worked on is an “art case” instrument: one of those exquisitely designed models, often decorated with paintings or built with rare

woods, that emerged in the 19th century—a piano-building tradition recently resurrected at Steinway. These pianos, with their highly artistic cabinetry, can be extraordinarily attractive—and valuable.

That touches on a third reason to seek historic instruments: their monetary value. Older instruments may be of a rare vintage, or possess an unusual pedigree. In any case, as remnants of a more genteel age, when pianos held a prominent place in nearly every home, they nearly always carry an aura of romance.

In fact, good Victorian families set aside a formal area for piano entertaining, which was once the best way to demonstrate a flair for stylish living. The evidence can still be found in the preserved dwellings of important figures from the past, including Mark Twain, whose home

in Hartford, Connecticut, featured a Steinway & Sons baby grand used for recitals organized by his wife, Livy; and Louisa May Alcott, who, when not walking to Walden Pond for boat rides with Henry David Thoreau, played a Chickering square piano in her parlor. Emily Dickinson kept a Wilkinson piano in her Amherst house, and Edna St. Vincent Millay had two Steinways. Eugene O'Neill loved his player piano—a coin-operated instrument with stained-glass panels—and named it “Rosie.”

Surprisingly, the piano wasn't instantly popular. Though its official birth date is generally agreed to be 1700, in many ways the piano was still in its infancy at the end of the 18th century. In London, the instrument's public debut as a solo instrument didn't take place until 1768 (Johann Christian Bach had

the honor). Leading craftsmen in the decades that followed produced no more than 30 to 50 instruments a year. But a great wave was coming. By 1798, English piano maker James Shudi Broadwood could not keep up with demand. “Would to God we could make them like muffins!” he wrote to a wholesaler. Five decades later, the desire for pianos had exploded: England was suddenly the center of the piano world, with some 200 manufacturers. And, with increased production, large segments of the population could now afford to purchase one.

No wonder George Bernard Shaw wrote that, in the late 19th century, piano playing had become a “religion.” The instrument served every musical and social need, making it possible to learn and perform great works, strengthen family ties, and impress the neighbors.

Keyboards have enjoyed a long history as symbols of prosperity. The piano art case, in fact, had its origins in the 16th and 17th centuries, when harpsichords were adorned with paintings, often of Orpheus charming the animals or battles on horseback. Sometimes they were also inscribed with mottos: “I was once an ordinary tree,” read one, “although living I was silent; now, though dead, if I am well played I sound sweetly.”

The instruments then were intended primarily for the women of the household, and the piano boom was similarly helped along by young ladies of a certain social status who were taught that developing their musical skills would increase their chances of a good marriage. As late as 1847, critic Henri Blanchard, in France, reported that “Cultivating the piano is something that has become as essential, as necessary, to social harmony as the cultivation of the potato is to the existence of the people. . . .The piano provokes



This 1915 Steinway advertisement reflects the prevailing sentiment of the time—that developing her musical skills would increase a young woman's chance of a good marriage.

Source: NW Ayers Advertising Agency Records, Archives Center, National Museum of American History, Smithsonian Institution

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The attractiveness of the instrument as a piece of furniture was also important. The wood, ivory, and artistic detail of a fine instrument lent elegance to a home. And, as a center of attention, it cried out for special enhancements. England's Mrs. Jane Ellen Panton pointed out, in her authoritative *From Kitchen to Garret* (1888), a bestseller of the era, that it was a good idea to decorate one's piano with material "edged with an appropriate fringe," and to place a big palm in a brass pot into the bend

of the instrument, to give it "a finished look." Victorian prudishness also sometimes came into play, with suggestions that coverlets be put over the piano's legs for the sake of modesty.

Some piano makers even designed special models with the homeowner in mind. An "upright grand Piano-forte in the form of a bookcase" was patented by William Stodart in 1795 (there is evidence that Haydn visited Stodart's shop and approved of the device); and the early 19th century saw the introduction of a square piano in the form of a sewing table. Highly decorated upright pianos featured giant lyres, arabesques, and flutings; one extant sample includes a medallion bust of Beethoven.

It didn't take long for the piano to gain a foothold in the New World as well, where it reached beyond the

big cities into America's western territories. "Tis wonderful," wrote Ralph Waldo Emerson in *Civilization* (1870), "how soon a piano gets into a log-hut on the frontier." We can glimpse the results in diaries kept by American homesteaders. Living in the mining town of Aurora, Nevada in the 1860s, a Mrs. Rachel Haskell recorded that in the evening, after dinner, her husband would come into the sitting room and place himself near the piano as their daughter, Ella, accompanied the entire family in song. Rachel's daytime regime included instructing Ella at the piano, along with practicing the multiplication tables with her sons, making dinner, and visiting friends.

This trend caught the attention of W.W. Kimball, who settled in Chicago in 1857 and announced that he wanted to sell pianos "within the

reach of the farmer on his prairie, the miner in his cabin, the fisherman in his hut, the cultivated mechanic in his neat cottage in the thriving town.” He based his new business on the installment plan—as did D.H. Baldwin, a Cincinnati dealer who, in 1872, hired an army of sewing-machine salesmen to recruit new customers.

The piano in America continued to be seen as a tool to regulate the life of the tender sex, just as it had across the ocean. The critic of the *New York World*, A.C. Wheeler, laid out the argument in 1875: “[It] may be looked upon as furniture by dull observers or accepted as a fashion by shallow thinkers, but it is in reality the artificial nervous system, ingeniously made of steel and silver, which civilization in its poetic justice provides for our young women. Here it is, in this parlor with closed doors, that the daughter of our day comes stealthily and pours out the torrent of her emotions through her finger-ends, directs the forces of her youth and romanticism into the obedient metal and lets it say in its own

mystic way what she dare not confess or hope in articulate language.”

Through the early decades of the 20th century, pianos continued to be built—and to be played—in this cultural atmosphere of naïveté and old-world charm. We live in a very different world now: one filled with iPods, interactive games, and—for pouring out torrents of emotion—talk therapy. But the gracefulness and enchantment of that earlier time still imbue many of the instruments it produced.

Restoring those pianos to their full beauty can be a painstaking process, as one quickly discovers when touring the sprawling restoration facility of Faust Harrison Pianos in Dobbs Ferry, New York, where each aspect of piano rebuilding warrants its own room. There is a lot to consider. “Take the hammers,” explains Sara Faust; “they each have to hit the strings at the optimum point for sound production. Yet if they are placed optimally, you may not see a perfectly straight hammer line, but something that resembles a gentle roller coaster, particularly in

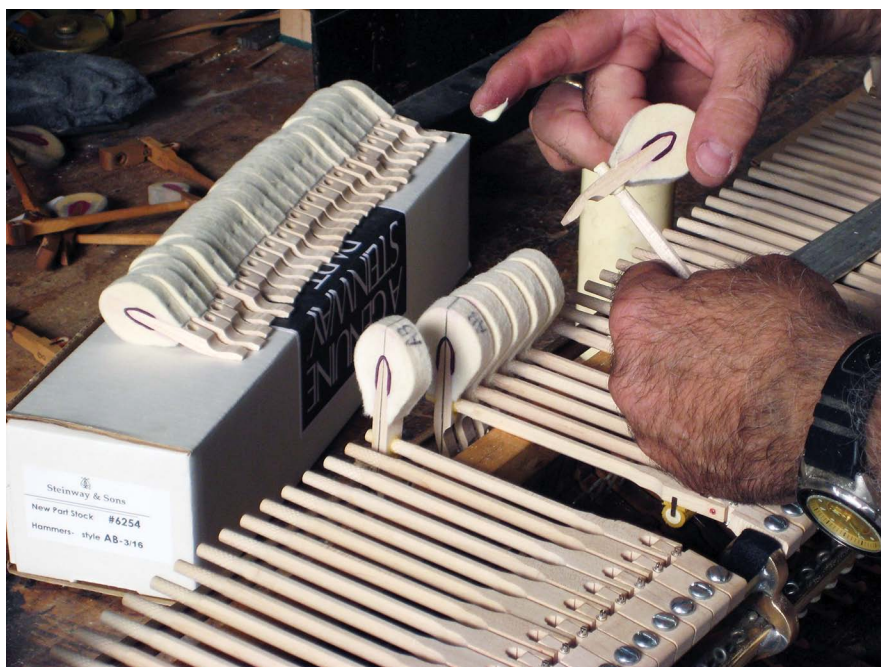
the third register. Sometimes technicians try to compensate for a weak sound by putting extra lacquer on the hammers, but the right answer is often not lacquer at all, but to make an adjustment to the strike point. Indeed, minimally lacquered Steinway hammers have a special beauty that should be preserved whenever possible. A new hammer may start out like a closed rosebud, but as it is played it hardens naturally from compression, and the sound opens up and blossoms.

“And new hammers have more wood than old ones,” she continues, “so we sometimes remove some wood, changing the mass and shape of the hammers, to clarify the sound. Why do we drive ourselves crazy in this way? Because when you have a well-crafted hammer, the piano can sound both more beautiful and more powerful at the same time.”

In the “rubbing room,” a series of sandings, using finer and finer materials, ensures a beautiful cabinet surface. But there are dangers here as well: in the wrong hands, important cabinet details in a vintage art-case instrument can be lost. A good restorer will bring them back.

It all has to be done with a light touch, inside and out. At A.C. Pianocraft, in New York City, owner Alexander Kostakis explains that “The instrument will tell me what to do. I have to keep everything in perspective. Each instrument has a personality, or ‘soul.’ We have restored all the American and European brands of yesteryear—Steinways, Mason & Hamblins, Bechsteins, Blüthners, Pleyels, Knabes, Chickering. Each one is different, and the experience has made us better mechanics, more versatile.

“For example, old pianos had a flat inner rim where the soundboard was attached. But sometimes, when restoring the piano, we’ve added a pitch to the rim to give the



A.C. Pianocraft, Inc.

Installing new hammers on a Steinway grand



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Replacing a pinblock in a grand piano

soundboard more resonance. As for replacing parts, you always have to remember that the perishable items within an instrument have a certain lifespan. But we also try to maintain the authentic character of the instrument, and sometimes choose to repair rather than replace.”

In a business driven mostly by a love of the instrument, piano restorers sometimes seem to work miracles. Even so, there are limits to what can be accomplished. “Some brands you’ll restore once, but never again,” says Kostakis—“every time you touch something, something

else breaks. But we’ve also had amazing successes. I advised a customer not to restore a family heirloom: a Kranich & Bach Louis XV model in walnut. It was a beautiful piece of furniture, but it looked like restoring the action would be impossible because no one makes the right parts anymore. But the customer was adamant about restoring the instrument, so we agreed to repair the action parts rather than replace them. Working on the piano, however, I realized that the old action parts, even repaired, would never be good enough, and might give trouble later on. It was a Herculean task, but in order to do the right thing for the piano and for the customer—and, frankly, to sleep well at night—I actually reproduced brand-new parts in the exact style of the old ones.”

Steinway, too, has seen its share of horror stories. “There was a church down in Georgia,” remembers Bill Youse; “they had a Model O that had been badly damaged by a fire,

and they wanted it restored. I asked for a photo. All that was left was the harp and a bunch of burnt strings sticking up. They were essentially asking us to build a piano around the old harp—an impossible task.”

Still, had the assignment been humanly possible, he would have tried. “I love my job,” he says. “I’m third-generation here at Steinway. My grandfather was a blind tuner back in the late ’40s. My father started here in 1955. I’ve been here 37 years. For me, this is an honor. My first bicycle was a beat-up model I had to restore. My first car was a beat-up old Chevy I had to restore. This was a natural progression. It’s what I was meant to do.”

Stuart Isacoff is on the faculty of the Purchase College Conservatory of Music (SUNY) and the author of *Temperament: How Music Became a Battleground for the Great Minds of Western Civilization* (Knopf/Vintage, 2003).

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PIANO BUYER
The Consumer Reference to Buying a Piano



Since the piano's invention by Bartolomeo Cristofori in 1700, its evolution has been driven by the desire to meet the changing musical needs of the times, by advances in technology, and by the business and marketing requirements of the piano manufacturers. High-end pianos exemplify this evolutionary process.

Early pianos were limited by the technology of the day to a lightweight structure, and a design that produced a tone—bright and intimate, but with short sustain and low volume—that evolved from the sound of the harpsichord. This complemented both the musical styles favored by the Classical period, especially chamber music, and the smaller, more intimate venues in which music was then customarily performed. As technology advanced, it became possible—using cast-iron plates, stronger strings, and higher-tension scale designs—to produce

more robust instruments capable of filling a large hall with sound. This suited the composer-virtuosos of the Romantic period, such as Liszt and Brahms, whose works for the piano demanded from the instrument greater power, and the ability to be heard above the larger orchestras of the day. However, this louder, more overtone-filled sound could also conflict with and overpower other chamber instruments and their performance settings.

The great American pianos, having come of age during the Romantic era, tend toward the Romantic tonal tradition. The great European piano makers, however, embedded in a culture steeped in centuries of musical tradition, have long had to satisfy the conflicting tonal styles of different ages, and this has resulted in a wide variety of instruments with different musical qualities. As the American market for European pianos grows,

the European companies are further having to reconcile remaining true to their own traditions with evolving to please the American ear. While all brands make full use of technological advances and are capable of satisfying diverse musical needs, some tend toward a more pristine tone, with plush but low-volume harmonics, perfect for chamber music or solo performances in small rooms; others are bright and powerful enough to hold their own above the largest symphony orchestras; and many are in between.

The good news is that the best way to find the right piano for you is to play as many as you can—a simply wonderful experience!

What follow are a story with a valuable perspective from a well-respected dealer of performance-quality instruments, and further observations about these extraordinary instruments by technicians who service them.

THE BEST PIANO: A STORY

by ORI BUKAI

"I'm tone deaf," declared the husband. "I can't tell the difference between one piano and another."

His wife nodded in agreement. "He is tone deaf. And while I can hear some differences, it's all so confusing. All we want is a piano that our kids can learn to play on. We don't need a *great* piano."

A short conversation ensued in which I learned, among other things, that this couple had three children, ranging in age from seven years to six months.

"Our daughter just turned seven," the wife said. "She's interested in piano lessons, but we're not sure how committed she'll be."

"You know kids," the husband shrugged. "She may want piano lessons now, but in a few months' time . . .?"

"You're right," I said. "Kids change their minds all the time. I started piano lessons at the age of six, and stopped only a few months later. But the piano stayed in our home, and at the age of 12 I was drawn back to it. I played a few tunes by ear, and after a while I started lessons again. But . . . would you like your youngest child to play the piano as well?"

They looked at each other. It seemed that the possibility of their six-month-old baby taking lessons sometime in the future was something they hadn't considered.

"This means that whatever instrument we choose, it will probably stay in our home for a very long time," the woman said to her husband. "Perhaps we should look at a greater range of instruments than just the few we had in mind . . .?"

"But still," he said, turning to me, "is there enough difference in the tone of the pianos to justify a greater investment, and a possible increase in our budget?"

Such conversations are not rare. Some people feel they won't be able to hear the differences between pianos, or that a high-end piano will be wasted on them. Others try to accommodate only what they perceive their needs to

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be at the time of purchase, rather than over the many years they may end up owning a piano.

Often, piano buyers form an idea of what they want and how much to spend, and consider only a few brands, without ever sufficiently researching the differences in manufacturers' philosophies and how these might affect the tone, touch, musicality, and price of the instrument. However, such information can help the consumer clarify his or her true needs and preferences. Many shopping for a piano all but ignore higher-end models, considering them beyond their needs or means. But for more than a few of these buyers, a better-quality piano may prove the better fit and value.

There are significant differences in manufacturing methods between performance-oriented instruments, which are often referred to as "hand-made," and mass-produced instruments, in which some musical qualities are sacrificed to meet a lower retail price.

Performance-oriented manufacturers, especially at the highest level, are looking to capture a wide range of tonal characteristics. Some of these qualities, such as sustain, tonal variation, and dynamic range, are universally accepted as helping the playing of pianists of all levels sound more musical. All makers of high-end pianos strive to make pianos that excel in these areas. Other tonal characteristics, however, such as tonal color—the specific harmonic structure of the tone—can reflect a particular manufacturer's philosophy of what the best piano should sound like, and are the elements that separate one high-end make from another. A piano maker's decision to emphasize certain musical qualities over others is manifested through differences in the instrument's design, in the instrument's resulting tone and touch, and in its appeal to a particular player or listener.

"Would you like to hear some higher-end instruments as well, just to compare?" I asked the couple.

"Yes, please," replied the woman.

And so we went on a tour of Piano Land, playing, listening to, and assessing the tone of a variety of instruments. "Ooohhh," said the wife in response to one particular make. "Aaahhh," sighed her husband, as the realization struck him: He actually *could* hear the differences between these pianos; not only that, he had some rather clear preferences.

"But which is the *best* piano?" he asked. There are quite a few instruments here, all so beautiful, but so different from each other. Which *is* the best?

This is a question customers ask me again and again when visiting our showroom—we represent most of the high-end makers, and side-by-side comparisons are always possible. And while, time after time, our customers do find the absolute "best," for each of those customers the "best" is represented by a different make, according to his or her preferences. The combination of musical qualities



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emphasized by one piano maker may speak to one customer while leaving another indifferent—who, in turn responds enthusiastically to an instrument made by another manufacturer that has left the first customer cold. Some people prefer a bold, outgoing, and powerful sound; others want a more delicate, clear, and melodic tone. Some like focused, defined, and pure tonal characteristics, while others look for instruments whose sound is more robust, deep, and dark.

At the top end of piano manufacturing, each instrument should have a high level of design, parts, materials, execution, workmanship, and attention to detail. However, it is personal preference—the buyer’s response to the various manufacturers’ interpretations of the “perfect sound”—that determines the answer to the question of “But which is the *best* piano?” The answer is different for every customer.

But which piano is the “best” is also a matter of other factors. Some

high-end instruments might be considered the “best” in one setting, but not quite the best in another. A piano that sounds its best in a large concert hall with hundreds of people may not necessarily be the right fit for the typical living room.

“The best instrument,” I replied to the couple, “is the one that you’ll most enjoy listening to as your children—and perhaps, before you know it, your grandchildren—play and develop their musical skills. The ‘best’ piano is the one you’ll be happy with over the many years it will live in your home, and that one day, when you have the time, perhaps may tempt you to take lessons yourself. The best piano is the one that will deliver to you and your family the joy of music, now and over the long run.” 

Ori Bukai owns and operates Allegro Pianos in Stamford, Connecticut, which specializes in the sale of new and restored high-end pianos. Visit his website at www.allegropianos.com.

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PIANO TECHNICIANS who eventually drift toward the high-end market are usually people who appreciate quality, strive for excellence, and can even be called connoisseurs. Their mission is to provide the pianist with a sublime, inspiring, creative, and enjoyable experience every time he or she plays the instrument. It's a paradox, but their goal is achieved when the pianist forgets about the piano and is able to focus exclusively on the music being played.

In the last issue of *Piano Buyer*, we focused on the viewpoints of dealers who sell high-end pianos. In the short pieces below, you'll hear from the people who service these instruments—some of the most respected piano technicians in the country. Each technician has extensive hands-on experience with the specific brand(s) he writes about. All of them strive for quality and perfection, and have intimate relationships with the pianos, inside and out. Although you'll recognize common ground in these technicians' opinions, there are also differences, and each speaks only for himself.

Selecting a piano can be compared to selecting a fine bottle of wine, perfume, or cologne. There are many flavors and essences, and there can come a point at which the dominant factor in the selection process is personal preference. The pianos discussed below are all considered among the finest made today. All have been designed with certain qualities, sound, and touch in mind, and each instrument has been made with great care. Our goal in this article is to inform the reader of the special quirks, qualities, limitations, and characteristics of the brands the writers most admire and are most familiar with. We believe the viewpoint of the technician is a unique and valuable one that adds a measure of "inside" information that can help the prospective purchaser.

Due to the large number of brands in the high-end market, we have divided this article into two parts. Part 1, in this issue, will cover C. Bechstein, Blüthner, Bösendorfer, Estonia, Fazioli, Feurich, Shigeru Kawai, and Mason & Hamlin. Part 2, in the next issue, will cover the rest.

—Editor



C. BECHSTEIN

C. Bechstein

Of the many fine high-end pianos made in Europe today, C. Bechstein is one of the finest. Managed and run by highly trained piano technicians, C. Bechstein is exacting in its commitment to using only the finest materials from around the world and to maintaining the

highest standards of workmanship. C. Bechstein stands out because the company has developed a remarkable synergy between modern manufacturing techniques and hand craftsmanship. Precise machining saves time, allowing for more handwork construction, and this translates into very high levels of quality and precision. This precision also makes the C. Bechstein a painless piano to work on. On delivery direct

In order to give prospective buyers of high-end pianos a better sense of the individual personalities of these brands, we will occasionally provide selected dealers, technicians, and pianists the opportunity to describe the musical and other qualities of the high-end brands they represent, service, or play. As you'll see over time, although different writers often describe the same brands in very different ways, certain common themes are evident.

from the factory in Germany, the piano needs little if any servicing other than normal tuning: the technician need only "tweak" the instrument with some small adjustments.

Unlike the vintage Bechstein, the modern C. Bechstein has a clear, powerful, transparent tone that develops a rich color palette over the entire dynamic range. The company has worked diligently to transform the instrument from its past as one with a more intimate tonal output into an instrument capable of considerably greater power and projection. As with many European pianos, the touch of a C. Bechstein seems light and very responsive. The instrument requires little effort to produce a great tone, which can throw off players unaccustomed to it. It is also very evenly weighted, with no apparent variation from key to key. The vertical pianos are also fine instruments, and made to the same standards as the grands.

—Joe Vitti

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Founded in 1853, the venerable Leipzig firm of Blüthner continues today as a family-owned and -operated business. Blüthner pianos are characterized by impeccable workmanship, and a tone that is clear and crystalline from *pp* to *ff*. Being somewhat partisan to the Steinway sound, I find the Blüthner tone, particularly in the smaller models, to have less depth and color than I generally prefer. I find it easier to achieve the tonal range I like when voicing the hammers of the larger models, such as the Model 1 concert grand and Model 2 semi-concert grand. In the highest treble section, Blüthner pianos feature a fourth, “aliquot” string per note. This string is not actually struck by the hammer, but sits a little higher than the other three strings and vibrates sympathetically with them. The intent is to give that register—which in other pianos is sometimes thin and weak—additional warmth and sustain; to my ears, it really does work.

Two other technical features that make Blüthner pianos a joy for me to work on are: the angle-cut hammers in the bass and tenor sections, which makes reshaping hammer a breeze; and the graduation of string gauges by half-sizes all the way down the tenor section, resulting in a very smooth tuning scale.

— Steve Brady

Some pianos never let you forget that they are percussion instruments. Others, like the Blüthner, are the polar opposite—smooth, refined, rich, and velvety. It’s easy to see why Artur Rubinstein wrote so lovingly about them in his autobiography. Ideal for intimate settings and chamber music, their rich, singing quality never overpowers. This beauty comes at a price, however: attempts to boost the power and add a little fire by hardening the hammers can be less than successful. Sustain may be compromised, and the tone can become strident, even weak. There seems to be a ceiling that cannot be breached, though I have found that judicious single-needle voicing from

the side of the hammer can lengthen sustain while adding breadth and power in the sixth and seventh octaves. Blüthner’s signature “aliquot” stringing system has the subtle but desirable effect of a whispering, ethereal echo that overlays the tone. One cannot but wonder, however, if the additional load on the soundboard from four-string unisons contributes to the piano’s lack of power and brilliance, even while enhancing the unique, characteristic sound for which Blüthner is known. For pianists seeking a warm, sophisticated companion in chamber music, or the perfect piano for Chopin or Schumann, the Blüthner is an obvious choice. Those who want a piano that can also set the curtains ablaze may be disappointed. The workmanship is impeccable, the veneers and finish worthy of a museum, and despite the extra strings, they are a dream to tune.

— Steve Pearson

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DER KLANG, DER BERÜHRT

Bösendorfer

The Bösendorfer is a boutique piano: a relatively small number of instruments made by hand, the old-fashioned way, by highly skilled craftsmen. Bösendorfers have a sound quality that is clear, sophisticated, and unique—not as three-dimensional as a Steinway, but still complex, and with excellent sustain and a singing tone. It records well, but may require custom voicing to cut through large orchestras or for other specific musical situations. Most pianists find the action pleasing and easy to control. From a technical angle, the action regulation and tuning are stable, the wood is well cured, and the materials are excellent. Exquisite custom cases are



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available. A bit costly, this is a piano for the connoisseur—to be enjoyed and savored.

My experience with Bösendorfers began when a 9'6" Imperial concert grand model was purchased by one of the concert halls I used to service. This theater also had both New York and Hamburg Steinway concert grands. It was interesting to hear each piano on the same stage with the same orchestra during the various orchestral seasons. Frankly, most artists preferred the Steinways for their superior ability to project to the back of the hall. But when the Bösendorfer was on stage, it was quite beautiful and strong in its own way.

The Bösendorfer rim, made of spruce and an important contributor to the piano's tone, is more flexible than the rims of other brands, so the piano may not be ideal for situations that require frequent dismantling and long-distance moving, such as concert rentals. However, it should be fine for the home or salon, or as a house piano for a concert venue, and maintenance will be

reduced if the room and/or piano are humidity-controlled.

— *Arlan Harris*

Bösendorfer pianos, built in the Vienna suburb of Wiener Neustadt, enjoy a well-deserved reputation for excellence in design and workmanship. Possibly the only piano made with a spruce rim—going against the conventional wisdom that a piano rim must be made of hard, dense woods such as maple or beech—most Bösendorfers sound best when voiced on the mellower side. When voiced up to a brighter sound, they tend to sound hard-edged and with short sustain rather than singing, and the tone may distort in louder playing. An exception to this is the company's 9'2" model 280 concert grand, in which maple is used to stiffen and add mass to the outer rim, and to create the potential for a more powerful instrument with better tonal sustain. When I tried this model at the Bösendorfer factory soon after it was introduced, I immediately felt it was the most impressive Bösendorfer I had ever played.

Several years ago Bösendorfer introduced the Conservatory Series (CS). These pianos have a less expensive finish and a few cosmetic differences, but are otherwise the same as the regular series while costing \$20,000 to \$30,000 less. (Originally, the CS pianos had loop stringing instead of the regular series' individually hitched strings, but this difference has since been abandoned.) Because I can't imagine that these differences are worth that much, the CS pianos seem a very good deal for those whose interest in the Bösendorfer piano is primarily musical rather than cosmetic. My own experience with servicing CS pianos suggests that they might not receive the same amount of technical preparation in the factory as the regular pianos, though Bösendorfer claims otherwise.

— *Steve Brady*

The Bösendorfer is truly a unique piano. The instruments are built on solid spruce inner and outer rims and keybeds, with a beech cap on the inner rim serving as both a mounting surface for the soundboard and a hardwood base for the plate mounting hardware. With exquisite design and meticulous workmanship, the pianos hold up well, and are excellent candidates for rebuilding due to their original design and high resale value.

Properly voiced, a Bösendorfer's tonal palette offers the advanced player a wider spectrum of timbre than do many other pianos. To truly experience what Bösendorfers have to offer requires that the prospective owner spend time discovering a different way of perceiving lyrical tone. In particular, the rich, clear sound of the tenor section brings definition to the inner notes of chords and harmonies, while the clarity of the lower treble cannot be overplayed. There is surprising volume and tremendous

carrying power—not necessarily heard at the piano bench—throughout all ranges. However, attempts to voice a Bösendorfer to sound like a Steinway typically result in a piano that lacks the richness of the tenor voices, with reduced volume and limited carrying power, even though it will likely have a very sonorous, pleasant, and engaging sound.

— Ed Whitting



Estonia

Estonia pianos have caused quite a buzz in the industry over the past ten years. For many of those years I was head of technical services for a large Estonia dealer, so I can personally attest to one of the biggest reasons for the company's success: It is owned by technically knowledgeable musicians who listen to—and actually implement—suggestions made by technicians both inside and outside their distribution network. As a result, the instruments are extremely well crafted and engineered, and quality control is excellent.

Characteristic of the Estonia piano is a round, singing tone—warm, rich, never harsh. This tone has a large and variable voicing range; in the hands of a good voicer, the tone can be sculpted and adapted to the client's preference. Movable duplexes offer technicians tonal options not always available with other high-end brands. The actions are well designed, easy to play, and responsive, though good action and tonal preparation by the dealer are necessary to achieve the best results from a new instrument. There are very few complaints or issues with this brand, and the relatively low price makes Estonia stand out in the competitive high-end market.

— Arlan Harris

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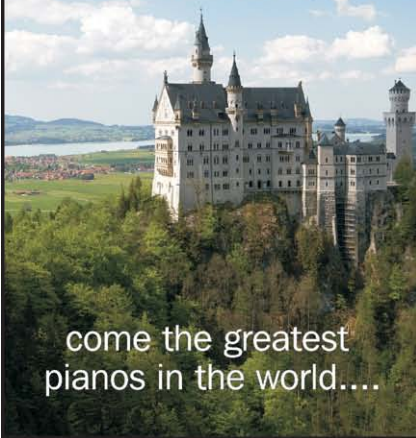
Producing almost entirely for the American market, Estonia has come on as a formidable competitor in the market for moderately priced, performance-grade pianos. These rock-solid instruments feature the low-tension scale favored by most American pianists and exemplified by Steinway, and are less “European” by most other measures as well. Having regularly serviced several Estonias over the years, I find them to be strong workhorses, built like tanks, and much loved by their pianist owners. The Renner actions are as responsive as any on the

planet, and the tone can be refined and hammers voiced to compare with those of far more prestigious instruments. Since musicians seldom earn great wealth playing the piano, it's necessary to find a high-quality instrument that is both affordable and satisfying to play. Estonia fills that bill very nicely.

— Steve Pearson

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The Fazioli tone is clear, pure, and profound, the midsection is rich, and every treble note up to the last is full, balanced, and sonorous. But compared to makes such as Steinway and Mason & Hamlin, the Fazioli sound is relatively lacking in tonal color. Many artists who enjoy performing on Faziolis praise having a "clean slate" to work with, especially when playing Bach and other composers whose music demands a purer tone. Yet, miraculously, for music requiring greater coloration, it is still possible for the more advanced pianist to create such colors on the Fazioli—or at least a perception of these colors—seemingly out of thin air, through the expert management of touch, pedaling, and timing.

— Arlan Harris

A famous European piano maker once remarked, "A Fazioli is a Steinway on steroids." That statement sums up my own feelings and experience with Fazioli. If you combine all of the positive attributes of the New York and Hamburg Steinways in the design of a new piano, then add an owner, head designer, and small production staff dedicated to building exactly to that design, you have the essence of a Fazioli. Fazioli pianos are finely crafted, hold up very well over the years, and one day will be excellent candidates for rebuilding owing to their original integrity and resale value. Extremely well built, the Fazioli piano is solid in every way.

— Ed Whitting

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Feurich

With an output of fewer than 20 pianos a year, Feurich is possibly Europe's smallest maker, with a long, proud history of handcrafted instruments. Playing a Feurich produces the uncanny feeling that the hand is somehow connected directly to the music—rather like the piano version of a Porsche: fast, positive, and responsive. The tone is very large and rather "open" compared to the more "covered" sound of a Steinway or Blüthner. The dynamic range is huge, the tonal palette rich and varied, and the sustain long and strong in the melody section. In my experience, the touch weight is a tad higher than in comparable pianos, but this may be deemed necessary to match the quickness of response—a lighter action might be too easy to overplay.

— Steve Pearson

SHIGERU KAWAI

Shigeru Kawai

The Shigeru Kawai concert grand at our university is a great instrument. The action is wonderfully even, and the carbon-fiber composite action parts require less maintenance than do regular wooden action parts. Like most Kawais, the Shigeru is a very easy piano to work on. However, string mating [mating the hammers with the strings so that each hammer hits all its strings evenly] is a continual battle, and needs to be done with each tuning. Compared to our Hamburg Steinway, our Shigeru has a darker tone, and its sound doesn't carry as well all the way to the back of the hall. That said, both pianos are chosen about

**“The most important thing is to transform the piano
from a percussive instrument into a singing instrument
a singing tone is made up of shadows and colors and contrast ...”**

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Dear Friends of Music,

The essence of it is fundamentally simple: We take the finest, natural materials and combine them with principles of outstanding construction to produce instruments that are alive. And this is how the tonal richness that Horowitz craved comes about.

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An adaptable, flexible sound is a necessity of life for professional pianists and a prerequisite for every interpretation. To enjoy making music, a variety of timbres is absolutely necessary for any pianist.

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Background: "Bagatelle sans tonalité" Franz Liszt 1885, p. 1

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equally, with more soloists choosing the Steinway, while the Shigeru is chosen more for chamber music and accompaniment.

— *Anonymous*

Shigeru Kawais are wonderful high-end pianos, with a certain individuality from instrument to instrument. With long sustain and powerful projection in all ranges, they provide the pianist all that is expected of a performance-grade piano. When properly maintained, they are chosen by artists for live performances, recordings, and competitions. The balanced touch and even tone across the various registers are a delight to the advanced player. Although the parts and workmanship are superb, and the pianos are expected to hold up well, the brand has not been on the scene long enough to establish a long-term track record—perhaps the only drawback of this otherwise great instrument. Given the performance of other Kawai models, however, there is no reason to believe the Shigeru Kawai will be any less reliable.

— *Ed Whitting*

Mason & Hamlin

Mason & Hamlin

Mason & Hamlin has always had many admirers—even fanatics—who love and worship their pianos. Having long enjoyed a position as Steinway's rival in quality, tone, and touch, modern Mason & Hamlins are still carefully crafted and engineered by some of the most innovative minds in piano technology.

The pianos are built like tanks, with a thick rim, heavy case ribs, and a massive full-perimeter plate, making each an instrument for a lifetime. Mason & Hamlin's "crown retention system" really works, keeping the soundboard crown

intact and resisting shifts in the structure that normally come as the instrument ages. The tone is uniquely American—very warm, full, and rich—with a strong bass, and good sustain and singing quality in the treble. The pianos provide good voicing flexibility and range. Cabinet finishing can be a weak point, so one needs to inspect the finish prior to purchase. Properly set up and cared for, Masons are stable pianos with relatively low maintenance requirements.

Mason & Hamlin actions have been redesigned in recent years and are now much lighter and more responsive. Although the manufacture of action parts is outsourced, the parts seem to be of extremely good quality. Pianos can be purchased with these standard action parts, but Mason & Hamlin has also established a division called Wessell, Nickel & Gross, manufacturing an alternative set of nylon-fiber composite action parts of innovative design that, among other features, are impervious to humidity and temperature changes and are of lower weight. Mason & Hamlin pianos can be ordered with these high-performance parts, which can also be retrofitted into other brands of piano. The jury is still out on these parts, which are new in an industry that is slow to change, but I've used and tested them in several pianos with excellent results.

— *Arlan Harris*

Some Parting Comments

In general, I find the top-tier European pianos to be more "finished" than their American and Asian counterparts. In the U.S., one expects to spend a fair amount of time regulating the tone and action—indeed, finishing the piano, which was shipped from the factory while still a "work in progress." Pianos such as Steingraeber, Blüthner, Feurich,

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Fazioli, and others, however, come out of the crate sounding and playing pretty much as their respective manufacturers want them to. It may be tempting for a technician to dig into them as one might a Steinway, essentially "redesigning" the instrument's voice. But I believe one does so at one's peril. Other than minimal voicing, minor adjustments, and tuning to compensate for climatic changes, these instruments should be left alone. It's best to respect the voice and philosophy of the maker.

— *Steve Pearson*



Anonymous, RPT, has 31 years' experience as a piano technician, and is currently head technician for a major university. His contract with the university prohibits the use of his name and that of the institution in this context.

Steve Brady, RPT, has 37 years' experience as a piano technician for private individuals, concert venues,

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piano dealerships, and universities. His latest book is *Under the Lid: The Art and Craft of the Concert Piano Technician* (Byzantium Books, 2008). He resides and works in Seattle, Washington. Visit his website at www.stevebradypiano.com.

Arlan Harris, RPT, MPT, has serviced pianos in homes, piano dealerships, concert halls, and recording venues throughout North and South America for 30 years. Currently director of technical services and head technician for a dealer in New York City, he also works as an independent technician servicing his own clientele. He can be reached at arlan_harris@yahoo.com or www.arlanharris.com.

Steve Pearson, RPT, has 35 years' experience as a concert piano technician, a manufacturer's service representative, and a piano dealer. He currently runs a piano service

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Joe Vitti has worked in the piano industry for over 30 years as a concert piano technician, in concert-grand manufacturing, as a manufacturer's service representative, and as a developer of products for piano technicians. Currently servicing a private clientele on Long Island, New York, he can be reached at concertek@yahoo.com.

Ed Whitting, RPT, a second-generation piano technician, has been servicing pianos since 1970, including as a concert piano technician and a manufacturer's service representative. He is currently in private piano service in the Los Angeles/Orange County area, his practice limited to high-level servicing, tuning, and rebuilding, and purchase consultation for high-end pianos. He can be reached at edwhitting@yahoo.com.



[This article assumes you are already familiar with the basics of piano-shopping (see “*Piano Buying Basics*” and other appropriate articles in this publication), and treats only those aspects of the subject that are specific to the institutional setting.—Ed.]

Institutional Basics

Institutions vary so widely in size, makeup, and needs that it is impossible to cover in a single article all the variables that might apply. For example, the studio of a graduate-school piano professor might be 12 feet square, carpeted, and cluttered with bookshelves, desk, and chairs, but still needs a performance-grade instrument. A church sanctuary—often a carpeted, irregularly shaped room with a raised dais and filled with pews, glass windows, and lots of sound-absorbing people—needs a piano that can accompany the choir, be heard throughout a huge room, and also be used as a solo instrument for visiting artists. A school may need dozens of pianos for everything from tiny practice cubicles to a concert hall.

However, regardless of whether you’re purchasing a piano for a church, school, performance space, or another institutional location, you need to start with some basic questions that will help identify the piano (or pianos) that are appropriate for your situation.

For example:

- Who will use the piano—beginners, advanced players, or concert artists?
- How often will the piano be played—in the occasional concert, or for 18 hours per day of intense student practice?

- How will the piano be used—lessons for graduate students? church services? recordings?
- Will the piano’s location be fixed, or will it be moved often?
- In what size room will it primarily be used?

After answering these questions, this article will help you establish some basic parameters, including:

- Grand vs. Vertical
- Size
- New vs. Used
- Digital vs. Acoustic
- Traditional Acoustic vs. Acoustic with Record/Playback/Computer Features

Budget

Once you’ve narrowed down the parameters of your ideal instrument or group of instruments, you need to consider your budget. In doing so, it’s best to remember that quality instruments properly maintained will last a long time. Accordingly, it’s best to view the cost of each instrument not as a one-time expense, but as a total expense amortized over the life of the instrument.

When figuring out the true annual cost of an instrument:

- Spread out the instrument’s purchase price over the span of its working life
- Factor in the cost of money, that is, the interest you would pay if you were to finance the purchase

(even if you don’t actually plan to finance it)

Include costs of tuning (typically three to four times a year, but far more often for performance instruments), regulation, and repairs

When you figure the cost of an instrument this way, you may even discover that certain more expensive instruments are more affordable than you thought.

Once you’ve determined your budget, and the size and other features of the instruments you desire, you can use the **online searchable database** accessible through the electronic version of this publication to assist you in finding the specific brands and models that will fulfill your needs.

Grand vs. Vertical

Many situations are adequately served by vertical pianos, including:

- Practice rooms where the piano is used primarily by, or to accompany, non-pianist musicians
- Places where there is no room for a grand
- Instruments that are not used for intense playing or difficult literature

A number of features of vertical pianos are commonly sought by institutional buyers:

- Locks on fallboard and tops
- A music desk long enough to hold multiple sheets of music or a score
- Toe-block leg construction with double-wheel casters—particularly important if the piano will be moved often

MODERN TECHNOLOGY

Both digital and acoustic pianos are available with a variety of modern technologies. Do you need:

- A piano that can be connected to another piano over the Internet for the purpose of long-distance lessons, concerts, and master classes?
- An instrument that, for study purposes, can record and play back a student's performance, or play selections from a library of pre-recorded performances?
- An instrument that can accompany a vocalist, or string player or wind player, when they practice—even if a pianist isn't available?
- A piano that connects to a computer and can function as an interactive composition tool?
- A piano that can be used with score-following software so that the player can enjoy automatic page-turning, or rehearse a concerto with an electronic orchestra that follows the soloist?

The piano has a history of more than 300 years of technological change and innovation. New technologies are ever more rapidly becoming integral parts of our musical landscape. You want the piano that you purchase today to last for a long time. In making your selection, therefore, be sure to consider your current and future technological needs.

- Heavy-duty back-post and plate assembly for better tuning stability
- Climate-control systems
- Protective covers

Grand pianos, however, have keys, actions, and tonal qualities that are more appropriate for practicing and performing advanced literature, and are therefore preferred in situations where they are largely used by piano majors or performing pianists. Grands are preferred by

piano majors even for small practice rooms, because the students use these instruments primarily to develop advanced technical facility, something that's almost impossible to do on vertical pianos. Commonly sought features of grands are:

- Mounting on a piano *truck* (a specialized platform on wheels) for moving the piano easily and safely
- Protective covers to avoid damage to the finish
- Climate-control systems
- Lid and fallboard locks

Size

Carefully consider the size of your space. You can easily spend too much on a piano if it's larger than the space requires, and you can easily waste your money if you purchase an undersized instrument. For more information about how room acoustics might affect the size of instrument you should purchase, see "[How to Make Your Piano Room Sound Grand](#)," elsewhere in this issue.

Of course, the tonal quality and touch of the instrument are related, in large part, to its size. If you're purchasing pianos for teaching studios in which artist faculty are instructing graduate piano majors, or for practice rooms used primarily by piano majors, there may be musical reasons for choosing larger grands despite the fact that the spaces are small. You'll be able to capture most of the advantages of a larger grand's longer keys with an instrument six to six-and-a-half feet long. Any longer will be overkill for a small teaching studio or practice room. A larger teaching studio may be able to accommodate and make good use of a seven-foot grand. The size of the piano is much less important in the training of beginning pianists or non-pianist musicians. There, other factors, such as the size of the room, will



The Yamaha model P22 has typical school-piano features, such as locks, a long music desk, toe-block leg construction, and double-wheel casters.

be the dominant considerations.

Vertical pianos made for institutions are almost always at least 45 inches tall. Smaller verticals may have inferior actions and tone, and cabinetry that is more prone to breakage. Verticals taller than about 48 inches are probably unnecessary for most small studio and practice rooms, but may be appropriate in larger spaces where a larger sound is needed but a grand is out of the question.

A special problem often occurs when a house of worship or small recital venue with limited funds tries to make do with a grand piano that's too small for the space. The pianist will tend to play much harder than normal, and overuse the sustain pedal, in an effort to make the piano heard at the back of the sanctuary or hall, causing strings and hammers to break and pedal systems to wear out prematurely. Generally, a small- to medium-size sanctuary will require a grand six to seven feet long to adequately fill the hall with sound, but this can vary greatly depending on the size of the hall, its acoustics, how large an audience is typically present, whether the piano is being used as a solo instrument or to accompany others, and whether the sound is amplified. A piano dealer can help sort out these issues and recommend an appropriate instrument.

**“No other piano conveys the
essence of Chopin like the
Sauter Concert 275.”**

Eugene Mursky

In 2010, world-renowned Chopin interpreter Eugene Mursky will complete his recordings of Frederic Chopin's entire works in commemoration of the composer's 200th birthday. Eugene Mursky insisted on using Sauter pianos because of their clarity, power and musical sensitivity. Louisiana State University, Brigham Young University Hawaii, New Oslo Opera, German National Opera Stuttgart, and National Conservatory Utrecht of the Netherlands among many others also selected Sauter pianos for their venues in 2009.

New vs. Used

Excellent acoustic pianos that are well maintained should last for decades. Given this fact, should your institution consider purchasing used instruments and thus save some money? If this is something you're considering, read "[Buying a Used or Restored Piano](#)" in this issue before continuing. When comparing a used piano to a new one, consult a trusted piano technician to get a sense of the used instrument's condition and remaining useful life. Then amortize the cost of the pianos, including expected repair costs, over their expected lifetimes to determine which is the better value.

If considering a used acoustic piano with embedded electronics, such as an electronic player piano, be careful to avoid purchasing an instrument whose technology is so obsolete that you can't use it productively. On the other hand, if your intention is to use a player piano's MIDI features mostly in conjunction with a computer, you do have one protection against obsolescence on your side: Although MIDI has been around since 1982, it's still an industry standard that works well and shows no sign of disappearing in the near future. Accordingly, you can continue to upgrade the features of an older MIDI piano merely by upgrading the software you use on your computer.

Acoustic vs. Digital

Digital pianos continue to improve every year, and the benefits realized for every dollar spent on a digital piano continue to grow with advances in technology.

Here are some examples of institutional situations in which a digital piano is generally the preferred instrument:

- Class piano, where students and teachers wear headsets and the

teacher controls the flow of sound in the room with a lab controller

- Multipurpose computer/keyboard labs where students need to work independently on theory, composition, and performance projects without disturbing others in the room
- A church that features a so-called "contemporary service" in which the keyboard player needs an instrument with lots of on-board sounds, registrations, and automatic accompaniments

In other situations, the preferred choice may not be so obvious. For example, if a school has a practice room largely used by singers and instrumentalists (not pianists), should you supply a digital piano or a vertical?

When weighing these and similar questions, keep in mind:

- In an institutional setting, a typical, well-maintained acoustic piano has a life expectancy of 20 to 40 years; a higher-quality instrument might last 30 to 50 years. Because the digital piano is a relatively recent invention, we can't be as certain how long they will last in an institutional setting. A reasonable estimate for a good-quality digital instrument might be 10 to 20 years. However, digital instruments are subject to a rapid rate of technological advance that may eventually limit the instrument's usefulness, even though it still functions. On the other hand, the digital piano won't need tuning, and may go for years before it needs any other maintenance.
- Some digital pianos are simply a substitute for the acoustic equivalent. Others have additional features that may be highly desirable, such as connectivity to



a computer, orchestral voices, and record and playback features.

- Some acoustic pianos are also available with digital-piano-like features, such as record and playback, and Internet and computer connectivity. If your choice comes down to an acoustic piano (for its traditional piano features of touch and tone) and a digital piano (for its embedded technologies), you may need to consider a hybrid digital/acoustic instrument. (See the article on [hybrid pianos](#) in this issue of *Piano Buyer*.)

Assessing Pianos Before Purchase

Assessing digital pianos is a relatively straightforward matter. You simply play and compare the features of various makes and models and make your selection. If you choose Model X, it doesn't matter if you take possession of the actual floor model that you tried: All Model X digital pianos will be the same.

Acoustic pianos are a different animal. There is more variation among pianos of the same model from a given manufacturer. However, it is important to note that some manufacturers have a reputation for producing uniformly similar instruments, while others have a reputation for producing more individually distinctive instruments.

If you're purchasing a single acoustic piano or a small number of acoustic pianos, you can and should take the opportunity to audition each one of them and make your selection carefully. If you're purchasing a concert or other very large grand, you may need to travel to the manufacturer's national showroom in order to make your selection. If so, factor the cost of the trip into your budget. In some situations it may be possible to audition a large grand in the space in which you intend to use it. This will give you an opportunity to know for sure that you're making the right decision. On the other hand, if you're purchasing a dozen practice room upright pianos, or are completely replacing your inventory of instruments, it's more practical to audition just a sample of each model and make your purchase decision on that basis.

Keep in mind that any fine acoustic piano can be adjusted within certain parameters by a concert-quality technician. If a piano sounds too bright when it is uncrated, skilled needling of the hammers can result in a noticeable mellowing of the sound. Similarly, a new action may require some additional adjustment (called *regulation*) to provide you with a keyboard that is optimally responsive.

Preparation, Tuning, and Maintenance

All pianos require maintenance, and acoustic pianos more than digitals. New acoustic pianos need to be properly prepared before they're deployed. All acoustic pianos should be tuned regularly, and regulated as needed. Acoustic pianos with record and playback systems also may need periodic calibration of their embedded systems. See the [accompanying article](#) for more information on the maintenance of acoustic pianos in institutions.

LOAN PROGRAMS: AN ALTERNATIVE TO PURCHASING

Often, institutions find themselves needing to acquire a number of pianos at one time. Perhaps the institution needs to replace a large number of aging instruments or to furnish a newly expanded facility or program—or a school may want to acquire a number of new instruments each year to demonstrate to prospective students that it has a music program of high quality. Such situations can pose a budgetary dilemma—the simultaneous purchase of even a few pianos can cause fiscal stress. Fortunately, relief is sometimes available in the form of a school loan program.

On the surface, a school loan program may seem too good to be true: free pianos, loaned for an academic year. At the end of the year, the pianos are sold. More free pianos the next year.

In truth, a school loan program can work only when it makes sense for both the school and the local dealer. (Although the manufacturer may be a participant in the program, the contract is normally with the local dealer.) Both sides of the agreement have obligations to the other.

For example, a school *may* receive any of the following, depending on the structure of the program:

- Free or very-low-cost use of a significant number of pianos
- Free delivery
- Free tuning and maintenance
- Name association with a prestigious manufacturer

A school may also have any of these obligations:

- Liability for damage
- Delivery charges
- Tuning and maintenance costs
- Requirement to purchase a certain percentage of the instruments
- Requirement to supply an alumni mailing list to the dealer for advertising purposes
- Requirement to provide space for an end-of-year piano sale

When evaluating a loan program, it's generally a good idea to consider:

- The quality of the dealership that stands behind the program
- The appropriateness of the mix of pianos offered
- The school's vulnerability if the program were to be discontinued by the dealership after the current year

That last point is a key issue. What happens if you replace your inventory of old pianos with loaned instruments and the loan program becomes unavailable the next year? Suddenly and unexpectedly, you are faced with having to buy replacement instruments.

Generally speaking, it is a good idea to include with your loan program a purchase component so that you are building your inventory of quality instruments over the course of the loan.

Who Should Make the Purchase Decision?

As the foregoing discussion suggests, there are many intersecting practical, artistic, and financial factors to be considered when making an institutional purchase of a piano or group of pianos. This raises the question: Who should make the purchase decision?

No single answer fits all situations. By tradition, a church's decision-making

process may be handled by the music director, the pastor or priest, or perhaps by a lay committee. In a school of music, decisions may be delegated to the chair of the piano department, the chair of the music department, the dean of fine arts, or some other individual or faculty committee.

In many instances, well-intentioned individuals with no knowledge of pianos find themselves having to make

a final decision. It is important that those involved in the process commit themselves to understanding the intersecting issues, and bring into the decision-making process appropriate people from the artistic, technical, and/or financial sides. At a minimum, that means the piano technician, and the most advanced, or most frequent, professional users. If a digital-technology-based instrument is being considered, someone should be involved who can speak to those technical issues as well. A department chair who has not actually used the technology in question may or may not be in a position to evaluate it.

Negotiating a Purchase

Before negotiating a price or sending a proposal out to bid, it's usually a good idea to do some price research. This can be tricky, however.

For example, if you or someone you know simply calls up a dealer and asks for a price, you're unlikely to be told the lower "institutional price" that you might ultimately get. Some dealers are reluctant to quote prices over the phone, or are prohibited by their suppliers from doing so. Others will refuse to quote a price if they know that the purchase will ultimately go out to bid.

Your institutional purchase may benefit the dealer or manufacturer in ways other than the profit from the sale. Therefore, when discussing your possible purchase, don't hesitate to mention:

- How prominently positioned the instruments will be in your institution or in the community
- How many students or audience members will come in contact with the instruments on a regular basis
- How often you or your institution is asked for purchase recommendations

- How musically influential your institution is in the surrounding community

The bottom line is this: You won't know what the final price will be until an official representative of your institution actually sits down with the dealer principal or until bids are awarded. Before you reach that point, however, and for planning purposes, you can make discreet inquiries and put together some estimates. As a rule of thumb, and only for the purposes of budgeting, if you subtract 10% to 15% from the dealer's "sale" price, you will likely come close to the institutional price.

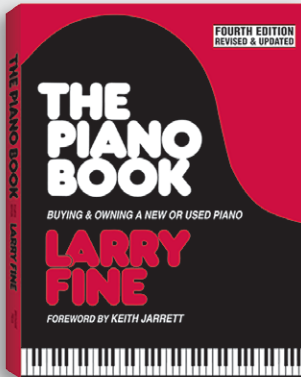
If you represent a school that's required to send purchase requests out to bid, you may not have much of a role to play in negotiating a price. However, the way in which you word your bid will have a lot to do with the bids that you receive and the instruments that the bidding rules will compel you to purchase.

For example, if you really want Brand X with features A, B, and C, be sure to write your bid description so that it describes—within acceptable guidelines—the instrument that you wish to purchase, and rules out instruments that don't fit your needs. If your bid description is loosely written, you may receive low bids for instruments that don't meet your requirements.

Because pianos can last a very long time, any piano-buying decisions you make today for your institution can have consequences for a generation or more. Therefore, it pays to take the time to think carefully about your institution's present and future needs, to budget sufficient funds for purchase and maintenance, and to consult with individuals both within and outside your institution who may have special expertise or be affected by your decision. If you take the time to do this properly, then your

constituents—be they students, faculty, worshippers, or concert-goers—will enjoy the fruits of your work for years to come. 🎹

George Litterst (www.georgelitterst.com) is a nationally known music educator, clinician, author, performer, and developer of music software. In the last role, Mr. Litterst is co-author of the intelligent accompaniment program *Home Concert Xtreme*, the electronic music-blackboard program *Classroom Maestro*, and the long-distance teaching program *Internet MIDI*, all from TimeWarp Technologies (www.timewarptech.com).



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THE ADEQUATE AND EFFECTIVE MAINTENANCE of pianos in institutional settings differs from the typical service needs of the home environment in two major ways. Pianos in schools, churches, and colleges are, first of all, usually subjected to heavy use, and second, are very often situated in difficult climatic environments. These pianos will require more frequent service by technicians with special skills, and greater attention to climate control.

In college and university settings, pianos are frequently used eight to twelve hours a day by many different players. Some students have practice habits that involve a great deal of repetition, which causes greater wear to the actions and keys of the instrument in a way that reflects the patterns of their practice. This can easily be ten times more patterned repetition than a piano normally receives in your home. The parts of piano keys and actions that will show the greatest wear are made of felt, leather, and wood, and there are thousands of them in each piano. These materials are chosen, designed, and treated by manufacturers to maximize their working life, and considering the repetitive nature of their use, it's a wonder they last as long as they do.

But no matter how well made, the nature of these materials dictates that when the piano is used for many hours, day after day, week after week, the wear and deterioration can be extensive. To maximize their longevity, it is very important to keep these pianos in good regulation so that the wear proceeds more evenly. Along with tuning, regular regulation of the action, pedals, and tone should be basic parts of any effective plan of piano maintenance. Without this, neglected instruments in such environments will quickly become

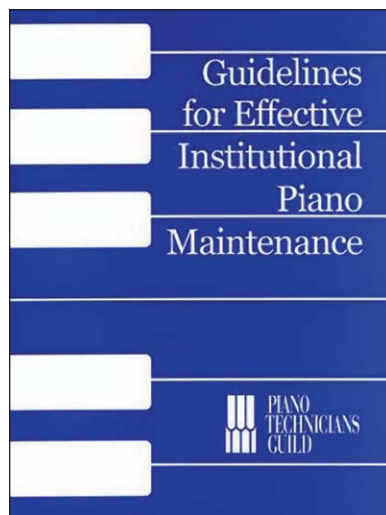
impossible to regulate without extensive overhaul or replacement of parts.

At some point, of course, parts *will* have to be replaced, worthy instruments rebuilt, and unworthy ones replaced. But there is no need to hasten the inevitable by subjecting pianos to the worst form of abuse: neglect. Frequent and regular servicing of pianos is a requirement for any institution that hopes to maintain an adequate performance or learning situation that will not only meet the needs of its members, but serve as a vehicle for the recruitment of new students.

Depending on the security and rules established for using the pianos, abuse can also come in the form

of vandalism or simple carelessness. Rules should be established that keep food and liquids away from pianos. Procedures for the safe moving of pianos should be established and strictly enforced to protect the instruments as well as those who do the moving. Untrained personnel should never move a piano anywhere.

But the single largest factor affecting the need for piano maintenance is a fluctuating climate. While an environment that is always too hot or too cold, or too wet or too dry, can cause deterioration, pianos can usually (within reason) be regulated to reliably perform in such an environment. However, many institutions provide interior climates of constant change. It's not unusual to find a school or church whose HVAC system produces 80° F and 8% relative humidity during the winter heating season, but 76° F and 80% relative humidity in the summer. These systems' air-exchange devices can also create drafts that blow directly on the piano, further varying the temperature and relative humidity by a great deal. Often, the temperature settings on these systems are changed during vacation periods. A good target for any piano's environment is 68° F and 42% relative humidity. Installation of inconspicuously-located climate-control systems for the pianos is almost always necessary in institutional environments. A plan for the daily monitoring of these systems should also be considered. [See the article, "**Caring For Your Piano**," for more information on climate-control systems for pianos.—Ed.]



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PIANO BUYER

The Consumer Reference to Buying a Piano

The most important factor in maintaining the utility and longevity of any institution's pianos is the choice of piano technician. An institutional technician should possess the advanced skills and experience required to prepare pianos for public concerts, organize and manage a large inventory of instruments, deal daily with high-level pianists and educators, and be familiar with the techniques necessary for the time-efficient maintenance of practice-room pianos. An underqualified technician can contribute to an accelerated rate of deterioration and shorten the lives of the instruments under his or her care. Some fully qualified technicians, mostly manufacturer-trained, have no formal credentials. However, hiring a Registered Piano Technician (RPT) member of the Piano Technicians Guild (PTG) ensures that at least a minimum standard of

expertise has been tested for and achieved. (At the time of this writing, PTG is considering adopting a College and University Technician endorsement credential that would ensure that the credentialed technician has a minimum of the special skills required to work successfully in the institutional environment.) A good way to begin planning any institution's piano-maintenance program is to read PTG's *Guidelines for Effective Institutional Piano Maintenance*, available in printed form or as a free download from www.ptg.org. 

Chris Solliday services the pianos at several institutions, including Lafayette College, Lehigh University, and East Stroudsburg University. He lives in Easton, Pennsylvania, and can be reached through his website at www.csollidaypiano.com.

CERTAIN TECHNICAL FEATURES of pianos are frequently the subject of sales talk, either to persuade you to buy a particular piano, to upgrade to a more costly model, or to not buy a competitor's piano. Untangling the truth from the salesmanship can be difficult, sometimes even for professionals in the business. The important differences in quality between brands are more often in subtleties of design and attention to detail than in advertised features, and even where meaningful features are involved, they are easily manipulated by advertising. *The Piano Book* explains in some detail many popular piano features and how they are sometimes misused in sales talk. Here I discuss just three examples: laminated versus solid soundboards, wet-sand-cast versus vacuum-cast plates, and issues related to the wood used in grand piano rims.

At the heart of some of these discussions is the fact that the piano industry—particularly the high end of the business—is very conservative, in large part because consumers are spending a lot of money to buy something they know little about and thus are easily scared away from anything that departs from the “old-fashioned” way of doing things. In addition, the purchase of a high-end piano is often the expression of a conservative part of one's nature—the desire to invest in something enduring and traditional, not cheap or trendy.

Because the design and construction practices used in making the best pianos have evolved over a long period of time, a certain wisdom is embodied in them that should not be too quickly tossed aside. But it must also be remembered that most of these practices are a century old and evolved under certain technological and economic constraints, some of which no longer exist. In other words, there may be better ways of doing things now that are not being pursued for reasons that have

no basis in logic. The low end of the piano market is less constrained by this conservatism, but is still influenced by it.

Soundboards

One of the choices you may need to make among consumer-grade pianos is that between a solid spruce soundboard and a laminated soundboard. First, it must be said about this and any other tone-related technical issue that if the piano sounds good, you needn't question why—just enjoy it! However, since the technical issue may be raised by the salesperson (usually in the context of steering you toward or away from a piano with a laminated soundboard), you may want to know more.

Traditionally, the soundboards in all pianos have been made in the form of a solid sheet of vertical-grain

(quartersawn) spruce. This solid spruce soundboard, as it is called, is made by gluing many narrow planks of spruce together, edge to edge. The soundboards of all performance-grade and many upper-level and mid-range consumer-grade pianos are still made this way. The soundboard is bent into a slightly convex shape, called crown, to better resist the downward pressure of the strings and to enhance the tone. Over many years' time, the wood gradually dries and shrinks, causing the crown to flatten or disappear and cracks to form. Although sometimes the problem is primarily cosmetic, if severe enough it can and often does affect the instrument's tone. Usually it takes decades for this to happen, but in very dry indoor climates, problems of this sort can occur even within the warranty period.

It was in large part to lessen warranty costs from prematurely cracking soundboards that, in the 1960s, several manufacturers developed laminated soundboards. These soundboards were essentially sheets of plywood. The sandwich of wood and glue prevented the soundboard from cracking or losing crown. The problems with these soundboards were three-fold: First, the pianos into which they were installed were usually the cheapest, and deficient in a variety of ways unrelated to the soundboard. Second, engineers failed to take into account in its design that a plywood soundboard would have different

If the piano sounds good, you needn't question why—just enjoy it!

vibrating characteristics from a solid one. Third, although sometimes spruce was used in the plywood, often cheap, inappropriate woods such as basswood or lauan were used, disguised by an outer veneer of spruce. As a result of these three factors, these pianos usually sounded poor, giving the term “laminated soundboard” a bad name. Laminated soundboards of the plywood type are still used by a few manufacturers.

Over the past couple of decades better laminated soundboards have been developed, and the pianos into which they've been installed are more advanced, too. The principal new type, known as a “veneer-laminated” or “surface-tension” soundboard, consists of a core of solid spruce (essentially a solid spruce soundboard) covered on both sides by a very thin veneer of spruce. This type of soundboard vibrates much more like a solid one than a plywood one, but still retains the benefit of protection against cracking and loss of crown. Pianos with these soundboards usually sound reasonably good, and occasionally very good. Although solid spruce soundboards may still have a tonal advantage, the laminated feature can be an advantage in durability, particularly in challenging climates, and may contribute to better tuning stability through the annual cycle of seasonal climate changes.

Despite the improvement, you'll generally find these new laminated soundboards only in entry-level or lower mid-range pianos. But the reason for this has less to do with their quality than with marketing: Laminated soundboards are a feature still used by manufacturers to differentiate a lower-cost instrument from a higher-cost one for marketing purposes, even when the laminated one might arguably be better. If you're shopping in the entry-level price range and a piano with a laminated soundboard meets your musical and

other expectations, there's no reason not to purchase it.

Plates

The piano's cast-iron plate is the gold or bronze-colored metal framework across which the strings are strung. For well over 100 years, plates have been made using the wet-sand method of casting, which works something like this: Wooden molds are made in the image of the front and back of the plate. Each mold is pressed into a tray of moist sand, thus transferring the shape of the plate to the sand. The moisture enables the sand particles to stick together to retain the impression. The two trays of sand representing the front and back of the plate are clamped together, and molten iron of a carefully controlled chemical composition is poured into the cavity created between the two impressions. When the iron cools, the trays are unclamped and removed, revealing a cast-iron plate identical in shape and appearance to the wooden molds. Although factory engineers have largely perfected this method over the years, the plates produced in this manner are quite rough, requiring a lot of sanding and finishing work, and vary slightly in dimension from plate to plate, which is less than ideal for highly automated factories that depend on uniformity.

In the 1960s, to manufacture plates that were more uniform, and faster and less costly to make and finish, Yamaha developed the Vacuum Shield Mold Process, or V-Pro. In this method, fine dry sand is used, and a thin plastic film and vacuum pressure keep the sand in place to retain the mold shape. This process produces plates that are not only more uniform, but also show decorative detail much more clearly while requiring less finishing work.

The V-Pro method is used by a number of large Asian manufacturers, where it fits in well with their rapid, highly automated production. All smaller manufacturers, including those of the highest quality, use the traditional wet-sand method. From this it might be assumed that the wet-sand plates are superior in quality, and companies that use this method often make a point of mentioning it in their advertising. However, the reason for the difference is more likely to be one of economics than of quality—the capital costs for starting up a V-Pro plate foundry are very high, and there is not enough advantage to most piano makers to undertake this. For some large Chinese manufacturers that still use the wet-sand method, the low cost of labor to finish the rough plates outweighs the cost of building a new plate foundry. For smaller, high-end makers that might in theory employ the services of an independent V-Pro plate foundry, there is little advantage because these companies finish their plates to very high standards anyway, and the labor saved by starting with plates a little less rough is not significant. In addition, due to the aura of superiority surrounding wet-sand plates, the switch by a high-end maker to V-Pro plates might engender negative publicity that would hurt sales.

There is some talk that plates made by the wet-sand method may be less likely to steal energy from the strings, or that V-Pro plates may add some unwanted metallic sound to the piano tone, but the truth is more complicated. According to the experts I consulted, when plates are made by the wet-sand method, the moisture in the sand, when contacted by the molten iron, produces a large amount of steam. To counter the invasive effects of the steam, the plates, to retain their strength, must be made thicker than would otherwise be the case.

The V-Pro method, using dry sand—and thus producing no steam—allows plates to be made thinner *if desired*, as might be the case with an inexpensive piano. Rather than remain inert, as it's supposed to, a plate with less mass will have a greater tendency to ring in sympathy with the vibrating strings, thus causing a loss of tonal energy and creating a metallic distortion to the tone. However, if a plate is made just as massive by the V-Pro method as it would have been by the wet-sand method, these negative effects do not occur, and the V-Pro plate works just as well as the wet-sand one. Therefore, any differences between the two types of plates are more likely to be related to the price and quality of the pianos in which they're used than with the casting method per se.

Grand Piano Rims

The wooden rim of a grand piano serves two functions: structural and acoustical. Structurally, it's the foundation to which the cast-iron plate is bolted, and as such it assists

the plate in supporting the tremendous tension exerted by the taut strings. The acoustical function is less well understood. The soundboard is glued along its perimeter to a shelf formed by the inner rim of the piano case. The vibrational energy in the soundboard thus contacts the rim, and is either reflected back into the soundboard or is siphoned off into the rim, depending on the density of the wood used in the rim's construction, and on the stiffness and total mass of the rim. Dense woods and a stiff, massive rim will reflect sound energy to a greater degree, causing the sound to sustain longer, whereas softer woods and a thinner, more flexible rim will tend to absorb more energy, causing the sound to disappear sooner. This is why most of the best grand pianos have very thick rims made of dense woods such as maple and beech. (Bösendorfer, a high-end piano, has a relatively soft, spruce rim and so may seem an exception to this rule. But spruce transmits sound well, so the tonal energy is not so much lost as spread throughout the structure,

which then becomes an extension of the soundboard.) Less expensive grands may use softer woods like lauan (sometimes known as Philippine mahogany, though lighter and more flexible than true mahogany), or alternating layers of harder and softer woods.

Two things are important to note here. First, the hardness or density of the wood in the rim has nothing to do with the rim's ability to fulfill its function of structural support. A rim made with a less-dense wood like lauan won't "fall apart" or cause the piano to go out of tune faster; the issue is strictly one of how the rim affects the tone. Second, the words *hardwood* and *softwood* are botanical terms that have little to do with how hard or soft the woods actually are. So when a piano ad touts a "hardwood rim," or a rim made from "select hardwoods," chances are that the woods involved are not very hard at all; if they were, the ad would likely name the actual species of wood instead of hiding behind such general and potentially deceptive terms. 🎹

PIANO ART

The Bosendorfer Emperor

In 1869, the Emperor of Austria presented a richly ornamented grand piano as a gift to the Emperor of Japan. The plans still exist and are now used as a basis for production of the model Emperor, an exact replica of the original instrument. The model is decorated with richly carved and gilded details, all made by hand in a painstaking process to re-create the piano's special imperial touch.



How To Make a Piano Room Sound Grand

LEWIS LIPNICK



SINCE I JOINED the National Symphony Orchestra in 1970, I have performed in large, small, and medium-size rooms. Some have sounded wonderful, some not so wonderful. One night we play at the Kennedy Center, and the next in a high school gymnasium. Same music, same conductor, same musicians, but the two performances sound like two different orchestras. Why? The *room*. Change the room, and you change the musical result. Taking this one step further, we can even say that the room is an integral part of the performance. But where does the sound of the performer end and the sound of the room begin?

Our music rooms, whether large concert halls or smaller spaces in the home, can help or hinder our performance. Too large a room can strip our sound of energy and resonance, while too small a space can cause sonic overload, making the sound muddy, harsh, and overbearing. To enable an instrument built to fill a great concert hall to also work in much smaller domestic spaces and studios requires proper planning. Do you want to practice in an environment in which clarity of sound is more important than volume and resonance, or do you want to be able to play solo and chamber-music concerts in your home, in emulation of a small concert venue? These will require different approaches to room design, and possibly the choice of instrument.

The art of acoustical design for live music is part science, part empirical knowledge, part musical intuition, and part common sense. I call it an “art” mainly because one has to be creative when working in a space that needs to be both sonically and aesthetically pleasing. After all, few piano owners want to see their living rooms turned into sound laboratories simply to achieve their desired musical goals.

Based on my twenty-five years of experience as an acoustical consultant, as well as a professional musician, in this article I will tell you about the things you can do yourself to improve the acoustical qualities of your piano room. However, if you plan to buy a larger, higher-quality grand piano, I suggest that you consider allocating some additional funds to have your room tuned by an acoustical professional or by a contractor experienced in the acoustical treatment of small music rooms. Acoustical treatment techniques have come a long way in recent years, and there are many products that can be integrated into just about any domestic environment without making the room look like a recording studio. I have done this many times, without sacrificing musical *or* visual aesthetics.

Room Size

Vertical pianos are designed to work optimally in smaller rooms. They are usually placed up against a wall, and present relatively few problems in the typical domestic environment. The same is true of small grands. But the amount of sonic energy produced by anything larger

PIANO ROOM ACOUSTICS: HIGHLIGHTS

- For best sound, the total length of the walls of a room containing a piano should ideally be at least 10 times the length of a grand piano (or the height of a vertical piano) for solo playing, and 15 times for ensemble playing.
- Opening the doors of the room into adjacent living spaces can enhance the piano's bass clarity; the longer wavelengths of the lower notes require more space to be heard as specific pitches.
- It's best to use or design a room in which the short and long wall lengths and ceiling height are in ratios of 3 or 5, not 1 or 2. Avoid square rooms.
- Do not position a vertical piano or the tail of a grand in a room corner. Place a vertical piano along the short wall, one-third or one-fifth of the way from a corner. Place a grand piano across a corner at a 45° angle to the walls at a distance one-fifth or one-third of the way between diagonal corners.
- Use irregularly shaped objects, wall hangings, and furniture on or along the walls to break up or diffuse hard reflections. Except in very “live” rooms, use absorptive objects such as upholstered furniture and heavy draperies only sparingly, to avoid deadening the sound.
- Place a rug under the entire footprint of a grand or vertical piano to absorb excess reflected sound.
- If given the opportunity, audition a high-end piano in your room before committing to buying it.
- For best results, consider using the services of an acoustical professional and/or acoustical treatment products to fine-tune your music room.

than about a 6-foot grand can present some big problems in smaller rooms. While concert halls and piano showrooms are big enough to allow the sound of a larger grand to properly resonate, small rooms can't absorb so much sound, and will easily overload when the instrument is played full out. Like other fine musical instruments built to be played in large spaces, a large grand sounds best from some distance away. For instance, stand next to me when I play my contrabassoon's lowest B-flat (half a step above the lowest A on a piano), and while you can physically feel the power of that note, you won't be able to decipher its actual pitch until you walk several feet away from the instrument. The same thing occurs with a double bass, tuba, or pipe organ. At the opposite end of the scale, a really fine violin won't sound its best until the listener is several feet away, when the sound becomes more resonant, with more clearly defined pitch. This is the situation we face when placing a large piano in a room smaller than it was designed for. While we can do many things to just about any room to make it more friendly to a large piano, there *are* limits, dictated by the laws of physics, that we can't break without paying a price in quality of sound.

How large a piano room needs to be depends on the size of the instrument. Empirical data indicate that the combined length of a room's walls (assuming that the room's ceiling is 8 feet high) should be *at least 10 times* the length of a grand or the height of a vertical piano. For example, a 15 by 20-foot room ($15+15+20+20=70$ feet) should accommodate a 7-foot grand. This formula doesn't take into account openings into other rooms, irregular room shapes, etc., but it's a good starting point.

Low frequencies have the longest wavelengths and cause the most

problems in smaller rooms because the length of the wave exceeds the largest dimension of the room. The lowest A on a piano has a frequency of 27.5 Hz (cycles per second), which translates into a wavelength of about 41 feet! For this reason, the lower two octaves of a 7-foot grand, having less sonic power, will probably sound clearer in a small room than those of a 9-foot instrument in the same space, even though the larger instrument has the potential for greater low-bass clarity. This is the same principle that applies when designing audio systems and home theaters. In a smaller room, a smaller loudspeaker that *pressurizes* less air to reproduce a given frequency will actually *sound* clearer and deeper than a far bigger speaker in that room, even if the larger speaker's bass can go a bit lower in pitch. Therefore, common sense tells us that putting a full-size 9-foot concert grand into a 12 by 15-foot room with

an 8-foot ceiling will probably not yield the best results without a huge amount of dedicated acoustical treatment, and probably not even then.

If your piano room is L-shaped, or opens into another large space, this can help your piano's low-octave bass response—the much-longer low-frequency soundwaves can travel *through* large open spaces. This is one reason why, in a small room, opening the doors to adjacent rooms can often make your piano's low octaves sound a bit clearer. (Because the shorter, high-frequency waves tend to bounce off any flat surface closest to the piano, the extra space won't improve their clarity.)

Try to avoid square rooms, or rooms with wall lengths and ceiling heights having a relationship of 1:1, 1:2, or multiples thereof (for example, 16 feet long by 8 feet wide by 8 feet high). Such rooms exacerbate the buildup of low-frequency



coincident modes (resonant frequencies caused by standing waves), which can make the lowest octave of your piano sound uneven, overemphasizing some notes while making others virtually disappear.

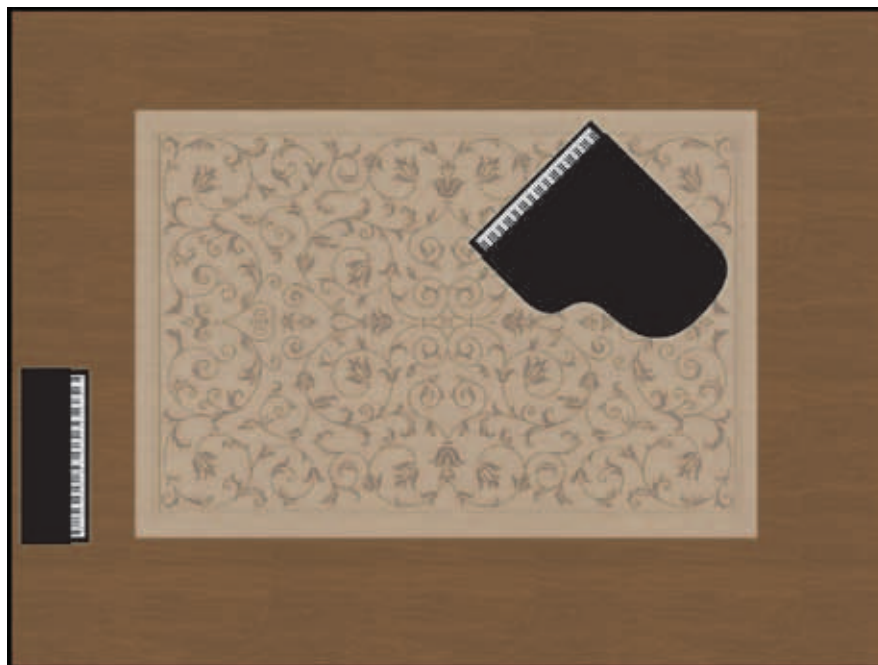
Ceiling Height

Greater ceiling height is always desirable for resonance, but be careful with this. As mentioned above, it's best that the ceiling height not be the same as the length of one of the walls, or that length divided or multiplied by 2 or a multiple of 2. For example, if one wall is 16 feet long, the ceiling should not be 8, 12, or 16 feet high. If your ceiling is more than one-and-one-third times the length of the shortest wall, you may have a problem of reflected sound-waves that will require some dedicated acoustical treatments, though not necessarily. I've worked in some rooms with very high ceilings that sounded fabulous, mainly because the extra headroom helped the low notes sound more full and deep. It all depends on how "live" (resonant) the space is, and exactly which room surfaces are reflecting the sounds of the piano. If you have a sloped ceiling, the best results will likely be achieved by placing a vertical piano against the wall where the ceiling is lowest, or a grand piano facing *out* from the same wall and into the area where the ceiling is highest.

Where to Place the Piano in the Room

[Note: Moving a piano can be dangerous. Have professional movers present to avoid injury to persons or damage to the piano and floors.]

Try not to push the tail of a grand, or the end of a vertical, all the way into a corner of the room. While doing so might give the lowest octave more power (low frequencies are boosted by adjacent wall and floor



The quality of sound from your piano is greatly influenced by where in the room you place it. In general, pianos should not be positioned too close to corners. A grand is best placed at a diagonal to the walls, one-fifth or one-third of the way between diagonally opposite corners. A vertical is best placed along the shorter wall, one-fifth or one-third of the way between adjacent corners. Grands in particular will usually sound better with a carpet or rug under the instrument. See text for details.

surfaces), pitch clarity and tonal evenness will suffer. The hard sound reflections coming off both corner walls can also kick back into the player's ears a lot of high-frequency "hash." Vertical pianos are best placed against a room's short wall, with the center of the piano one-fifth or one-third of that wall's length from the nearest corner. Try the instrument in both locations, listening for evenness of tone across the scale. Then slowly move it, a few inches at a time, in either direction to fine-tune the sound for clarity.

Finding the right spot in the room for a grand piano involves some effort but is not difficult. Begin with the piano near a corner of the room; if possible, position it with the long side across the corner at a 45° angle to the walls, with the open lid facing out into the room toward the diagonally opposite corner. This will keep

both ends of the piano equidistant to the walls and corner behind the instrument, enhancing evenness of tone throughout the piano's frequency range.

Now, measure the distance between the corner behind the piano and the diagonally opposite corner. Then, keeping the piano at a 45° angle, move the piano one-fifth of that distance out from the corner, in the same direction you just measured. Open the lid and play scales through the instrument's entire range, listening for even tonal quality and clarity of pitch. Then move the piano farther in the same direction, until it's now one-third of the way out from the corner. Play it again. Then, placing the piano in the best-sounding location of the two, slide it, in very small increments, back toward the wall closest to the keyboard end of the piano, maintaining the 45° angle, and playing

ACOUSTICAL TREATMENT PRODUCTS

RPG Diffusor Systems, located in Upper Marlboro, Maryland, offers a product that I have used in dozens of music rooms, studios, home theaters—anywhere sound needs to be controlled in order to enhance voice intelligibility and musical clarity. RPG's Binary Amplitude Diffusor (BAD™) Panel combines the best aspects of sound absorption and diffusion; it can make a dull room sound more "live," and a very live room sound less hard and reflective. A BAD will also absorb some of the excess sonic energy produced by a large piano in a small room. The panels measure up to 4 by 8 feet by 1 or 2 inches thick, are very light in weight, and custom-made with fabric covering (dozens of colors are available). However, BADs are powerful tools; I recommend that they be installed by someone trained in acoustical design. By employing a combination of absorption and diffusion, you will achieve a warmer, more resonant sound from your piano while retaining clarity.

If the lower two octaves of your piano still sound too heavy or too thin due to a buildup of low-frequency modes, some *bass traps* will help. These come in various sizes and shapes, and are most effective when placed in corners. By absorbing excess low-frequency energy in your room, bass traps will help the lowest two octaves of your piano sound clearer and deeper. I often hide traps behind grand pianos to minimize their visual

intrusion. When it comes to low-frequency modal problems, every room is different. Generally, the smaller the room, the more it is likely to have bass mode problems. If you think you need help with this, I would suggest you have an acoustical designer specify properly tuned bass traps for your particular room, as not every model will properly capture the offending modes in every room. This is an area in which paying special attention can result in considerable gains: Whatever happens in the lowest octave of your piano will affect the harmonics of all notes above, all the way to the top of the instrument's range.

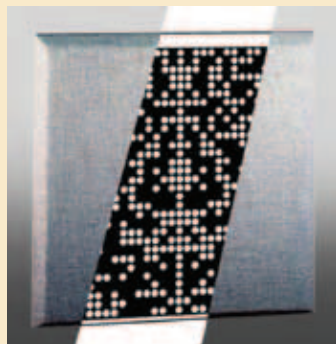
What's *above* your piano is just as important as what's under it. Flat ceilings reflect sound in the same way as flat walls, so the same remedy applies: diffusion and absorption. Exposed ceiling beams, or non-flat ceiling applications of varying thickness, will help diffuse hard reflections coming from the piano. Several types of acoustical diffusors can be attached to the ceiling and painted, and some products that look like drywall or plaster (such as *BASWaphon*) do a very good job absorbing sound. This is not a do-it-yourself job, however—call an acoustical contractor.

There are also other products, made of wood, glass, and metal, available from other manufacturers, that can be used as sound diffusors and absorbers. In addition to RPG, Acoustic Sciences Corporation (ASC) is a good source for these products.



RPG Modex Corner bass traps absorb excess low-frequency energy in the room.

Shown here in cutaway view, RPG Binary Amplitude Diffusor (BAD) Panels simultaneously diffuse and absorb sound in optimal proportions.



the same scales after every change in position. Then, once you find the "sweet spot," begin slowly rotating the piano by moving the keyboard end very slightly, a few inches at a time, in either direction, playing the same scales every time. This procedure can take some time, but it's well worth the effort, and not as difficult as it sounds. You'll probably be amazed at how big a difference very small changes in position can make in the way your piano interacts with the room boundaries. While this may not solve all of your room problems, I have yet to find a situation where it didn't significantly help.

Reflection, Diffusion, Absorption

Sound behaves in much the same way as light. Shine a flashlight at a mirror in a dark room, and a hard glare will be reflected right back into your eyes. Shine the same flashlight onto a frosted piece of glass, and you'll notice that the light is evenly distributed in a pleasing circle on the surface of the glass, which will also reflect more light *around* the dark room than the mirror did. Apply this to music in an enclosed space, and you can understand why diffusion—the random scattering of sound—is far better than hard reflection. The latter makes the music itself sound hard and brittle, while diffusion provides clarity, warmth, and an evenness of sound throughout the room. And because diffusion more evenly distributes high- and mid-frequency sound throughout a room, it adds greatly to musical clarity.

Absorption is useful in reducing the amount of sonic energy in a room. Many people make the mistake of cutting down reflections by deadening their music rooms with heavy draperies, thick carpets, and overstuffed furniture. However, this will

not absorb all frequencies evenly, and can make a room sound dull in the upper octaves and too heavy in the bass—or the other way around. While in “live” rooms some absorption is desirable, even necessary, I suggest a combination of absorption and diffusion. This can be done by placing books, bookcases, artworks, chairs, and other randomly shaped objects along the walls to break up reflections, as well as scattering around the room *some* soft surfaces, such as upholstered furniture. Some of the best music rooms have mostly hard surfaces with little absorption, but they all have *many* diffusive surfaces that break up the reflections, which keeps the sound live, warm, and resonant. Partially closed wooden blinds or other irregularly shaped treatments for windows and glass doors will help diffuse reflections coming off of those glass surfaces. Note that flat artworks, even when not covered with glass, can cause degrading reflections unless they have a very irregular diffusive surface. Fabric wall hangings, especially quilts and other thick, soft, irregular surfaces, can absorb a lot of high-frequency reflections, when used in moderation—but not heavy drapes, unless the room is especially “live” and reverberant.

Floor Coverings

What you put *under* your grand piano can make a huge difference in its sound. In designing a music room, whether or not it will contain a piano, I normally specify hard floor surfaces, whether of hardwood, ceramic tile, or marble. The center of the floor should be covered with an acoustically absorbent surface, such as a carpet or rug. The idea here is to have sound absorption in the central part of the floor to cut down on reflections, while keeping the edges of the room more “live” for resonance. If

BUILDING A DEDICATED MUSIC ROOM

When building a music room, it's best to use multiples and divisions of 3 or 5 for interior dimensions (rather than 1, 2, or multiples of 2). For example, let's say you plan to buy a Steinway model B grand, which is 6 feet 10½ inches long (I'll round that off to 7 feet for purposes of discussion). Applying the principle that the total wall length should be at least 10 times the length of the piano, this gives us a minimum total wall length needed of 70 feet (10 × 7). If we take one-fifth of 70 feet (=14 feet) for each of the two short walls, that would leave 42 feet, or 21 feet each, for the two long walls. The ceiling height would be calculated as one-fifth of 21 feet (the long wall), $\times 2 = 8.4$ feet. Therefore if your room is approximately 14 feet by 21 feet by 8.4 feet high, the piano should sound good, particularly for practice purposes. However, if you want a room in which you can perform for others on the same piano, or play chamber music with your colleagues, I suggest that your minimum total wall length be 15 times the length of the instrument. This could give you room dimensions of 21 feet by 31.5 feet by 12.6 feet high.

These specific proportions are offered only as examples. Unless you're building your room from the ground up as a dedicated piano studio, you may not be able to strictly adhere to this formula. If your chosen piano room doesn't come close to any optimal proportions (using the 3 and 5 multiply/division formula, you can come up with quite a few), all is not lost. It might take a little more

time to get the sound right, with the possible addition of some acoustical treatments to absorb coincident low-frequency room modes. But the larger the room, the less critical of an issue this becomes.

If you're building your piano room from scratch, I suggest you consider making all of the interior walls non-parallel, in order to avoid the typical *flutter echo* often produced in small and medium-size rooms with parallel walls. Splaying the walls (sort of like a trapezoid) at angles of 5° to 10° can do a lot to prevent flutter. You'll hardly notice that the room isn't a perfect rectangle, and it will sound a lot better.

Something else to consider when building a dedicated piano studio: Don't make the inside walls of the room too stiff by using several layers of gypsum drywall or similar material. The interior walls of your music room should be able to flex a little bit to allow them to resonate—like the skins of a huge drum—and absorb the low frequencies produced by a larger piano in a smaller room. The more the walls can flex, the more excess sound energy they can absorb. For walls, use one or two layers of drywall set on 16-inch centered wood studs (or metal studs, in most high-rise and commercial construction). If you need to acoustically isolate your piano room from the rest of the house, build an additional, heavier, outer wall separated from the inner wall by at least 6 inches of air space. Suspend your music-room ceiling from the ceiling joists using “Z-channels” or a similar system, so that it, too, can flex a bit.

the best-sounding location for your piano is not far enough out into the room for the instrument to be placed on the carpet or rug, place under the piano a separate area rug large enough to cover the piano's entire footprint. The bottom of a grand piano's soundboard produces a great deal of sound that a hard floor will

reflect, thus making the sound harsh and brittle—unless something is there to help absorb that energy. If you don't mind how it looks, you can store piles or boxes of music or recordings on the floor directly under the piano, which will provide absorption *and* diffusion. In very “live” rooms, a thick fabric cover

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(similar to a full piano cover) can be suspended *under* the instrument's soundboard. This is especially useful in practice rooms, where clarity is more important than generating a big sound.

Vertical pianos, normally placed against or near walls, don't interact with hard floor surfaces as intimately as do grands. However, if your vertical

is in the middle of a very "live" space, such as a dance studio or theater rehearsal room, it can benefit from some sort of floor covering under it that extends a few feet out from the piano on all sides. If a vertical's sound is still too resonant or bright, whether the piano is up against a wall or out in the middle of the room, you can eliminate some of this by

hanging a heavy fabric cover or blanket over the back of the instrument. Not very stylish, but it works.

Some high-end piano dealers will give you time to audition an instrument in your home or studio before you make a final commitment to purchase. I strongly recommend taking advantage of any such offer—the room in which you place your piano is as important as the instrument itself in determining the ultimate sound. 

Lewis Lipnick is the principal contrabassoonist of the National Symphony Orchestra in Washington, DC, and an internationally-acclaimed soloist and teacher. His consulting firm, LipnickDesign, specializes in designing high-resolution audio and video systems, recording studios, and home theaters; in environmental sound control; and in the acoustical design of commercial and residential spaces. Visit his website at www.lipnickdesign.com.

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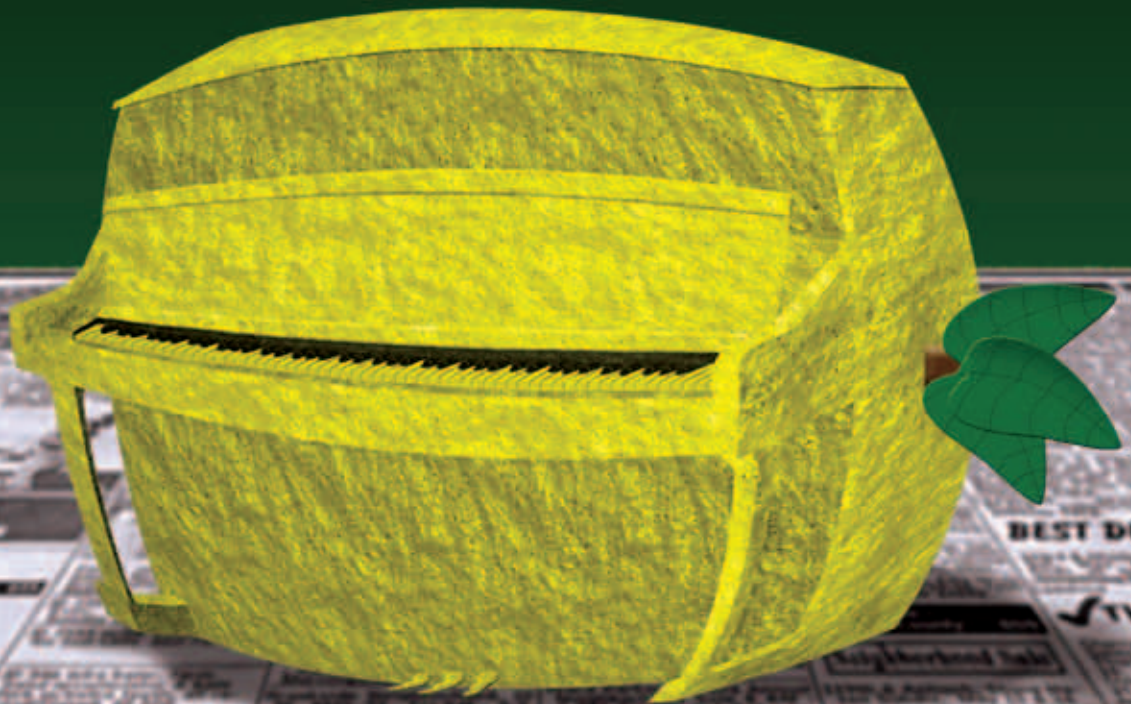
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A PIANO MAY LOOK large and imposing, but there is a great deal inside it that is delicate, and sensitive to both use and environmental changes. You have made a considerable investment in the instrument and now should protect that investment, as well as maximize your enjoyment of it, by properly caring for it. For most pianos in good condition receiving moderate use in the home, a budget of \$300 to \$500 per year should suffice for normal service.

If you bought the piano from a commercial seller, your first service will probably be a few weeks after delivery, by a technician associated with the seller. If you bought a used piano from a private seller and do not have a trustworthy recommendation to a technician, you can find the names of Registered Piano Technicians (RPT) in your area from the website of the Piano Technicians Guild (PTG), www.ptg.org. To become an RPT,

one must pass a series of exams, assuring at least a minimum level of competence in piano servicing.

The following are the major types of service a piano needs on a regular or semi-regular basis. More information can be found in *The Piano Book*.

Tuning

Pianos go out of tune mostly because of seasonal changes in humidity that cause the soundboard and other parts to alternately swell and shrink. This happens regardless of whether or not the piano is played. Pianos vary in their responsiveness to fluctuations in humidity, but the variance is not always related to the quality of the instrument. People also differ in their sensitivity to tuning changes. New or newly restored pianos should be tuned three or four times the first year, until the strings are fully stretched out. After that, most pianos should be tuned between one and three times per year, depending on seasonal humidity changes, the player's sensitivity, and the amount of use. Pianos that receive professional levels of use (teaching, performance) are typically tuned more often, and major concert instruments are tuned before each performance. A regular home piano tuning typically costs between \$100

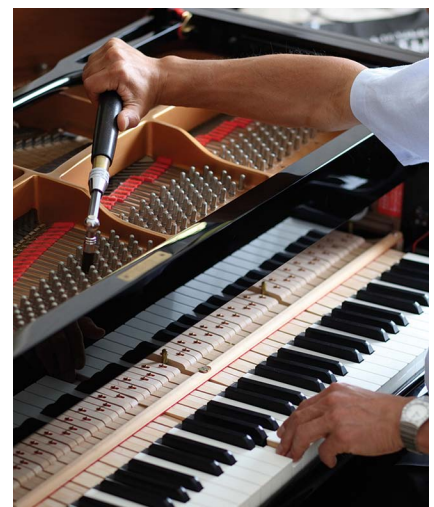
and \$200. However, if the piano has not been tuned regularly, or if it has undergone a large change in pitch, additional tuning work may be required at additional cost.

Regulation

Pianos also need other kinds of service. Due to settling and compacting of numerous cloth and felt parts, as well as seasonal changes in humidity, the piano's action (key and hammer mechanism) requires periodic adjustments to bring it back to the manufacturer's specifications. This process is called *regulation*. This should especially be done during the first six months to two years of a piano's life, depending on use. If it is not done, the piano may wear poorly for the rest of its life. After that, small amounts of regulating every few years will probably suffice for most pianos in home situations. Professional instruments need more complete service at more frequent intervals.



The thousands of parts in a piano action need periodic adjustment, or regulation, to compensate for wear and environmental changes.



A piano has over 200 strings, each of which must be individually tuned.



Custom voicing of a piano for optimal tonal quality is considered by piano technicians to be an art form.

Voicing

Within limited parameters, the tone of a piano can be adjusted by hardening or softening the hammers, a process called *voicing*. Voicing is performed to compensate for the compacting and wear of hammer felt (which causes the tone to become too bright and harsh), or to accommodate the musical tastes of the player. Voicing should be done whenever the piano's tone is no longer to your liking. However, most piano owners will find that simply tuning the piano will greatly improve the tone, and that voicing may not be needed very often.

Cleaning and Polishing

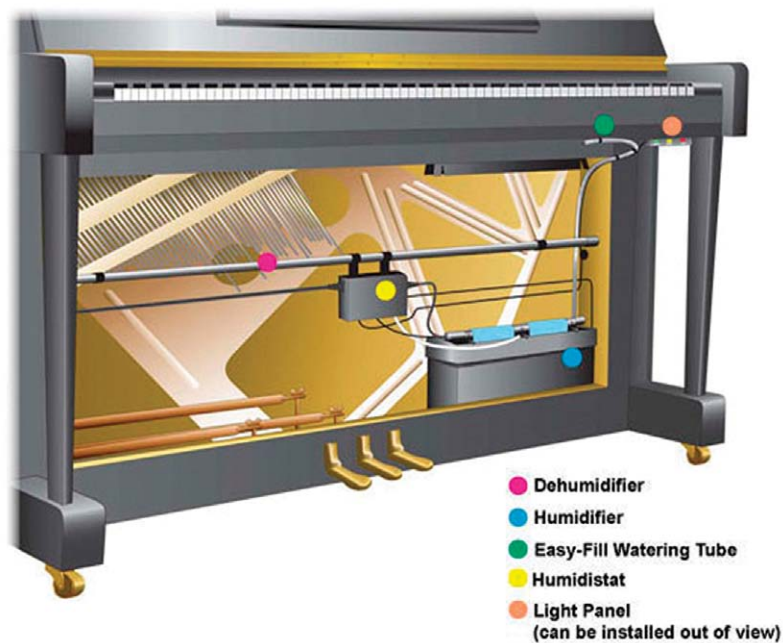
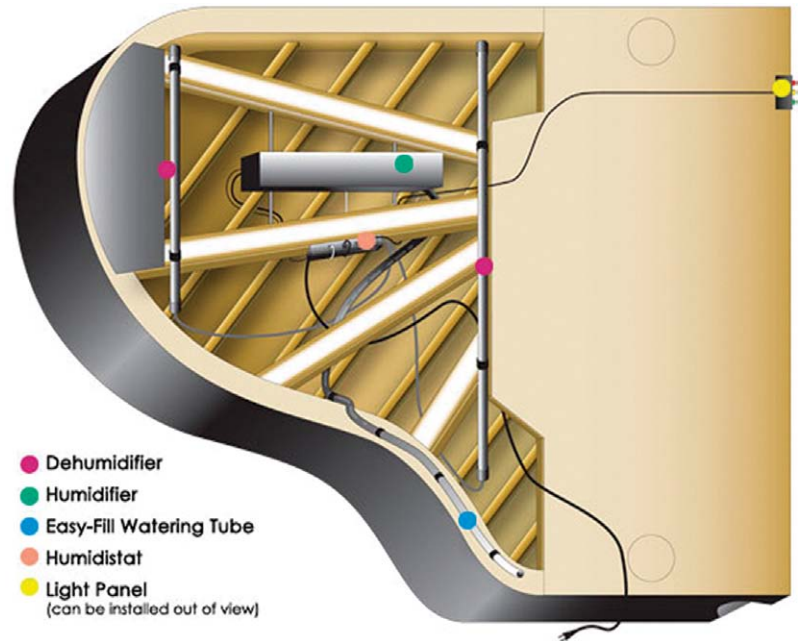
The best way to clean dust and finger marks off the piano is with a soft, clean, lintless cloth, such as cheesecloth, slightly dampened with water and wrung out. Fold the cloth into a pad and rub lightly in the direction of the grain, or in the direction in which the wood was originally polished (obvious in the case of hand-rubbed finishes). Where this direction is not obvious, as might be the case with high-polish polyester finishes, rub in any one direction only, using long, straight strokes. Do not rub in a circular motion, as this will eventually make the finish lose its luster. Most piano manufacturers recommend against the use of commercially available furniture polish or wax. Polish specially made for pianos is available

from some manufacturers, dealers, and technicians.

To clean the keys, use the same kind of soft, clean cloth as for the finish. Dampen the cloth slightly with water or a mild white soap solution, but don't let water run down the sides of the keys. If the keytops are made of ivory, be sure to dry them off right after cleaning—because ivory absorbs water, the keytops will curl up and

fall off if water is allowed to stand on them. If the black keys are made of wood, use a separate cloth to clean them, in case any black stain comes off (not necessary for plastic keys).

Dust inevitably collects inside a piano no matter how good a housekeeper one is. A piano technician can safely vacuum up the dust or otherwise clean the interior of the piano when he or she comes to tune it.



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Humidity Control


Because pianos are made primarily of wood, proper control of humidity will greatly increase both the life span of the piano and your enjoyment of it. A relative humidity of 42% is sometimes cited as ideal for a piano, but any humidity level that is relatively constant and moderate will suffice. Here are some common steps to take to protect your piano from fluctuations and extremes of humidity:

- Don't place the piano too near radiators, heating and cooling ducts, fireplaces, direct sunlight, and open windows.
- Avoid overheating the house during cold weather.
- Use air-conditioning during hot, humid weather.
- Add humidity to the air during

dry weather with either a whole-house humidifier attached to a central air system or with a room humidifier. Room humidifiers, however, have to be cleaned and refilled frequently, and some make a lot of noise. If you use a room humidifier, don't place it too near the piano.

Instead of the above, or in addition to it, have a climate-control system installed in the piano. They make no noise, require very little maintenance, and cost \$350 to \$500 for a vertical piano or \$400 to \$600 for a grand, ordered and installed through your piano technician or piano dealer. The illustrations on the previous page of the Dampp-Chaser climate-control system show how the system's components are discreetly

hidden inside the piano. For more information about these systems, see www.pianolifesaver.com.

Another solution to the humidity-control problem is **Music Sorb**, a non-toxic silica gel that naturally absorbs excess moisture from the air during humid times and releases it during times of dryness. It comes in packets or pouches sold through piano technicians. Enough for a single piano costs \$65 to \$70 and must be replaced once a year. Music Sorb probably won't control humidity changes in the piano quite as well as a Dampp-Chaser system, but may suffice in less severe climates, or in situations where plugging in and maintaining such a system is out of the question—or until the piano owner can afford the larger initial outlay of funds required for the system. 

WHEN SHOULD I HAVE MY PIANO TUNED?

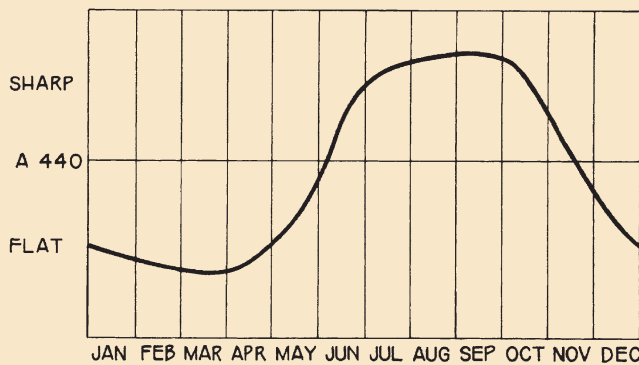
When to tune your piano depends on your local climate. You should avoid times of rapid humidity change and seek times when the humidity will be stable for a reasonable length of time. Turning the heat on in the house in the fall, and then off again in the spring, causes major indoor humidity changes, and in each case it may take several months before the piano's soundboard fully restabilizes at the new humidity level.

In Boston, for example, the tuning cycle goes something like that shown in the graph. A piano tuned in April

or May, when the heat is turned off, will probably be out of tune by late June. If it is tuned in late June or July, it may well hold its tune until October or later, depending on when the heat is turned on for the winter. If the piano is tuned *right* after the heat is turned on, however, say in October or November, it will almost certainly be out of tune by Christmas. But if you wait until after the holidays (and, of course, everyone wants it tuned *for* the holidays), it will probably hold pretty well until April or even May. In my experience, most problems with

pianos in good condition that "don't hold their tune" are caused by poor timing of the tuning with the seasonal changes.

Note that those who live in a climate like Boston's and have their piano tuned twice a year will probably also notice two times during the year when the piano sounds out of tune but when, for the above reason, it should probably *not* be tuned. The only remedies for this dilemma are to have the piano tuned more frequently, or to more closely control the humidity.



The pitch of the piano in the tenor and low treble ranges closely follows the annual cycle of indoor humidity. The graph shows how a typical piano in Boston might behave. Most areas of the country that have cold winters will show a similar pattern.



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Benches

In all likelihood, your purchase of a new piano will include a matching bench. Benches for consumer-grade pianos are usually made by the piano manufacturer and come with the piano. Benches for performance-grade pianos are often provided separately by the dealer.

Benches come in two basic types: *fixed-height* or *adjustable*. Consumer-grade pianos usually come with fixed-height benches that have either a solid top that matches the piano's finish, or a padded top with sides and legs finished to match the piano. The legs on most benches will be miniatures of the piano's legs, particularly for decorative models. Most piano benches have music storage compartments. School and institutional-type vertical pianos often come with so-called "stretcher" benches—the legs are connected with wooden reinforcing struts to better endure heavy use.

Both solid-top and padded benches work well. The padded benches tend to be a little more comfortable, especially for those who have little natural padding of their own. They tend to wear more quickly, however, and are subject to tearing. Solid-top benches wear longer but are more easily scratched.

Adjustable benches are preferred by serious players who spend hours at the piano, and by children and adults who are shorter or taller than average. The standard height of a piano bench is 19" or 20". Adjustable benches typically can be set at anywhere from about 18" to 21". By adjusting the bench height and moving it slightly forward or backward, one can maintain the proper posture and wrist angle to the keyboard.

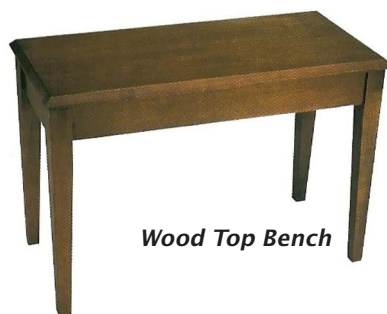
High-quality adjustable benches have a very heavy steel mechanism—so strong you could almost use it as a car jack! The duet-size bench (seats

two) weighs well over 60 pounds. These benches are made of hard rock maple and come in most leg styles and finishes. The deeply tufted tops come in a heavy-duty vinyl and look like leather; tops of actual leather are available at additional cost. Both look great and wear well. The best ones, such as those made by Jansen, are expensive (\$500 to \$750) but are built to last a lifetime. Over the past few years, lesser-quality adjustable benches have come on the market. While these benches are adjustable within a similar range, the mechanisms aren't as hardy. They may be fine for light use, but most will not last nearly as long as the piano.

Legs for both fixed-height and adjustable benches are attached by a single bolt at the top of each leg. These bolts should be tightened anytime there is wobble in the bench. Don't over-tighten, however, as that might pull the bolt out of the leg.



Padded Bench



Wood Top Bench



Stretcher Bench



*Adjustable
Artist Bench*



Finally, if the piano you want doesn't come with the bench you desire, talk to your dealer. It's common for dealers to swap benches or bench tops to accommodate your preference, or to offer an upgrade to a better bench in lieu of a discount on the piano.

Lamps

Having adequate lighting for the piano music is critical. It's hard enough to learn how to read music without having to deal with a lack of illumination, or with shadows on the sheet music. The ideal solution is track lighting in the ceiling just above the player. In many homes and institutions, however, this is not feasible. In those instances, a piano lamp may well be the answer.

Piano lamps fall into two major groups: floor lamps and desk lamps. Floor lamps arch over the piano and hover over the music rack, while desk lamps sit directly on the piano or

are attached to the music rack itself. Desk lamps are subdivided into three groups: a standard desk lamp that sits atop a vertical piano directly over the music rack; a "balance-arm" lamp that sits off to the side on a grand piano's music desk and has a long arm that hovers over the music rack; and a clip-on lamp that attaches directly to the music rack itself (see illustrations).

Piano lamps come in a variety of qualities, sizes, styles, finishes, and bulb types. The better ones are usually made of high-quality brass, while the least expensive are often made of very thin brass or are simply brass-plated. The light from incandescent-bulb lamps tends to be a tad harsh, but the bulbs are less expensive than those for fluorescent lamps, which, though pricier, emit a softer light.

Piano lamps are available through most piano dealerships as well as at lighting stores. A limited selection can also be found at The Home Depot and Lowe's.

Accessories and Problem Solvers

Only a few accessories are used with pianos, and most are available at your local piano dealership. You might consider:

- Caster Cups.** Caster cups are small cups that go under the wheels of vertical and grand pianos to protect the floor or carpet. They come in plastic or a variety of woods, and in clear acrylic that allows the carpet or hardwood floor to show through. If the caster cups have felt on the bottom, however, be careful, as the dye from the felt can bleed into carpeting, especially if it gets damp.
- Piano Covers.** Used mostly in churches and schools (and homes with cats), piano covers are designed to protect the piano's finish from accidental damage, and are available to fit any size of piano. They come in vinyl or mackintosh (a very tight-weave fabric that is very water-resistant), brown or black on the outside, and a fleece-like material on the side that touches the piano. A thicker, quilted, cotton cover is available for use in locations where the piano is moved frequently or may get bumped.





Piano Covers



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Bench Cushions

■ **Bench Cushions.** Bench cushions are made in a variety of sizes, thicknesses (1" to 3"), fabrics, and colors. They are also available in tapestry designs, most with a musical motif, tufted or box-edged, and all have straps to secure them to the bench.

■ **Pedal Extenders.** These extension devices are available for those whose feet do not comfortably reach the pedals. Some are nothing more than a brass pedal that bolts on to the existing pedal, while others are a box, finished to match the piano, that sits over the existing pedals and has pedals with rods to operate the piano's pedals.

■ **Metronomes.** Many music teachers recommend using a metronome to improve students' timing. Any piano or musical-instrument dealership will generally have a wide selection, from the solid walnut, wind-up, oscillating metronome like the one your grandmother had on her piano, to a new, beeping digital model.

■ **Grand Piano String Covers.** Wool string covers are available in a variety of colors that complement the piano's finish. When in place, they provide a reduction in sound volume, and protection against dust (and cats). Thicker sound-reduction covers and baffles are also available.

■ **Lid and Fallboard Slow-Close Systems.** Raising and lowering the lid of a grand piano is frequently difficult, and can be downright dangerous. This is due to the combination of its weight, which can exceed 50 pounds, and its position, which makes it hard to reach. Enter a new product that solves at least the weight problem: Safety-Ease Lid Assist. Safety-Ease consists of

pneumatic cylinders that effectively counterbalance the weight of the lid and damp its movement so that it can be easily raised or lowered, even by a child. It mounts under the lid, between the lid hinges on the piano's rim, is finished in polished ebony to match most pianos, and requires no drilling or permanent installation. This unique system is sold and installed only by piano dealers or technicians. The installed price for small and mid-size grands is \$500 to \$600. More information is available at www.safety-ease.com.

The fallboard (keyboard cover) can also be a danger, not so much for its weight or position,

Pedal Extenders



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Brook Photography

Metronomes



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but for the swiftness of its fall and because, when it falls, little fingers are likely to be in its path. Many new pianos today come with a pneumatically or hydraulically damped, slow-close fallboard. For those that don't, aftermarket devices are available from piano dealers or technicians.

■ **Touch-Weight Adjustment Systems.**


Touch or *touch weight* refers to the pressure required to press a piano key. Too little touch weight, or touch weight that is uneven from note to note, makes a piano action difficult to control; too much touch weight makes a piano tiring to play, and can cause physical problems for the player over time. Touch-weight problems can be caused by poor action design, worn parts in older pianos, or incorrectly dimensioned replacement parts in restored pianos.

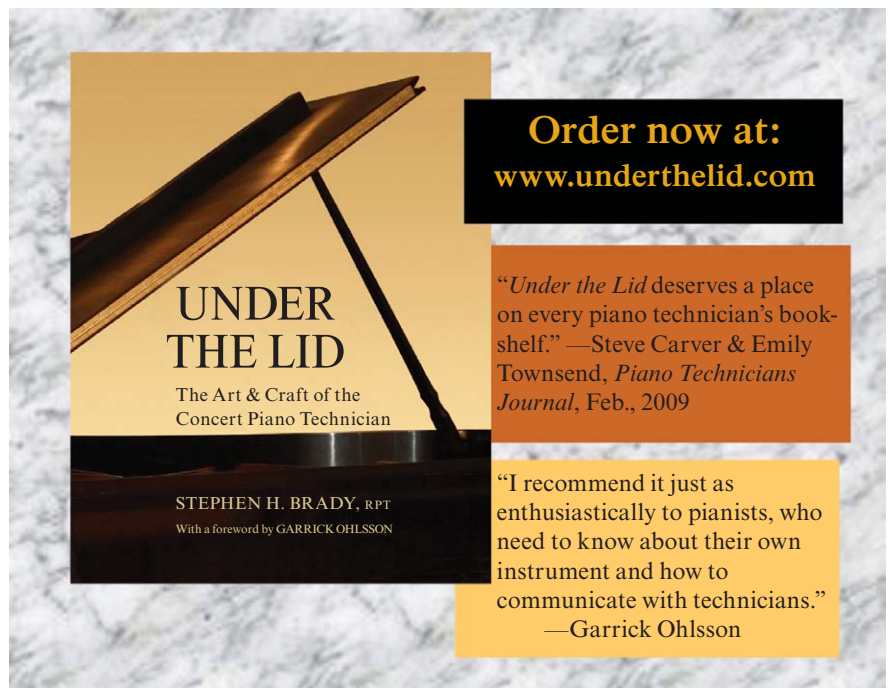
Historically, discussions, measurements, and adjustments in this area of piano technology have been about *static* touch weight—the force needed to make a piano key just begin to move slowly downward. Less well understood, and usually ignored, has been *dynamic* touch weight—the force required to press a key in actual normal, rapid playing. Here, the rapid movement of the key creates *inertia* (i.e., the tendency of a moving mass to keep moving in the same direction and at the same speed, and the tendency of a stationary mass to remain stationary.) Unlike static touch weight, which depends on the *relative* amount and positioning of mass on either side of the key's balance point, as well as on friction, dynamic touch weight depends on the *total* amount of mass in the system. Attempts to fix problems in static touch

weight by adding mass to the front or rear of the key can cause problems with dynamic touch weight by creating excessive inertia.

Until fairly recently, technicians resorted to a patchwork quilt of homemade, trial-by-error remedies for problems with static touch weight; dynamic touch weight wasn't even on their radar. More recently, a greater understanding of touch weight has emerged, and more sophisticated techniques for solving touch-weight problems are being developed. The gold standard among these techniques is that of David Stanwood, who developed the first system for mathematically describing, measuring, and solving problems related to dynamic touch weight. His system is applied by a network of specially trained technicians who, because of the comprehensive nature of the system and the remedies it suggests, tend to use it on higher-end instruments and those undergoing complete restoration. More information can be found

at www.stanwoodpiano.com.

A simpler remedy, but only for heavy or uneven static touch weight on a grand piano, is a product called TouchRail, available through piano technicians. TouchRail is a rail with 88 individually adjustable springs that replaces a grand piano's key-stop rail. The springs press gently on the keys to the front of the balance point, enabling the technician to effectively "dial in" a desired touch weight and make it perfectly even from note to note. Because it's spring-based rather than mass-based, TouchRail won't add inertia to the action system, though of course it won't cure any pre-existing problems with excessive inertia, either. Installation requires no drilling, cutting, or other permanent modification of the piano, and the rail can be removed and replaced in seconds during routine piano service, just like a traditional key-stop rail. The installed price is around \$500. See www.pitchlock.com for more information. 



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"I recommend it just as enthusiastically to pianists, who need to know about their own instrument and how to communicate with technicians."
— Garrick Ohlsson

FOR THIS REVIEW, I asked two professional pianists, Dr. Owen Lovell and Adrean Farrugia, both active members of the Piano World online community, to play and write about the pianos I have labeled as “Group 3” instruments: performance-grade pianos that lie at the less costly end of the price spectrum (for more information on the “Group” rating system, see “[The New Piano Market Today](#),” elsewhere in this issue of *Piano Buyer*.) The task was divided up, and the specific instruments to review were chosen, largely on the basis of which brands and models were available in each reviewer’s geographic area. Permission to audition the pianos was requested from the respective dealers, who were also given the opportunity to prepare the pianos to show their best.

—Editor

Dr. Owen Lovell

The professional pianist or piano teacher shops for an instrument in ways that differ slightly from how a consumer goes about purchasing a piano for casual home use. For one thing, because our job is to continually improve our own and/or others’ playing, it’s our nature to be critical, and find faults in almost any instrument in any price range. Many of us have the pleasure of regularly concertizing, rehearsing, teaching, or practicing on grand pianos of considerable size. It’s unfair but inevitable that we will make comparisons between more sensibly sized instruments for small spaces, and those built with fewer compromises and intended for a concert stage.

For another, when auditioning pianos at a store, pianists generally expect the instrument to be in tune and the action to be in an acceptable state of regulation. It’s impossible to fairly evaluate the tone of an out-of-tune piano or the touch of an action with sticking keys, no matter how

elegant the sales pitch or how glossy the brochure. I tend to be a little less of a shopper driven by price alone; good dealer prep, post-sale support, and a variety of quality instruments to try in-store simply cost a little more. Since we often live with our piano purchases for decades, pianists tend to eschew buying instruments sight unseen, and may return to a store multiple times before making a final decision.

The models reviewed from Group 3 represent a unique range of tonal concepts that you may find more interesting than those of well-respected makes from the Far East. The piano I practice on at home, a tall upright, is a member of this tier of instruments. As there are no piano dealers who currently stock Group 3 brands in my corner of rural Wisconsin, I traveled to the “big city” of Minneapolis, as well as to Rochester, Minnesota, where I was assisted by Ackerman’s Piano Sales, Jim Laabs Music, and Petit Music. Audition material for this review

consisted of solo music from all major stylistic periods: Baroque, Classical, Romantic, Contemporary, and a little jazz.



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PIANOS SINCE 1864

Petrof

Models P-III, P-IV, P-V, and P-135

Petrof’s 5’2” model P-V was surprisingly powerful for its size, with a perfectly even treble register that projected well. The tone was rich, full, and a bit reminiscent of some better U.S.-made Baldwin grands. The action was easy to control, well regulated, and among the better ones I’ve experienced on a small piano. Of course, any short grand will have tonal limitations, and this was evidenced in the model P-V by a lack of low-bass presence, and a mid-tenor section that had a slightly nasal quality. I particularly enjoyed this piano for late Romantic repertoire.

The larger, 5’7” model P-IV seemed well suited for a moderately sized living room; it had some of the tonal virtues of its larger siblings, but a more sensible dynamic range for home use. It also had a characteristic Petrof tonal trait: The treble section had a noticeable bell-like quality, clear and bright. As expected, the bass/tenor transition was handled more smoothly in this instrument than in the smaller P-V model, but could still be detected. Minor quibbles included a little tactile roughness at the corners of the keys, and an action that wasn’t quite as finely regulated as in the other Petrof grands I tried. This piano was particularly at home with French Impressionist repertoire.

The 6'3" model P-III seemed a perfect match for Chopin's music from the moment I started playing it. The bell-like treble sustained and distinguished my melodic lines, while the tenor and bass sections were full, well balanced, and supportive. The dynamic capability and substantial projection of this piano would make it a good candidate for a larger living room, classroom, or small recital hall or sanctuary. Also notable with this newer-production example was a visually striking wood veneer on the inner rim. Again, there was a slight roughness at the corners of the keys, and the action, though certainly fine, was not quite as precise as those of competing Japanese models. However, the sparkling treble tone of this instrument was unique, attractive, and left a lasting impression.

The 53" model P-135, among the largest upright pianos in production today, is a large-sounding instrument for those who don't wish to sacrifice the space required by a grand piano. Interesting features include a true sostenuto pedal (rare among uprights) and a lever-activated practice mute. This upright possessed the tonal attributes of Petrof's grands: the treble section sang beautifully with that signature bell-like sound, while the bass section was smooth and supportive—very capable without being overbearing. Although the action design of an upright piano is less desirable than that of a grand, the P-135's action had a substantial feel to it that would satisfy many advanced pianists. Transitions between registers in this large upright were handled better than in many makers' small grand models.

Charles R. Walter

Charles R. Walter
Models 1520 and 175

It would be easy for a "serious" pianist to overlook the Indiana-made Charles R. Walter model 1520 upright—its furniture-style cabinet and diminutive 43" stature may evoke memories of lesser, marginal-quality American consoles of decades ago. However, playing one was an experience wholly different from what I expected! The tone was full and rich, with a singing quality through the middle range of the instrument. The action was substantial and surprisingly weighty for a small upright, with good control and responsiveness throughout. The dynamic range was very satisfying, belying this piano's small size. It sounded great with lush, Romantic repertoire. As with

PIANO ART

The Alma-Tadema

The original Alma-Tadema Art Case Steinway was created in 1887 and painted by world-famous artist Sir Lawrence Alma-Tadema.

It has been described by Christie's of London as "the most artistic piano ever produced," and it is the most expensive piano in the world—having sold at auction in 1998 for \$1.2 million.

In 2006, Steinway released a one-of-a-kind re-creation of the Alma-Tadema.

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most smaller pianos, the transition through the tenor to the bass range wasn't seamless—I could tell when the sound moved to the wound bi-chord strings—but it wasn't terribly distracting, either. Overall, it would not be an overstatement to say that the Walter upright is the nicest 43" piano I've ever played. It also comes in a 45" version (model 1500)—identical to the 43" except for the cabinet. Either would be a great choice for a practice room, small classroom, or space-limited home.

The 5'9" model 175 grand was the tonal opposite of the European pianos I auditioned for these reviews. The sound was more rounded, with less of a sense of attack. When pushed to its dynamic limits, the 175 didn't sound edgy, bright, or percussive. It produced a healthy orchestral *forte* in Beethoven sonatas that seemed to work well stylistically. Also notable was a low-bass tone that was unusually clear for a piano of this size, and a uniquely designed system for adjusting the angle of the music desk. I perceived the action to be on the heavy side (note: due to psychoacoustic effects, a pianist's perception of the tone as "dark" can contribute to an action's seeming "heavy"), but it rewarded good technique with responsiveness. Minor nits to pick included a very stiff damper pedal spring, and a slightly perceptible tenor/bass transition among an otherwise very even-sounding scale. The Walter seemed like a particularly good instrument for chamber music, vocal accompaniment, or solo use in a living room of small or moderate size.

Schimmel
Model C182

SCHIMMEL
PIANOS

Vogel
Model V177

V O G E L

The Schimmel C182 and Vogel V177 grands are nearly the same size (6'

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and 5'11", respectively), both belong to the Schimmel family of brands, and they share similar-quality parts. The price of the Vogel is lower, likely the result of cheaper Polish labor, but are these pianos essentially the same?

The C182, part of Schimmel's Classic series, was an impressive and dynamic performer with the tone quality many associate with the Schimmel brand: clear and clean, with a unique sense of brightness. The tone of this piano was particularly smooth and uniform from top to bottom. The action was precise, responsive, and made my technique sound more refined than I probably deserve. While auditioning this instrument, another pianist thought the touch a bit shallow, while I likened its feel (though not the sound) to that of a Bösendorfer. The clarity of this instrument worked well for many types of music: Baroque counterpoint, highly ornamented early Classical pieces, jazz, even Prokofiev. It probably wouldn't be my instrument of choice for Brahms. Like the Petrof P-III, the projection and dynamic potential of the Schimmel

C182 should make it a good choice for larger living rooms, classrooms, and smaller sanctuaries or halls.

From the first set of scales I played across the Vogel Model V177, it was obvious that this piano was closely related to the Schimmel C182. The tonal characteristics were similar—the distinctive Schimmel brightness was easily revealed, though the Vogel's sound quality was less tightly focused. The key dip on the V177 seemed deeper than on the C182 and the action was reasonably responsive and even. As with many sub-6' pianos, the bass/tenor transition was slightly detectable, and the Vogel lacked the absolute low-bass authority of larger instruments. The Vogel's narrower dynamic range and more diffuse tonal palette would seem to better suit it to medium-size living rooms than to large spaces.

Since individual pianos—even instruments of the same model—can vary, I advise anyone considering buying a Schimmel C182 to also try the Vogel V177, and vice versa. Your perception of their similarities may favor purchasing the less

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Brand

(in order of

increasing size)

	Model	Size	MSRP*	Suggested Maximum Price*
Charles R. Walter	1520	43"	\$15,241	\$11,610
W. Hoffmann	T122	48"	\$12,400	\$11,900
Schulze Pollmann	126/P6	50"	\$15,590	\$15,590
Bohemia	132	52"		\$14,080
Petref	P-135	53"	\$31,425	\$26,140
Petref	P-V	5'2"	\$51,075	\$41,860
Petref	P-IV	5'7"	\$55,000	\$45,000
Charles R. Walter	175	5'9"	\$57,893	\$41,100
Vogel	V177	5'11"	\$33,390	\$31,380
Schimmel	C182	6'	\$41,790	\$38,980
Bohemia	185	6'1"		\$39,940
Petref	P-III	6'3"	\$57,525	\$47,020
Schulze Pollmann	197/G5	6'7"	\$56,190	\$56,190

*See "Model & Pricing Guide" for more detailed explanation of pricing.

expensive Vogel; then again, their differences could be noticeable enough to justify the higher price of the Schimmel.

Dr. Owen Lovell is an Assistant Professor of Piano at the University of Wisconsin–Eau Claire. He concertizes frequently as a soloist, chamber musician, and advocate of new music. Visit his website for more information at www.owenlovell.com.

Adrean Farrugia

Talking about pianos from a performer's perspective is bound to be problematic. The best one can do is offer a set of subjective impressions in which one has tried to articulate the almost indescribable experience a pianist has when he or she sits down and connects with an instrument. I had a lot of fun playing these instruments and trying to get a feel for what makes each unique. As with all pianos, whether the characteristics of these brands will be perceived as merits or weaknesses will greatly depend on the individual player's tastes and needs. That said, all three brands of piano I sampled were very good performance-grade instruments, and had been well

prepared by their respective dealerships. I would have no reservations about recommending any of them to anyone—whether the beginner pianist who wants a great instrument to grow into, or the seasoned professional who needs a piano that can handle any music thrown at it.



Schulze Pollmann

Models 126/P6 and 197/G5

My first trip was to Merriam Music in Oakville, Ontario, where I played two pianos by the Italian maker Schulze Pollmann: a 50" model 126/P6 upright and a 6'7" model 197/G5 grand, both finished in polished ebony. The upright had a big sound, with a light and responsive action that permitted easy execution of fast passages and good dynamic control. The tone is best described as bright with somewhat mellow undertones, and very transparent. This quality of tone was very consistent, not only throughout the instrument's keyboard range, but across a wide dynamic range as well. While many pianos sound quite different when played *pianissimo* than they do *fortissimo*, these pianos seemed to

maintain their basic tonal character across the board.

The grand model, not unlike its smaller upright brother, had a very clean, transparent, and consistent sound across both the tonal and dynamic ranges of the instrument. The bass had a lot of depth for a 6'7" piano, and the treble range was bright and crystalline, with good sustain. The action was wonderfully light and responsive, which made playing fast *legato* passages very easy. The sound opened up very quickly, requiring a bit of skill to get the instrument to sing softly. Schulze Pollmann pianos are very versatile instruments that lend themselves well to a wide range of styles, from classical to jazz to popular music. They may appeal to a player who favors a more "pure," "clean" tone over one enveloped by a wider range of harmonic overtones.

W.HOFFMANN

W. Hoffmann

Model T122

My next stop, Cosmo Music in Richmond Hill, Ontario, is the official Bechstein selection center for Canada. It was there that I played a W. Hoffmann 48" model T122 upright in polished ebony, part of the W. Hoffmann "Tradition" series, made at a Bechstein factory in the Czech Republic. Not unlike its far more expensive C. Bechstein and Bechstein Academy cousins, this W. Hoffmann had a very rich but clean sound, with pearl-like trebles and a singing tonal quality. The tone was even and consistent across the range of the keyboard, with an almost unnoticeable break between the bass and tenor regions. When I played loud, sustained chords, the sound bloomed colorfully, first emphasizing the fundamental tones and then evolving into a warm, complex set of harmonic overtones. The action was

very responsive and tactile, giving me a high level of control in the execution of a wide range of dynamics and clean, fast *legato* passages.

One reservation many pianists have about buying an upright instead of a grand is the sacrifice that must be made in the speed of single-note repetition. On this particular model, however, the ease at which I could quickly repeat a single note was quite impressive. The W. Hoffmann T122 upright would be a good choice for those who want a piano with very good action and a rich, “Bechstein-like” European sound, but at a price that doesn’t break the bank. This model should provide great value for the money.



Bohemia

Models 185 and 132

My third and last stop was at Remenyi House of Music, on Bloor Street in downtown Toronto. They have a wide selection of pianos ranging from Steinway & Sons and Boston to Sauter, Seiler, and Bohemia. The two models I played were a Bohemia 6'1" model 185 grand and a 52" model 132 Concerto upright, both in polished ebony.

Both models had dark, brooding voices, lyrical in nature and rich in harmonic overtones. When played loudly, the sound opened up into a powerful roar, but never became strident and distorted. Soft passages, particularly on the grand model, rang with a sweet, almost reed-like quality.

Also standing out was these pianos’ very impressive sustain. With both instruments, I found it very satisfying to play a *mezzo forte* six- or eight-note chord spanning the lower-middle to high registers, then listen to the sound slowly bloom and fade. When playing a single-note

passage ascending from the bass register into the tenor, I could hear the tonal character change at the break a bit more noticeably than with some other instruments at this price point. However, this was hardly noticeable when I played two-handed or chordal passages.

The upright’s action felt very solid without being stiff, and with an almost springy character that easily permitted fast repetition of a single note. The grand’s lighter action was very responsive, and consequently somewhat unforgiving. This action was designed to do precisely what the player asks of it. However, as with a high-performance sports car, there can be a bit of a learning curve to obtaining a sense of full control over this instrument.

These pianos should provide solid, viable alternatives for those looking for an instrument with a sound that differs from that of the more typical American or Japanese instruments. Bohemia pianos easily handle any style of music, but do so with a characteristic sound that is unique and refreshing.

With such a wide array of distinctly different pianos on the world market today, there are many possibilities for every type of taste and budget. As a pianist, I’m always excited to play an instrument I’ve never tried before. Each piano, with its own unique personality, beckons the player to look for that place within that resonates with that particular instrument. When all is said and done, it just might be that the piano also “plays” its player. That’s what makes the connection between pianist and piano such a wondrous thing. 🎹

Pianist and composer **Adrean Farrugia** has been a vital member of the North American jazz scene for almost 15 years. He has performed

and recorded with such luminaries as Curtis Fuller, Randy Brecker, Bob Brookmeyer, and Matt Dusk, in New York, Chicago, Paris, Tokyo, and Toronto. He serves on the music faculties of York University, in Toronto, and Mohawk College of Applied Arts and Technology, in Hamilton, Ontario. Visit his website at www.myspace.com/adreanfarrugia.

Thanks to the following dealers for their participation in this review:

Ackerman’s Piano Sales,

Burnsville, Minnesota

(Charles R. Walter)

Cosmo Music, Richmond Hill,

Ontario (W. Hoffmann)

Jim Laabs Music, Arden Hills, Min-

nesota (Petrof, Schimmel, Vogel)

Merriam Music, Oakville, Ontario

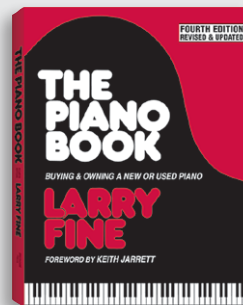
(Schulze Pollmann)

Petit Music, Rochester, Minnesota

(Petrof)

Remenyi House of Music, Toronto,

Ontario (Bohemia)



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IF, AFTER HAVING READ “**Acoustic or Digital: What’s Best for Me?**,” you’ve decided on a digital piano, the next step is shopping for and selecting the right model for your needs. There are currently over 200 models of digital piano on the market. Narrowing the field requires exploring some basic issues. This article covers the needs of both entry-level shoppers and those interested in more sophisticated, feature-laden models. If you’re looking for an entry-level instrument and are just interested in learning the basics, you can read “The Starter Digital Piano” below, then skip to “Shopping Options,” toward the end of this article.

The Starter Digital Piano

If nothing else, a digital piano should be able to emulate an acoustic piano in basic ways. Fulfilling this function requires features found on most digital pianos today. Some first-time buyers, however, opt for an instrument with more than just the basics, and buy a model with additional sounds and “easy-play” features.

Matching the Player’s Needs. Unless you expect to buy another piano in a year or so, you need to consider your long-term requirements. Who will be the primary player today? If it’s for the family, how long will it be until the youngest child has the opportunity to learn? Does Mom or Dad harbor any musical interests? If so, it’s likely that one family member or another will use the instrument for many years to come. This argues for getting a higher-quality instrument, whose advantages of better tone, touch, and features will be appreciated over time.

If multiple players will use the instrument, it needs to meet the expectations of the most advanced player. At the same time, a beginner in the family will benefit from educational

features that are of no interest to the advanced player, and still another family member may just want to fool around with the instrument once in a while. Easy-play features and software will keep these players happy—and you might be surprised how many people are enticed into learning to play as a result of these easy first steps. So, obviously, an individual player may search among a very narrow range of instruments, while a family may have to balance the needs of several people. Fortunately, the wealth of available choices can easily accommodate any combination of individual and/or family needs.

Voices and Expanded Capabilities. Most entry-level digitals have a few different piano voices, as well as a dozen or so other instrumental voices, such as harpsichord, church and jazz organ, vibes, and strings. These models, designed mainly to emulate the piano, are referred to as “standard” digital pianos. Many other,

slightly more expensive models, called “ensemble” digital pianos, come with expanded capabilities: all the instruments of the orchestra (and more), easy-play background accompaniments, rhythms, special effects, and much more. You might not think you need the additional capabilities of an ensemble digital, but having them can enable the beginner, as well as family members who don’t take lessons, to have a lot more fun and sound like pros with minimal practice. For an advancing player, the opportunities for musical creativity are significantly enhanced.

If at all possible, you should try at least two or three instruments in your price and style range to determine which sounds best to *you*. If you plan to use headphones in your home (yes, parents—your children can practice silently using headphones), be sure to try out the pianos

through headphones, as this can make a tremendous difference in sound. (For consistency of comparison, bring your own headphones.) Sometimes the instrument’s weakest link is its built-in speaker system.

88-note Weighted Keyboard. Even entry-level digitals should feel much like an acoustic piano. If you have some playing experience, you’ll want to try two or three competing models to see what feels best to *you*. None of the available models has an overly heavy touch. So-called semi-weighted keyboards, which depend on springs for their weight,

Is a keyboard with fewer than 88 notes a viable alternative? In a word, no.



Slab type



Console type



Digital grand

should be avoided, as they don't feel enough like an acoustic piano. Is a keyboard with fewer than 88 notes a viable alternative? In a word, no. None have a decently weighted keyboard. In addition, students who use instruments with short keyboards tend to outgrow them quickly, and suffer some degree of disorientation when taking lessons on an 88-note keyboard.

Ease of Use. Make sure you understand how the instrument's controls work—additional features are of little use if you can't figure out how to use them. Ask to see the owner's manual (or download it from the manufacturer's website) and make sure that it's understandable.

Cabinet Type. Another factor that may shape your options is where the instrument will live. Is space at a premium? Are there limited placement options? If home is a dorm room or a small studio apartment and you need to make the most efficient use of every square inch, you may opt for a portable model (not a

furniture-style cabinet) that can be placed on a stand for practice and stuck in a closet when not in use. Bear in mind that this type of design, typically called a slab, doesn't necessarily limit the quality of instruments available to you—professional stage pianos also fit into this category. Slabs generally come with a single pedal, but many have optional stands that, like an acoustic piano, have three pedals. If you do go with a stand, don't get the cheapest one you can find. These are fine for 61-note portable keyboards, but tend to wobble when supporting the greater weight of a digital piano, and may not be able to be adjusted low enough to put the keyboard at the proper height from the floor (about 29 inches to the tops of the white keys). It should be noted that *portability* is a relative term: instruments in this category can range in weight from 25 to over 70 pounds, without stand.

Another option in the entry-level category is what is variously referred to as the vertical, upright, or

console digital piano. The cabinetry of these models ranges from two flat side supports with a cross member for stability, to elegant designs that would look at home in the most posh surroundings. It's common for individual models in this category to be available in multiple finish options, including synthetic wood grain, real-wood veneers, and, on some of the better models, the lustrous polished ebony often found on acoustic pianos. Most of these models have three pedals.

If space is no problem and you love the look of a grand piano, several digital pianos are available in "baby grand" cases. Remember that, most of the time, you pay a significant premium for this look, and that few of the digital grand models actually use the additional internal space to enhance the instrument beyond the non-grand model it's based on. There are two size classes of digital grands, one about five feet long and the other closer to three feet—just long enough for the tail to curve in a quasi-grand shape.

Additional Features. Virtually all models of digital piano include headphone connections for private practice, and MIDI and/or USB connections that allow you to connect the instrument to a Mac or PC for use with a variety of music software. Other features included in many entry-level instruments are a built-in metronome, the ability to play more than one instrumental voice at a time (called *layering* or *splitting*; see “**Digital Piano Basics**”), and the ability to record and play back anything you play. While you may not be ready for a recording contract, the ability to listen to what you’re practicing is a great learning tool.

Pricing. Slab models start at \$500, console models at around \$1,000. Digital grands begin at about \$1,500, but the better-quality models start at around \$5,000. In each category there are many options; spending more will usually get you some combination of better sound, features, touch, and appearance.

Those who are shopping for an entry-level digital and want to keep it simple can skip the next section and go directly to “**Shopping Options**.”

Further Considerations for More Serious Shoppers

Before reading further about shopping, I suggest that you read the two “**Digital Piano Basics**” articles, and explore the **brand profiles** and the **charts of features and specifications**, all elsewhere in this issue. There you’ll find detailed information about the features and benefits of both standard and ensemble digitals. Once you have a grasp of what these instruments can do and how they differ from one another, you’ll be able to shop with a better idea of which features and level of quality you desire, which in turn will make your shopping

efforts more efficiently focused and enjoyable.

Serious Listening

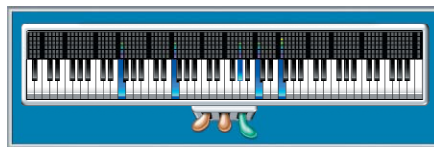
You’ve decided what type of instrument you’re looking for and how much you’re going to spend (unless, of course you hear something that just knocks your socks off, and your budget along with them). There are still a couple of last steps in preparation for the hunt.

If you don’t already have a good set of headphones, this is the time to get them. Headphones are probably the most widely used accessory for digital pianos, and it’s a sure bet that you, or another player in the house, will need them or wish the other player were using them—and they’re an invaluable tool for auditioning digital pianos. Part of what you hear when you compare instruments is the speaker system, and this is a critical element; but headphones can also isolate you from noise in the store and give you a common baseline as you go from place to place trying different instruments. Most

stores have headphones available, but they’re typically low-end models, and never the same as the ones you listened to in the last store. I’ve always found it odd that people will agonize over the choice of a digital piano, spend hundreds—frequently thousands—of dollars on their choice, and then listen to it through \$19.95 headphones. (See “**Digital Piano Basics, Part 2**” for a discussion of headphones.)

The final step is to “calibrate” your ears. Listen to recordings of solo piano. Listen to what you enjoy, be it jazz, classical, or ragtime—just listen a lot. For part of this listening, use the headphones you bought for your digital piano. This will embed in your head, as a benchmark, the sound of high-quality acoustic pianos. One of the great things about digital pianos is that if you love, say, honky-tonk piano, all you have to do is make sure the instruments you’re considering have a Honky-Tonk setting. Then you can “change pianos” at will. But for the moment, listen to the best piano recordings you can get your ears on.

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When you start to audition instruments, you'll become aware that some of what you're hearing isn't the instrument, or at least not what the instrument is supposed to do. Part of what you'll be hearing is the result of room acoustics and the instrument's placement in the showroom. If there are a lot of hard surfaces nearby—uncarpeted floors and large windows—the results will be different from what you'll hear in a "softer" environment, such as a carpeted living room with drapes, bookshelves, and upholstered furniture. Placement in the room will also affect the sound. If you're serious about buying a particular instrument, asking the dealer to move it to another part of the showroom isn't an unreasonable request. Another thing to be aware of is that the voice settings of most digital pianos include some degree of reverberation. This isn't a bad thing, but it's worthwhile to listen to the piano voice, and any other voices that are important to you, with the reverb and all other effects turned off. This will allow you to judge those voices without any coloration or masking from the effects.

Evaluating Tonal Quality

Almost by definition, evaluating an instrument's tone is very subjective, and judging the tone of instruments that have a lot of voices can be overwhelming. Your best bet is to select the five or six instruments you think you'll use most and make them the standard for comparison as you shop. If you choose the piano on which those voices sound best to you, it's likely you'll find the others satisfying as well.

Digital pianos are really computers disguised as pianos, and the engineers who design them strive to develop a set of sounds and features unique to their brand. Like some features of a PC, many of the capabilities of digitals are hidden from view, accessible by pressing a sequence of buttons or through multi-screen menus. While the owner's manual will explain how to access these features or sounds, it's impractical for you to study the manuals of every instrument under consideration. Enter the salesperson! This is one of those instances where a well-trained salesperson can be invaluable.

Most manufacturers arrange trainings for their retailers' sales staffs, to enable them to demonstrate the relative advantages of that brand's features. Even if you're a proficient player, having a salesperson demonstrate and play while you listen can be a valuable part of the evaluation process. But remember that the salesperson is not going home with you! Don't be swayed by his or her talent—a really good player can make even a poor-sounding piano "sing." Focus your attention on the instrument itself.

You should make sure that you get the answers to a few key questions, either through the salesperson's demonstration or your own experimentation:

Generally, one of the instrument voices used most frequently is the piano. There is a great deal of variation in "good" piano tone. Many players like a bright, crisp sound, while others prefer a mellower tone. Some like a great deal of harmonic content, others a bell-like clarity with fewer harmonics. Whatever your preference, will you be satisfied with the piano sound of the model you're considering?

Many instruments sound slightly different as a note begins to play. For example, a flute takes a quarter of a second or so to build up enough air pressure to reach the pitch of the note, resulting in a "breathiness" to the sound. The same is true of many other wind instruments. Guitarists and other players of stringed instruments "bend" notes by varying their touch. Jazz organs often have a percussive "pop" at the beginning of the note. How well do the digital voices of the model you're evaluating emulate the actual instruments?

Even entry-level standard digitals include such effects as Reverb and Chorus. More sophisticated models have many other effects, as described in the "**Digital Piano**



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IS THAT REALLY WOOD?

In the world of the acoustic piano, wood is a critical component that affects the instrument's fundamental tonal and mechanical properties, as well as its appearance. However, wood is not a required ingredient of digital pianos. The use of wood in digitals is primarily cosmetic and structural, such as in the keybed (which supports the action) and bracing. (Exceptions, such as wooden keys, are dealt with in "[Digital Piano Basics, Part 1](#).") The stand or cabinet may be covered with artificial wood veneer, and even if the veneer is of real wood, the furniture core is typically made of an engineered wood product such as medium density fiberboard, or MDF. A staple of the furniture industry, MDF provides a rigid, stable material of which to build all manner of long-lived products.

Basics" articles. Having heard them demonstrated, do you think these effects will be useful to you?

Take your time. Following the salesperson's demonstration, most dealers will let you spend time experimenting—although some may prefer that you use headphones.

Evaluating Touch

Aside from sound, the most important element in the selection of an instrument is likely to be the feel of the action. Unless you're considering only digital pianos that employ an actual acoustic action (see "[Hybrid Pianos](#)," elsewhere in this issue), you'll be selecting from a variety of actions that all try to emulate the feel of an acoustic action. The aspect of action feel that seems to generate the most discussion is whether the touch weight is light or heavy, and which is better. This is covered in more detail in "[Digital Piano Basics, Part 1](#)," but here's the

bottom line: Just as there is no single correct piano sound, there is no single correct touch weight; rather, there is a range of acceptable touch weights. If you spend the majority of your playing time with a heavy action, when you encounter an instrument with a lighter action, be it acoustic or digital, you'll play too heavily—and vice versa. The only cure is to play as many instruments as possible, as often as possible. Listen to how each piano responds and adjust your touch accordingly. You've probably driven cars with light steering and cars with heavy steering, and generally managed to avoid hitting any trees with either of them. With varied experience, you learn to adapt.

Common to acoustic and digital actions is mechanical noise. Digitals are frequently accused of having noisier actions because their sound can be reduced to a whisper or played through headphones, leaving the action noise audible, whereas the sound of an acoustic piano tends to always mask its action noise. This is not to say that some digital actions aren't unusually noisy, but to honestly compare them, you have to play them with the volume turned off. In addition to letting you compare action noise, this prevents your mind from judging the *feel* of an action based on the *tone* of the instrument.

New or Used?

Because digital technology advances at a blistering pace relative to acoustic-piano technology, there is much less interest in used digitals than in used acoustics. Many of today's digital pianos eclipse the capabilities of the models of even five years ago. Combine this technological advancement with the fact that support of older instruments may be limited—after production of a particular model ceases, electronics manufacturers are required to maintain replacement parts for only seven years—and

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investing in older models becomes worthy of serious second thoughts.

Owner's manuals no longer accompany many used instruments. If you find an interesting used instrument, make sure that the manual is either still with it, or is readily available from the manufacturer or on the Internet. The manual is your best tool for ensuring that everything on the instrument still works correctly. It's not simply a matter of pressing every key, button, and pedal to see that they work; to thoroughly check the instrument, you also need to know what some of the less obvious controls are supposed to do. None of this is to say that used instruments should be avoided—I've played ten-year-old digital pianos that worked perfectly. But when considering an older digital piano, extra care should be exercised.

Shopping Options

Your shopping options depend on the type of digital piano you've

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decided to buy and the region you live in. In North America, different categories of instruments are available through different types of outlets. Furniture-style models, particularly the higher-end models manufactured by the largest suppliers, are available only through traditional bricks-and-mortar piano or full-line music retailers. The lower-priced furniture-style, slab, or stage models, and some of the less widely distributed brands, are available from a cross section of traditional bricks-and-mortar music retailers, club and warehouse chains such as Costco, consumer-electronics chains such as Best Buy, and online retailers.

Perhaps the biggest difference between shopping for digital and acoustic pianos is that you usually want to make sure you get the specific acoustic piano you played on the showroom floor. But once you've decided on a model of digital piano, it doesn't matter if you get the one you actually tried or not. Every unit made of the same model will be identical to all other units.

Negotiating the price of a digital piano at a bricks-and-mortar retailer is no different from negotiating the price of an acoustic piano,

which is discussed in “**Piano Buying Basics**,” elsewhere in this issue. However, many of the simpler furniture-style digitals and nearly all portable or stage-piano models that are sold through a variety of local and online stores are virtually always sold at the same price, wherever you shop. This is due to a pricing model called minimum advertised price, or MAP, used for many categories of products. A manufacturer's or distributor's MAP is the lowest price at which a dealer is allowed to *advertise* an item. Since prices are easily compared and all retailers want an even chance to win your business, everyone advertises at the MAP. And since the MAP is typically lower than the price at which the dealer might have preferred to sell the item, the price almost never drops below the MAP. Therefore, MAP has become the standard pricing for all non-piano-dealer models of digital piano.

You should find out how warranty service is handled for the instrument you've selected—not only the terms related to coverage for parts and labor, but where the service is performed. Like acoustic pianos, most digital models available

only through piano dealers have a warranty specifying in-home service; that is, the technician comes to you. Models sold outside of traditional piano stores must be brought to the technician's shop for warranty service. Ask your salesperson where the closest authorized service technician is located, or check the manufacturer's website.

You can see from the chart of digital piano specifications that it's not unusual for different models from the same manufacturer to have different warranty terms. It would be tempting to attribute this to differences in quality, but most often it's based on differences in anticipated use (home vs. commercial), and on marketing decisions for a given product segment. Unlike some warranties for acoustic pianos, I'm aware of no digital piano warranty that is transferable to a subsequent owner.

There are many decisions to be made when selecting a piano, digital or acoustic. But in the end, there is no substitute for playing and listening for yourself. The best anyone else can do is tell you what he or she would buy. But unless that person's requirements exactly match your own, all you'll end up with is a piano that's perfect for someone else.

Go out and try everything you can get your hands on—and enjoy the process! 🎹

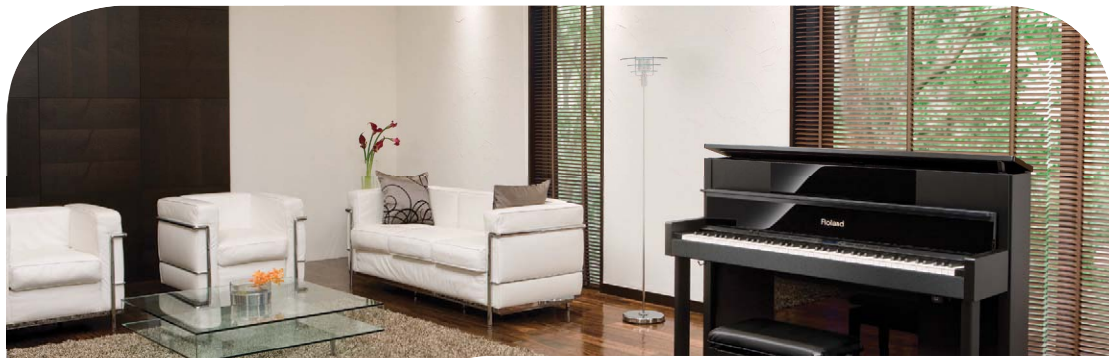
For more information

If, after reading the articles in *Piano Buyer*, you still have questions about buying a digital piano, I recommend visiting the Digital Pianos—Synths & Keyboards Forum on Piano World (www.pianoworld.com), the premiere website for everything related to pianos and pianists. The helpful folks there have a wealth of knowledge and advice they are happy to share.



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IN PART 1 OF THIS ARTICLE, we describe how a digital piano performs its most basic function—imitating the acoustic piano. We begin with tone production, then move on to controls—the keyboard and pedals—and conclude with the instrument’s audio system. In Part 2, we explore all the ways that digital pianos can go beyond simply duplicating the functions of the acoustic piano.

Tone Production

Sample Rate and Bit Rate

The technology now used in most digital pianos to emulate the complex tonal behavior of the acoustic piano is called *sampling*. Sampling, in its simplest form, is the process of making a digital recording of a sound for later playback. A collection of samples, such as those needed to reproduce the tone of a piano, is called a *sample set*. There are many decisions to be made in compiling a sample set for an instrument as sonically complex as a piano, perhaps the most important being the *sample rate* and *bit rate*.

The *sample rate* determines how many times per second the sound will be measured. The sound must be sampled often enough to avoid missing changes that occur between sample times. This rate, in turn, depends on the frequency of the sound being sampled. The fundamental frequency of the highest note on the keyboard is 4,186 cycles per second, or hertz (Hz). But the overtones that accompany these fundamentals vibrate at multiples of the fundamental’s

frequency, and must be properly recorded in order to accurately reproduce the tone. Fortunately, the inventors of the Compact Disc were well aware of this requirement, and long ago adopted the sampling rate of 44,100Hz for audio CD recordings.

The other decision is how finely to measure at each of those 44,100 times per second. Just as we don’t want to miss changes in the sound that occur between the times we measured it, we also can’t afford to miss the details of those changes. In digital recording, this is called the *bit rate*, or, as recording pros call it, the *bit depth*. The higher the bit rate, the

finer the detail that can be recorded. In computers, an 8-bit number represents up to 256 levels of detail, a 16-bit number can represent 65,536 levels, and a 24-bit number tops out at 16,777,216 levels. Once again, we will bow to the decision of the developers of the Compact Disc and go with the choice of a 16-bit number as our standard.

What all of this means is that, under the audio-CD standard, every second of sound sampled is measured 44,100 times at a degree of detail that can represent up to 65,536 individual levels. This one second of sample information takes up just over 86 kilobytes (KB) of memory space. Because digital piano manufacturers do not release information about their sampling standards, there’s no basis for comparison with the audio-CD standard. However, the rates stated by developers of software pianos tend to be higher than this standard, so it’s reasonable to assume that some digital piano manufacturers may exceed these rates as well.

Looping

One interesting characteristic of a piano note is that it can sustain for several seconds, but after the first couple of seconds much of the initial complexity of the sound is gone; the remaining seconds of sustained sound go through very little change other than gradually decreasing in volume. This opens up the



Bösendorfer mic'd for sampling

Vienna Symphonic Library

possibility to save some memory space, and thus some money, by introducing a process called *looping*. Looping involves selecting a short duration of the sound that remains essentially unchanged over a period of time, and repeating it over and over at gradually reduced volume levels. Done with care, the result is barely detectable when listening intently to the sustain of one note, and becomes completely lost in the commotion when playing normally.

Spatial Relations

The notes produced by an acoustic piano have a physical point of origin in the instrument's strings, and can be heard moving from left to right as you play a scale from the left (bass) end of the keyboard to the right (treble) end. To preserve this spatial relationship, the samples in a digital piano are recorded in two-channel stereo. This feature, often called "panning," adds to the realism by physically positioning the sounds in ways similar to what is heard from an acoustic piano.

Number of Notes Sampled

Now we must decide how many notes to sample. The obvious answer would seem to be "all of them," and some manufacturers take this route. But in the interest of keeping the cost of the digital piano under control, many manufacturers seek alternatives to sampling all 88 notes.

In an acoustic piano, the tonal behavior of the longer, bass strings is different from that of the shorter, treble strings. In fact, this tonal variation goes through several changes as you play up the keyboard from the bottom. Some of these changes are due to the differences in string length, others to differences in the types and numbers of strings associated with different ranges of notes. In the lowest bass, the hammers strike a single string per note. This

string is wrapped with heavy copper wire to slow its rate of vibration to produce the proper pitch. Depending on the piano's scale design, a couple of octaves up from the bottom of the keyboard it switches to two strings per note, each wound with a lighter copper wire. Finally, by mid-keyboard, three plain-wire strings are used for each note. (Each set of one, two, or three strings per note is known as a *unison* because all the strings in a given set are tuned at the same pitch to sound a single note.) The subtle changes brought about by these different string arrangements also figure in the tonal variations we hear as we move up and down the keyboard.

But the tonal changes from one note to the next are not always noticeable; sometimes, all that changes is the pitch. It turns out that it's a fairly simple matter for the digital piano to play back a sample at a different pitch. This makes it possible to save memory space by using one sample as the basis for two or three consecutive notes. Taken too far, this would result in obvious tonal problems. But if at least a third of the notes are sampled, with careful attention to areas of the keyboard where there are more noticeable changes, these shared samples can produce a convincing, if basic, tonal progression.

Sampling Dynamics

One more source of tonal variation—the effect of dynamics (variation in volume or loudness)—must be dealt with before we move on from our basic sample set. Striking a string harder results in a larger number and greater prominence of higher overtones, which, in addition to making the sound louder, give the tone more

"edge." Currently, in all but the least expensive instruments, digital pianos use from three to five dynamic samples. As you play with varying degrees of force, the digital piano selects the closest appropriate dynamic sample for playback. Entry-level pianos that use a single sample level for dynamics also use variable filtering of a note's overtones to simulate these tonal differences, sometimes with remarkable success.

Sampling Other Effects

Many digital pianos incorporate additional types of samples aimed at capturing more of the nuance of an acoustic piano. At this time, the two most common such samples are *string resonance* and *damper effect*.

As with so many features, different manufacturers seldom use the same terms for the same effects. String resonance is related to the strings' overtones. Each of the overtones generated by a vibrating string are at, or close to, the fundamental frequencies of higher notes whose frequencies bear a mathematical relationship to the one played. This results in a weak sympathetic or resonant vibration of the strings of the related notes, and adds another dimension to the sound. (To hear this effect, slowly press the keys of a chord—for this discussion, let's make it a C chord—without actually sounding them. While holding these keys down, quickly strike and release the C an octave below the held chord and you'll hear, faintly, the sympathetic resonance of the C chord above.)

In an acoustic piano, a note's felt damper moves away from the string(s) when its key is depressed, and returns to stop their vibration when the key is released. The effect on the

Many digital pianos incorporate additional types of samples, capturing more of the nuance of an acoustic piano.

OTHER METHODS OF VOICE PRODUCTION

Before sampling became commercially viable (i.e., affordable—when introduced, the first sampling instruments cost as much as a small house), various forms of “synthesis” were used to produce electronic music. Oscillators, filters, modulators, envelope generators, and other electronics worked together to make sounds never before heard, as well as sounds that vaguely mimicked those of familiar acoustic instruments. The classic model was Robert Moog’s modular synthesizer of the late 1960s and ’70s—the instrument that allowed Wendy Carlos to produce *Switched-On Bach*. Some of today’s digital pianos retain the ability to modify their voices in much the same manner as these early synthesizers.

Looking at a currently emerging technology, we find a method called *physical modeling*. While modeling has been used before in software-based pianos, last year Roland released the V-Piano, the first digital piano to rely solely on this technology. More recently, Yamaha unveiled its new CP stage-piano line, which mixes modeling and sampling technologies. Modeling breaks down an instrument’s sound into discrete elements that can be represented by mathematical equations, or algorithms. In the case of the acoustic piano, these algorithms represent the behavior of the primary elements that affect the tone—hammers, strings, soundboard, and dampers. Whereas in sampling, a preexisting sample is retrieved from the piano’s memory, in modeling the tone is created in real time, based on a complex series of calculations. Sampling requires large amounts of memory for storing high-resolution sample sets, whereas modeling requires powerful processors to instantaneously make the many calculations needed to produce a given note.

sound is not instantaneous; it takes a fraction of a second for the strings’ vibration to stop. During this time the tone is altered as its overtones rapidly decay. Damper-effect samples are triggered by releasing a key, and add another subtle dimension to the digital piano’s sound.

Polyphony

Finally, we have to consider how many notes the instrument can play at once, which is expressed as its *polyphony*. A quick glance at your hands may suggest that 10 ought to be plenty. But consider what happens when you play a series of chords, or an arpeggio, while holding down the sustain pedal. Each note that continues to sustain takes up one note of polyphony. If you press the sustain pedal and play a three-note chord with both hands, then repeat those chords three more times in successively higher octaves, you will now be sustaining 24 notes. Played with layered voices (a combination of two different voices, such as piano and strings), that example would require 48 notes of polyphony. Some models of digital piano have 32 notes of polyphony, but most current models have 64 or more.

A cautionary note: As you delve into the specifications of digital pianos, the temptation to rank instruments based on numbers—how many notes were sampled, how much memory the sample set takes up, and so on—will be high. And the results would be highly unreliable. Designing a digital piano involves choices driven by economics (e.g., how much a model will sell for), by the intended customer’s needs (beginner or professional), and, in no small part, by the engineering talent at the manufacturer’s disposal. Engineering creativity, or lack of it, can turn the numerical specifications on their head, resulting in an instrument that sounds better—or worse—than its numbers would suggest.

Controlling Tone— The Keyboard

Just as in an acoustic piano, the role of the keyboard is to provide the player with intimate, reliable control of the instrument’s tonal resources. But just as there is no single correct tone, there is no single correct feel; rather, there is an acceptable range of touch characteristics.

Touch Weight

As in an acoustic piano, the action of most digital pianos is primarily an arrangement of levers, but the digital action is far less complex and doesn’t require regular adjustment. Players use a few definable criteria to judge an action. Some are easily measured, others are largely subjective. Among the most frequently debated by digital piano buyers is *touch weight*.

Touch weight is the amount of force, typically measured in grams, required to depress a key. A touch weight in the range of 50 to 55 grams is generally considered normal for an acoustic piano. The resistance offered by the key is a combination of friction and the mass of the parts being moved. Both of these factors behave slightly differently in acoustic pianos than in digital pianos. Measuring the touch weight of an acoustic piano is typically done with the sustain pedal fully depressed, which removes the weight of the dampers and reduces the force required to depress the key. The problem is, digitals don’t have dampers, so the digital manufacturer has to decide between the higher weight the pianist will feel when the dampers are being lifted by the key, and the lighter weight when the dampers have been lifted by the sustain pedal. There is no single right answer—just design choices.

Friction is also a bigger factor in the action of an acoustic than in a digital piano. Most of the friction in an acoustic action is due to various

hinge points and bearing surfaces, many of which have cloth or felt bushings. Over time, these bushings wear away or become compacted, reducing friction and the amount of force required to depress a key. Another factor is humidity. Felt and wood parts readily absorb and release moisture, effectively increasing or decreasing friction with changes in the amount of moisture in the air. Because digital actions contain far fewer felt parts and—with the exception of a few upper-end actions sporting wooden keys—no wooden parts at all, changes in friction due to wear and fluctuations in humidity are substantially reduced.

Yet another aspect of touch weight is that it varies from one end of the keyboard to the other. In an acoustic piano, the hammers are significantly heavier at the bass end of the keyboard than at the treble end, which results in heavier touch weight in the bass and lighter touch weight in the treble. Enter the *graded hammer action*: To replicate the touch weight of the acoustic piano keyboard, most digital piano actions employ in their designs the equivalent of graduated hammer weights. Rather than using 88 different weights across the span of the keyboard, which would be cost-prohibitive and of questionable value, it's common to use four different touch-weight values, each one used uniformly throughout one touch-weight zone.

Key Design

Some high-end digital pianos employ wooden keys to subtly move you closer to the feel of an acoustic action. The physical properties you may detect would be a slight flexing

of the key, a difference in the mass of the key, and possibly a very slight difference in the shock absorption of wood vs. plastic when the key is depressed and bottoms out (although this is mostly masked by the felt pad under the key).

Another aspect of key design is the tactile property of the keytop material. Ivory is so prized (and missed) by acoustic piano players not for its appearance, but for the fact that it's porous, and thus offers a degree of "grip" that slick-surfaced plastic keytops don't. This grip is particularly valued when the playing gets serious and the pianist's fingers become sweaty, which typically occurs during demanding passages, when the pianist's accuracy and control are pushed to their limits. Ivory substitutes, such as Kawai's Neotex, Roland's Ivory Feel, and Yamaha's Ivorite, provide the positive properties of ivory without the discoloring, cracking, and chipping for which ivory is equally famous. Other manufacturers have since added this feature, and it's one worth considering when comparing instruments.

Dynamic (Velocity) Sensors

The final aspect of the digital piano action we'll explore is how it measures the force the player's fingers apply to the keys. This is typically done using two electrical contact switches that are closed in rapid succession as the key is depressed. Alternatively, some high-end digital hybrids use optical sensors to sense the key's motion—a small flag attached to the key breaks a beam of light as it descends. However, what these sensors actually measure is not force—that is, how hard the

key is depressed—but the speed or *velocity* with which it is depressed. This is why you'll sometimes see the term *velocity sensing* in the keyboard specifications. As the key moves to the bottom of its travel, the instrument measures how much time has elapsed between the signals received from the first and second sensors. A longer time indicates that the key was traveling slowly and tells the instrument to produce a softer tone; a shorter time means a faster, harder keystroke, and thus a louder tone—it's that straightforward. Some actions employ additional switches to trigger other sample types, such as the damper effect mentioned earlier.

The Pedals

Modern acoustic pianos have three pedals. Let's take a look at how they work, and how their functions translate to the digital piano.

In the common three-pedal arrangement of an acoustic piano, the pedal on the right is the *sustain pedal*. In the case of digital instruments having only one pedal, it is the sustain pedal. Some refer to this as the *damper pedal*, because its mechanical function on an acoustic piano is to lift the dampers away from the strings. On a digital piano, the sustain pedal is an electronic switch. When depressed, it tells the instrument to allow played notes to gradually decay as they would on an acoustic piano.

The most frequent question about a digital piano's sustain pedal is whether it can perform a function called *half pedaling*. The acoustic piano's sustain-pedal mechanism can move the dampers from a position of rest on the strings to a position completely clear of the strings—or anywhere in between. Between these two positions is the highly useful half-pedal position, which allows the player more control of tone and

sustain. While half-pedal capability is now commonly found on upper-end digitals, it is not always present on lower-priced instruments, where the sustain pedal is more likely to be a simple on/off switch that allows full sustain or no sustain, but nothing in between. Some lower-priced digitals come with a separate square plastic or metal foot switch rather than something that looks like a piano pedal. However, even if the piano itself is capable of half-pedal control, the foot switch may provide only on/off sustain. The same may be true even with some pedals that have the appearance and movement of a piano pedal. It's always worth checking the specifications to be sure that both instrument *and* pedal are capable of half-pedal control.

At the left end of the three-pedal group is the *soft pedal*. The proper term for this in an acoustic grand piano—*una corda*, or “one string”—relates to its function. In an acoustic grand, this pedal, when depressed, laterally shifts the entire action—from keys to hammers—slightly to the right. Recall (from “**Tone Production**,” above) that, on an acoustic piano, most notes have two or three strings associated with them. When the action is shifted to the right by the soft pedal, the hammer strikes only two of the three strings in each three-string unison. This has two effects: it reduces the volume of the sound, and it slightly alters the tonal quality.

As with the sustain pedal, the digital version of this pedal is simply an electronic switch that activates an equivalent effect. Since the digital piano action can play at much lower volumes than the acoustic piano, the practical importance of this pedal for reducing sound volume is considerably lessened. However, its ability to alter tonal quality remains relevant—assuming it actually does so. Most do not.

The mysterious center pedal is the *sostenuto*. The easiest way to think of the *sostenuto*'s function is as a selective sustain pedal. Play one or more keys anywhere on the keyboard and, while holding these keys down, press and hold the *sostenuto* pedal. The *sostenuto* mechanism will hold the dampers for these keys away from the strings, sustaining them even after you release the keys, but any subsequent keys played will not sustain when released (unless you also use the sustain pedal). Clear? The bottom line is that all three-pedal digital pianos incorporate this feature exactly as it works on an acoustic piano. In written music, the *sostenuto* pedal is called for in only a few pieces of classical music. If you need it, it's there, but chances are you never will. In digital pianos, the middle pedal is often assigned another function, **discussed in Part 2** of this article.

The Audio System

The final component of most digital pianos is the audio system—its amplifiers and speakers—which perform the same job as an acoustic piano's soundboard: making the piano's sound audible at useful volume levels. I say *most* digital pianos because some instruments designed specifically for stage use lack an onboard audio system, as they will always be connected to a sound-reinforcement, or public address (PA), system.

The digital pianos currently on the market offer anywhere from 12 to 360 watts (W) of output power, channeled through from two to twelve speakers. To understand why there is such a wide range of options, we need to look at how the system's power-output capability (and the type, number, and placement of speakers) relates to what we hear.

The smallest change in volume that most people can detect is 3 deci-

dB	WATTS	DYNAMICS
64	0.015	
67	0.03	ppp
70	0.06	
73	0.12	pp
76	0.24	
79	0.48	p
82	0.96	
85	1.92	mp/mf
88	3.84	
91	7.68	f
94	15.36	
97	30.72	ff
100	61.44	
103	122.88	fff

bel (dB), and to achieve a 3dB increase in volume requires a doubling of the output power in watts. With these relationships in mind, let's look at some numbers.

Based on measurements of three of the most frequently encountered concert grand pianos—Bösendorfer model 290, Steinway & Sons model D, and Yamaha model CFIIS—I arrived at a model dynamic range. This range extends from the softest note possible, at 64dB, to the loudest chord I could produce, at 103dB. Assigning a modest 0.015W—we're assuming a *very* efficient audio system—to produce the softest (64dB) note, the chart below traces the progression of amplifier power required to keep up with the increasing volume to the top of the piano's dynamic range. Different audio systems will have different starting points, depending on the size and number of speakers being powered, the efficiency of those speakers' use of power, and the notes played (bass requires more power to match the treble volume). Dynamic markings have been added to bring some musical perspective to the numbers.

If you've not seen this sort of table before, the results are startling. It's the last three or four steps of volume that really demand power from the amplifiers.

When the audio system attempts to reproduce a sound louder than it can accommodate, it goes into “clipping” and produces a distorted version of the sound. One thing to remember is that even the most powerful instruments can be driven into clipping if played loudly with the volume turned all the way up. Aside from distorting the sound, overdriving the system can damage the speakers and amplifiers. The key is to set the volume no higher than 75 to 80% of its maximum level.

If you’ve already peeked at the specification charts toward the end of this book, you know that only a few digital pianos produce 100-plus watts of output power per channel (left and right). Many of the models that do have that much power also separate the low-demand treble frequencies from the power-hog bass frequencies by providing each frequency range with its own amplifier and speaker(s). A very few go so far as to divide the audio system into three separate subsystems, for the bass, midrange, and highs. These designs, called “bi-amped” or “tri-amped,” can make a noticeable difference in sound and power efficiency by using amplifiers and speakers optimized for specific frequency ranges rather than sending the entire frequency spectrum to a single full-range audio system.

Speakers

Because all of the digital pianos we’ll consider in this publication have stereo audio systems, all discussions of speakers will assume matching left and right channels.

The least expensive digital pianos employ a single full-range speaker per side. While these speakers are typically described by the manufacturer as “full-range,” they are in fact a compromise dictated by cost and, in the case of the most compact

designs, space. While a full-range speaker may reproduce much of the 20Hz–20kHz frequency range required by the piano samples, those frequencies will not be treated equally. The frequency response of a speaker is judged not only by its range, but also by its “flatness,” or accuracy. If we send to a speaker multiple signals at different frequencies but at the same volume level, then measure the speaker’s output volume when producing those sounds, we will see the speaker’s “frequency-response curve.” The full-range speaker will usually be acceptably flat through the middle of the frequency range, but will fall off in volume at the upper and lower reaches of the spectrum. In other words, the speaker will not accurately reproduce the full range of the signal sent to it. This is not the result of poor speaker design. As a matter of fact, I’m frequently amazed at what the engineers can coax out of these speakers. But the fact remains that they are inaccurate, and in ways that color our perception of the instrument’s sound. Even the best sample set is rendered unimpressive if the sparkling highs and thunderous lows are weak or missing.


For this reason, most upper-end models use three speakers, one of each optimized for the bass, midrange, or treble frequencies. Accurate reproduction of bass frequencies requires the movement of a great deal of air. This is accomplished by combining a relatively large surface area with a high degree of in-and-out movement. These bass speakers, or *woofers*, are largely responsible for our impression of an instrument’s “guts.”

At the opposite end of the frequency spectrum is the high-

Even the best sample set is unimpressive if sparkling highs and thunderous lows are weak or missing.

frequency speaker, or *tweeter*. The tweeter, which is physically quite small, is responsible for reproducing the nuances of the upper range of the instrument. Besides the obvious frequency difference between the outputs of the woofer and tweeter, they also differ in their placement requirements. Whereas low frequencies tend to radiate in all directions, the higher the frequency of the sound, the more directional it is, which means that the precise placement of the tweeter is much more important. Most of the low- and mid-frequency speakers on digital pianos are located below the keyboard because there’s plenty of room there. The more directional nature of the high frequencies requires pointing the tweeters directly at the player’s head, usually from somewhere on the instrument’s control panel.

The newest twist in speaker systems—one that appears to be unique to digital pianos—is the *soundboard speaker*. This technology will be discussed in the article “**Hybrid Pianos**,” elsewhere in this issue.

So we now have all the makings of a digital piano: a sound source, and the means to control and hear it. But none of the current crop of digital pianos stops there; all of them have additional capabilities. These extras range from a handful of additional voices to direct Internet access. Even if your current needs don’t extend past the basics, you should understand the other features present on your instrument, and how they might surprise and lure you into musical adventures you’ve never contemplated. To continue, please read “**Digital Piano Basics, Part 2: Beyond the Acoustic Piano**.” 



THE FIRST INSTRUMENTS we now call digital pianos were specialized versions of the synthesizers of the day (early 1980s). These synthesizers were capable of producing a staggering array of sounds, and allowed the player to exercise control over many details of those sounds. A standard feature of many synthesizers was the ability to produce the sounds of pianos and other conventional instruments, which led to the spin-off we now call the digital piano.

The first digital pianos retained some of the other capabilities of their parent instruments by including a few preset voices besides that of the acoustic piano. It wasn't long before subsequent models appeared with expanded voice capabilities, reverberation effects, background accompaniments, the ability to connect to other digital instruments and computers, and much more. In this article we'll look at each of these categories of "extras," what they do, and how they might enhance your musical experience.

Instrumental Voices

The designers of the first digital pianos correctly assumed that someone who needed the sound of an acoustic piano would probably benefit from a handful of related voices, such as the harpsichord, an organ sound or two, the very different but highly useful sounds of such electric pianos as the Fender Rhodes, and so on. To this day, even the most basic digital pianos feature voice lists very similar to those of the original models. What's changed over the years is the quality or authenticity of those voices, and the cost of producing them.

So far, in Part 1 of this article, I have discussed only samples of

acoustic pianos. For most models of digital piano, the same sampling technology is used to reproduce the sound of other acoustic instruments. Typically, an expanded selection of high-quality instrumental samples is found in only the more expensive models. Remember that, depending on the sample rate used, samples may be more or less accurate representations of the original voice. Because manufacturers almost never reveal these sample rates, our ears must judge the relative quality of the voices of the digital piano models we're comparing.

Note that many manufacturers have trademarked their names for a particular sampling technology or other aspect of an instrument. The important thing to remember about trademarks is that while the trademarked name is unique, the underlying technology may be essentially the same as everyone else's. For instance, the generic term for digital sampling, discussed in Part 1, is Pulse Code Modulation, or PCM. But a manufacturer may call their PCM samples *UltraHyperDynaMorphic II Sampling*, and rightly claim to make the only product on the market using it. However, that makes it only a unique *name*, not necessarily a unique technology.

Layering and Splitting

Layering—the ability to have one key play two or more voices at the same time—is available on virtually all digital pianos. Some combinations, such as Piano and Strings, are commonly preset as a single voice selection. On many instruments, it's possible to select the voices you'd like to combine. This is frequently as simple as pressing the selection buttons for the two voices you want to layer. Once these are selected, many instruments then allow you to control the two voices' relative volumes. Using the popular Piano and Strings combination as an example, you may want the two voices to play with equal volume, or you may want the Piano voice to be the dominant sound, with just a hint of Strings. Other possible settings include the ability to set the apparent positions of the individual voices in the left-right stereo field—with Strings, say, predominantly on the left. The most advanced instruments make it possible to have only one voice's dynamics respond to your touch on the keyboard, while the other voice responds to a separate volume pedal (this is described in greater detail under "**Other Controls**").

The other commonly available voice option is *splitting*. Whereas layering provides the ability to play two voices with one key, splitting lets you play one voice on the right side of the keyboard, and a different voice on the left side—for instance, piano on the right and string bass on the left. This essentially lets the instrument behave as though it had two keyboards playing two different

voices. The *split point* is the point in the keyboard where the right and left voices meet. While this split point has a default setting, it can also be moved to provide more playing room for one voice or the other. As with layered voices, there may be preset combinations, but you can also set up your own voice pairings; typically, additional options are available to vary relative volume levels and other settings between the two voices.

Effects

Digital *effects* electronically change a sound in ways the originally sampled source instrument typically could not. Effects can be loosely divided into those that mimic the acoustic properties of a performing space and those that modify the sound in non-acoustic and, in some cases, downright unnatural ways.

The most popular effect—in fact, the one most people never turn off—is Reverberation, or *Reverb*. The easiest way to understand reverb is to think of it as an echo. When reflective surfaces are close to the sound source and to you, the individual reflections of the original sound arrive at your ears from so many directions, and so closely spaced in time, that they merge into a single sound. But when the reflective surface is far away, there is a time lag between the original and reflected sounds that the ear recognizes as an echo, also known as “reverberant sound.” The strength and duration of the echo depends on a number of factors, among them the volume and frequency of the original sound, and the hardness and distance of the reflective surfaces. Different amounts of Reverb lend themselves better to different types of music. Although you can just leave Reverb on the default setting, you also can broaden the instrument’s tonal palette by exploring alternate settings.

The other common effect is *Chorus*. When a group of instruments play the same notes, the result is not simply a louder version of those notes. Even the best performers will be very slightly out of synchronization and out of tune with each other. This contributes to what’s variously referred to as a “full,” “fat,” or “lush” sound. The Chorus effect is frequently built into ensemble voices like Strings and Brass and, of course, Choir.

Before we leave the subject of effects, there is one other application to be covered here: dedicated effects speakers. Some upper-end digital pianos now come with speakers whose role is not to produce the primary sound, but to add to the apparent ambience of the instrument and the room. These speakers and their associated effects can significantly alter the sound of instrument and room. When done well, these effects are not noticed until they’re turned off, when the sound seems to “collapse” down to a smaller-sounding source.

Alternate (Historical) Tuning

One of the advantages offered by the digital piano is the fact that it never requires tuning. This does not, however, mean that it *cannot* be tuned. Just as we tend to think of the piano as something that has always sounded as it does today, we similarly tend to think that tuning is tuning, and has always been as it is now. In fact, our current practice of setting the A above Middle C at 440Hz, and the division of the octave into intervals of equal size for the purpose of tuning, are relatively recent developments.

Evidence suggests that international standard pitch, while a bit of a moving target depending on where, when, and for whom you were tuning, had pretty well settled down to A = 440 Hz by the mid-19th century. And by the late 19th century, following a few centuries of variation, we

had arrived at the tuning system of equal temperament.

Now that all that has been settled, why bother with alternate tunings? You may never use this capability, but for many it is a profound experience to hear firsthand how the music of J.S. Bach sounded to Bach himself, and thus to realize why he wrote the way he did. Instruments that include alternate tunings list in a menu the most common historical temperaments (tuning systems). Select an appropriate temperament, adjust the pitch control, and you have a time machine with keys. It’s a simple and invaluable tool for those interested in music history, and some instruments allow you to create your own unique temperaments for the composition of experimental or modern music.

MIDI

Electronic musical instruments had been around for decades, but were unable to “talk” to each other until 1982 and the introduction of the Musical Instrument Digital Interface (MIDI) specification. Many musicians used two, three, or more synthesizers in their setups, each with a distinctive palette of sounds, to provide the widest possible range of voices. The problem was that the musicians couldn’t combine sounds from different synths and control them from a single keyboard, because of differences in the electronic commands to which each synth responded. This ultimately led to a proposal for a common set of commands to which all digital musical instruments could respond.

In short, MIDI is not a sound source, but a set of digital commands—or, in the language of MIDI, *messages*—that can control a sound source. MIDI doesn’t even refer to notes by their proper names; for example, middle C is note number 60. When you use the recording feature

included in most digital pianos, what you're actually recording is a sequence of digital messages; hence the term *sequencer* for a MIDI recorder (some upper-end models now allow both MIDI and audio recording). These messages form a datastream that represents the musical actions you took. Some of the most common messages are listed in the table below.

There are *many* more message types, but this should give you an idea of how MIDI "thinks." Nothing is a sound—everything is a number. When recording or playing back a sequence of MIDI messages, timing—just as in a piece of music—is obviously a critical element, so MIDI uses a "synchronization clock" to control the timing of each message. MIDI can also direct different streams of messages to different channels. Each channel can be assigned to communicate with different devices; for instance, your computer and another keyboard.

While the MIDI specification of 1982 standardized commands for events such as note on, note off, control change, and program change, it didn't include a message type for instrumental voice. It was still necessary to manually set the voice that would play on each synth because there was no consistency between instruments from different manufacturers, or sometimes even within a single manufacturer's product line, as to which command would produce which voice. This changed with the adoption in 1991 of the General MIDI (GM) standard, updated in 1999 to General MIDI 2 (GM2).

Product specifications now frequently state that an instrument is General MIDI, or GM, compatible. Like MIDI, General MIDI specifies not a sound source but a standardized numbering scheme. Any digital instrument "thinks" of the different voices it produces not as Piano or Violin or Harpsichord, but as

BASIC MIDI MESSAGES	
Message	Action
Note On Event	The number of the note played and the key velocity (i.e., how fast the key went down)
Note Off Event	The number of the note released and the key's release velocity
Control Change	When the position of a control such as a pedal is changed, a message indicates the number assigned to that control and a value representing its new position
Program Change	When a new voice is selected, a message indicates the "patch" number of the new voice (the term patch goes back to the early days of the synthesizer, when different electronic elements were literally wired to each other with "patch cords")

Program Change numbers. General MIDI established a fixed list of Program Change Numbers for 128 "melodic instruments" and 1 "drum kit." GM2 later expanded this to 256 melodic voices and 9 drum kits. So all GM-compatible instruments use the same numbers to represent a given voice: Acoustic Grand Piano is always Program Change Number 1, Violin is always 41, and Harpsichord is always 7. A standardized numbering scheme of 256 melodic instrumental voices seems big enough to cover everything under the sun with room to spare, until you notice that some MIDI voices are actually combinations of instruments. For instance, Program Change Numbers 49 and 50 are String Ensemble 1 and 2, representing different combinations of string instruments playing in ensemble. Also, there are many Ethnic instruments (voices 105 through 112), and several Sound Effects, from chirping

birds to gunshots. If this has you feeling that perhaps 256 wasn't an unreasonably high number of voices after all, consider that many higher-end digital pianos have more than 500 voices, and some more than a thousand. This means that when you record using voices from the far end of the list on one manufacturer's "flagship" model, then play the recording back on someone else's top-of-the-line model, voice consistency once again flies out the window. Perhaps the most important thing to remember is that the GM standard doesn't specify the technology used to create the listed voices. One hint of the degree of variation possible under this system is the fact that your current cell phone is probably GM compatible.

In the 1990s, two proprietary extensions to the General MIDI standard were made, by Roland and Yamaha. Roland's GS extension was largely incorporated into the GM2 standard. Yamaha's XG extension defines far more voices than the other schemes, but hasn't been as widely adopted as General MIDI.

Connecting to a Computer

MIDI is now standard on all digital pianos. While it does allow your instrument to control or be controlled by other instruments, today it's most often used to connect the instrument to a computer. Connecting your instrument to a computer allows you to venture beyond the capacity of even the most capable and feature-packed digital piano.



Connecting two instruments to each other requires two MIDI cables—one for each direction of data transmission between the two devices. Standard MIDI cables use a

5-pin DIN connector, shown here. Since personal computers don't use 5-pin DIN connectors, connecting a keyboard to a computer requires an adapter that has the MIDI-standard DIN connector on one end, and a computer-friendly connector on the other.



**USB Connectors:
To Device (Type A),
To Host [Computer] (Type B)**

In 1995, the USB standard was introduced to reduce the number of different connectors on personal computers. Subsequently, MIDI over USB has emerged as an alternative that replaces two MIDI cables with a single USB link. In addition to being a common connector on personal computers, USB's higher transmission speed increases MIDI's flexibility by allowing MIDI to control 32 channels instead of the 16 specified in the original MIDI standard. USB connectivity is now finding its way into the digital piano. All current digital instruments still have 5-pin DIN connectors for traditional MIDI, but many now sport USB connectors as well. One thing to be aware of is that there are two types of USB connections that can appear on instruments. One, "USB to Device," allows direct connection to a variety of external memory-storage devices. The other, "USB to Host," allows connection to computers. If you plan to use these connections, you need to check the type of USB connections available on the instruments you're considering. Simply stating "USB" in the specifications doesn't tell you the *type* of USB connectivity provided.

External Memory

External memory consists of any storage device that's connected to

the instrument rather than being built in. As instruments become more advanced, they can require larger amounts of memory to store MIDI recordings, audio recordings, additional rhythm patterns and styles, even additional voices. Since different users will put different demands on memory resources, it's becoming increasingly common for manufacturers to allow the user to attach external disk drives and USB flash memory to augment onboard memory.

Floppy-disk drives have long been popular on digital pianos. While the floppy disk is rapidly disappearing from the computer world, it has remained a staple of the digital piano due to the volume of MIDI files that have traditionally been distributed on floppies. These files run the gamut, from complete song arrangements to files that use the special learning features of a particular instrument model to guide you through the process of learning a new piece of music. It's now possible to download these files from the Internet, but getting them from the computer to the instrument hasn't always been a straightforward process. As this transfer process becomes more user-friendly, the floppy will become less important. However, many teachers still use instructional books that come with a floppy disk that contains files to be used in conjunction with the book, so we can count on the humble floppy disk to stick around for a while.

If the instrument you select has the capability to record audio to external memory via USB, you'll want to add an external, or desktop, USB hard drive. These audio recordings are saved as uncompressed .WAV files, typically at the same sampling rates (though not the same file format) used for commercial audio CDs: one five-minute song can consume up to 50MB of memory space.

Not long ago, I might have suggested getting at least an 80-Gigabyte hard drive for this purpose, but it's becoming increasingly difficult to find external hard drives much smaller than 320GB, and Terabyte drives are now becoming increasingly common. Obviously, there's little need to worry about storage space.

The final external storage option—and my favorite—is the USB flash drive. These are the ultimate in handy storage and now range up to 64GB. Not only are they unobtrusive when attached to the instrument, but if your digital piano and computer aren't in the same room, they make file transfers quick and painless.

Computer Software

As mentioned briefly in the discussion of MIDI, perhaps the most powerful option that accompanies the digital piano is the ability to connect your instrument to your personal computer and enhance your musical experience by using different types of music software. Software can expand capabilities your instrument may already have, such as recording and education, or it could add elements like music notation and additional voices. While it's beyond the scope of this article to describe music-software offerings in detail, we'll take a quick look here at the different categories: Recording and Sequencing, Virtual Instruments, Notation, and Educational.

Recording can take two forms on the digital piano: data and sound. All models that offer onboard recording (i.e., nearly all of them) record MIDI data. This means that all of the actions you take when you play a piece—both key presses and control actions—can be recorded by a MIDI sequencer. But remember that a MIDI sequence, or recording, is data, not sound. Recording the actual *sound* of your music is a

different issue, and few digital pianos can do this.

Enter **recording software**. Recording software ranges from basic packages—even the most modest of which will exceed the recording capabilities of most digital pianos—to applications that can handle complete movie scores, including film synchronization. The higher-end applications are called Digital Audio Workstations (DAWs). These software applications cost more than many of the lower-priced digital pianos, and can be used to record, edit, and mix combinations of MIDI and audio tracks, limited only by the processing power and storage capacity of the computer. If you have an opportunity to look inside a modern recording studio, you'll find that computers running DAW software have replaced multi-track tape recorders.

Virtual instrument software can be controlled, or “played,” by your digital piano via MIDI, and can also be played by recording software that resides on the computer. Virtual instruments can take the form of standalone software or plug-ins. Standalone instrumental software doesn't rely on other software, but plug-ins require a host application such as the DAW software described above, or other software developed specifically as a plug-in host. Virtual instruments can be sample sets for strings, horns, or even pianos, or they can accurately emulate the sonic textures and controls of popular electronic instruments that are no longer produced, such as certain legacy synthesizers. (A number of piano-specific virtual instruments are explored in the article “**My Other Piano is a Computer**,” elsewhere in this issue.) While virtual instruments allow you to expand your sound palette beyond the onboard voices of your digital piano, they can place heavy demands on your computer's

processor and memory. A mismatch of software demand and hardware capability can result in *latency*—audible delay between the time the key is played and the time the sound is heard. If both the digital piano's onboard voices and the virtual instrument's sounds are played simultaneously, there could be a time gap between the two outputs that would make the result unusable. Virtual instruments can be an exciting addition, but be prepared for the technical implications.

Notation applications are the word processors of music. If you have a tune in your head and want to share it, simply recording it will allow others to hear it. But in order for most people to *play* your music, it must be written out in standard notation. In the early days of notation software, it was necessary to place each note on the staff individually using the computer's keyboard and mouse. The advent of MIDI created the ability to play a note on a musical keyboard and have it appear on the computer screen. Today's notation programs virtually take musical dictation: you play it, and it appears on the screen.

But there's a slight hitch that must be addressed. The computer's capacity to accurately capture the timing of your playing, down to tiny fractions of a second, allows it to reproduce subtle nuances with great precision. In a recording, this is a great asset; in notation, it can be a complete disaster. If—in the computer's cold calculations—you've just played a passage involving dotted 128th-note triplets, the software will happily display them. Unless notation applications are told otherwise, they are perfectly capable of creating notation that is absolutely

accurate *and* absolutely unreadable. This is where *quantization* comes in. Quantization—also applicable to the recording capabilities of higher-end digital pianos—allows you to specify, as a note value, the level of timing detail you desire. If the software is told to quantize at the eighth-note level, the printed music will contain no 16th notes—nothing shorter than an eighth note will be scored. If quantization is set at 16th notes, there will be more detail; if set to quarter notes, the music will

be devoid of any timing detail beyond that value. This must be used judiciously; too much quantization and musical detail is lost, too little and the notation becomes an indecipherable pile of notes (for a good laugh, Google “Prelude

Software can expand your instrument's capabilities or add elements like music notation and additional voices.

and The Last Hope in C and C# Minor”). As with recording applications, there is a wide range of capabilities available, from programs that will let you capture simple melodies, to applications that will easily ingest the most complex symphonic works, transpose and separate the individual instrumental parts, and print them out.

The final category we'll discuss is **educational software**. Just as there are educational programs and games to assist in learning math or reading, there are applications that use the MIDI connection between your instrument and computer to help you learn different aspects of music. A music-reading program may display a note, chord, or passage on the screen; you play the displayed notes on the digital piano and the software keeps track of your accuracy and helps you improve. An ear-training application may play for you an interval that you then try to play yourself on the keyboard. The

application will tell you what you did right or wrong and help you improve your ear. Other types teach music history and music theory. While many of these applications are geared to specific levels or ages, some can be set to multiple levels as you progress, or for use by multiple players.

Onboard Recording

Recording has been discussed above, in the “Computer Software” section. However, because nearly all digital pianos come with at least basic recording capability, it deserves a bit more attention. You may say that you have no intention of recording your music for others to hear, but in ignoring the instrument’s ability to record what you’ve played, you may be overlooking one of the simplest ways of improving your playing. Whether you’re just starting to play or are beginning to learn a new piece, being able to hear what you’ve just played is a learning accelerator.

I know what you’re thinking: “I heard it while I was playing it.” While most professional musicians have reached a level where they can effectively split their attention between the physical act of playing the instrument and the mental act of critically listening to what they’re playing, few of the rest of us can do this. Recording and listening to yourself will reveal elements of your playing that you never noticed *while* you were playing, and will allow you to see where to make changes in your performance. This is even more useful when working with a teacher. Imagine listening with your teacher, music score in hand, and pausing the playback to discuss what you did in a particular measure. This is one of many reasons piano teachers are adding digital pianos to their studios; they’re great learning tools.

One final thought on recording on the digital piano: Most manufacturers

list recording capacity as a certain number of notes—typically in the thousands of notes. But not everyone is counting on the same number of fingers. Recall that MIDI records data “events,” including note on, note velocity, note off, program change, control change, and a variety of others, many or all of which could have happened in conjunction with the playing of a single note. Each of these events consumes a certain amount of internal memory. Because this memory capacity is fixed, unless we know which events each manufacturer is counting as “notes,” it’s pointless to try to decide, based on these specifications, who offers more recording capacity. On the one hand, most instruments have more recording capacity than most owners will use. On the other hand, if recording capacity is important to you, this is another of the many areas in which simply buying the biggest numbers, or the most numbers for the dollar, is not a good strategy for selecting an instrument.

Automated Accompaniments, Chords, and Harmony—the Ensemble Piano

Some people, even some professional musicians, will tell you that using automated accompaniments—those rhythmic combinations of drums, bass lines, and chords—constitutes “cheating.” This has never made sense to me. If I use a tool to do something that I couldn’t possibly have done with my bare hands, am I cheating?

Whether or not a digital piano has these automatic features, frequently referred to as *styles*, is the primary factor that separates standard digital pianos from *ensemble* pianos. If your musical interest is focused solely on the classical piano repertoire, then this capability will probably be of no interest to you.

If, however, you or someone in your household plays or plans to play a wide variety of musical styles, the ability to have backup instrumentalists at your beck and call is just entirely too much fun. No matter how good a player you may be, you can’t be four people at once—or eight, or twelve, or an entire orchestra. These accompaniments are typically divided into groups by musical genre: Swing, Latin, Rock, World, and so on. The best of these styles are of a caliber that the best record producers would be proud of.

One thing to watch out for is the impact of automatic accompaniments on polyphony (see Part 1). Every bass line, drum beat, string sound, and guitar strum takes a toll on the number of simultaneous notes the instrument can produce. Thirty-two notes of polyphony can get used up in a big hurry when a complex style is playing in the background. If styles are important to you, look for higher polyphony numbers. Also, see if the instrument you’re considering is capable of downloading additional styles, and how many styles are available for that model.

How do these styles “know” which key to use when playing all those chords and bass lines? In the simplest “single finger” settings, if the player needs an accompaniment style played in C, for example, she plays a C with the left hand. As chords change in the music, the player makes the appropriate change in the left hand to indicate what the accompaniment should play. Once the harmonies have been determined, the instrument can also apply them to the right hand by filling in the notes of the appropriate chord under the melody note. More sophisticated systems can decipher complex chords by evaluating all of the notes played on the keyboard, so that even advanced players can use the accompaniment

styles without being held back from their normal style of playing.

All of this technology can make raw beginners sound as if they've been playing for years. While many players will progress beyond the simplest settings, other members of the family may continue using these playing aids for their own enjoyment.

Memory Presets

With the huge variety of voices, splits, layers, effects, and styles, it's handy to have a way to store favorite combinations. Many digital pianos come with a number of preprogrammed presets, and almost all of the more advanced models have programmable presets as well. These presets should be able to capture every possible setting on the instrument, from the obvious to the most obscure. Aside from the number of presets available, the placement of the preset buttons themselves can make a huge difference in their usefulness. Small, closely spaced, inconveniently placed presets might as well not be there—part of the pleasure of presets is not simply to instantly recall a setting that you've worked out in excruciating detail, but also to access that setting quickly and easily while playing. Even better is being able to assign preset changes to a seldom-used pedal (anything other than the sustain), so that each time you press the pedal, the instrument advances to the next preset. This can enable the creative player to step through sonic and rhythmic changes with ease while keeping his hands on the keyboard and distractions to a minimum.

Song Settings, Music Libraries, and Educational Tools

Many digital pianos are equipped with a list of *song presets*, a feature that goes by a variety of names depending on the brand of instrument.



Educational feature: A light indicates to the student which key should be pressed next.

A less expensive alternative is to use a keyboard display.



Like the memory presets described above, song presets incorporate all of the capabilities of that particular digital piano, but they work with particular songs. When you're new to the vast choices offered by some of the more advanced digital pianos, and unsure what sounds and styles to use for a song, these presets will set everything for you in a way suited to that song. Of course, this depends on the song you want to play being included in that instrument's song list in the first place. These lists range from a hundred or so built-in songs to downloadable databases containing thousands of songs, and the best of them accurately reflect the instrumentation, rhythms, and tempo (which you can slow down or speed up if necessary) of the original recordings. It's important to note that these song presets don't play the music for you; they just set up the

instrument so that it will sound right when *you* play the music.

A related feature, but with a different purpose, is the *song library*. Once again, this feature goes by different names depending on the instrument's brand. Unlike the song presets, the song libraries *do* contain the actual music. In most cases these are from the classical piano repertoire and are recorded with the left- and right-hand parts on separate MIDI channels. They can be played with both hands turned on for listening or studying, or with only one hand turned on so the player can practice one hand's part while the instrument supplies the part for the other hand. In this way each part can be worked on separately, while both parts are heard. Although the tempo can be adjusted (for most of us, slowed way down), playing along with the other part keeps your

tempo steady and your meter honest. Even without built-in libraries, an enormous amount of music has been recorded in this manner and can be purchased—frequently with the printed notation—or downloaded free from the Internet.

Combinations of song libraries and computer-based educational software can be found on both entry-level and top-end instruments. These range from simple separation of left-hand/right-hand practice to complete lessons, tests, and tips on fingering. Some of the greatest aids to beginners are systems that combine the display of notation with visual cues as to which keys to play. Upper-end models use either lights aligned with each key, or movement of the key itself, to give the beginner a hand in correctly associating the note on the printed music with its key on the instrument. However, seeing which key to play, and actually playing it before the music has moved on, are two different things, and trying to do so can be a frustrating experience. Some instruments make it easier to follow the light or key movements by waiting until the correct key is played before moving on to the next key. As a less expensive alternative, some lower-priced instruments show a small keyboard on the display with the required key indicated. While this still provides some guidance for the beginner, it's not nearly as easy to associate movements between the tiny keys in the display with the correct keys on the keyboard.

Other Controls

The ability to connect an accessory volume pedal is fairly common on upper-end and professional digital pianos. While the thought of a volume pedal attached to a piano may at first seem odd, it can actually add some interesting possibilities. Although it can be used to control the volume of

the entire instrument, some models will allow you to select which aspects of the instrument are controlled by the pedal. One of my favorite ways to use the volume pedal is to layer an orchestral string voice with the piano voice and have the volume pedal control only the strings. This allows me to fade the strings in and out while the piano remains within its normal dynamic range.

While we're on the subject of pedals, it's worth noting that many instruments allow you to assign different functions to the standard piano pedals. As with the addition of the volume pedal above, this may initially strike you as a strange thing to do, but the presence of the non-piano voices can make sense of the situation. Some of the most common and handiest examples of alternate functions for the less-used sostenuto and soft pedals are pitch bend, rotary-speaker speed control, and triggering rhythm breaks.

Pitch bend, as the name suggests, allows you to temporarily raise or lower the pitch of a note, then allow the note to slide back to its normal pitch. The most common setting is to have a pedal set to lower the pitch of a note by a half step (the very next note below), then allow the pitch to slide back up to normal when the pedal is released. Think of the opening clarinet line in Gershwin's *Rhapsody in Blue*—the trill leads to an ascending scale, and the player slides to the last note at the top of the scale. This effect is duplicated by depressing the pedal (set for pitch bend) and playing the upper note of the slide at the time you would have played the lower note. The pitch bend will cause the key for the upper note to

instead play the lower note; then lift the pedal and you'll slide from the lower note to the upper one. It requires some practice, but isn't as difficult as it sounds.

Setting a pedal for *rotary-speaker speed control* allows the digital piano player to duplicate the effect produced by the rotating baffle and horns of the classic Leslie speaker, typically used with “drawbar” or “jazz” organ sounds. One of the techniques used by players of this type of organ is switching between the slow Chorus rotation of the speaker and the fast Tremolo rotation. As this is done while playing, being able to tap a pedal to switch speeds makes the effect much easier to use.

One of the easiest and most useful pedal assignments is to trigger a *rhythm break*. The break is

a brief variation in the rhythm or style in use at the time. Once again, the ability to activate a feature without taking your hands off the keyboard makes use of that feature much more spontaneous.

Special controls usually found only on professional stage

pianos are the *pitch bend* and *modulation wheels*. The pitch-bend wheel acts in the same way as the pitch bend described above, but with a dedicated control instead of a pedal. A number of different effects can be assigned to a modulation wheel, depending on the voice in use or the player's choice. The most common default setting is *vibrato*, a repeating pattern of up-and-down pitch variation around a note, such as the wavering sound in a singer's voice. The modulation wheel allows the player to control the amount of vibrato in real time while playing. This is particularly useful in creating

Many instruments allow you to assign different functions to the standard piano pedals.

additional realism with solo instrumental voices such as Saxophone, Violin, and Guitar.

Vocals

Many who love to play also love to sing, and the digital piano has something for vocalists as well. Many instruments now feature a microphone connection. In its most elementary form, this simply uses the digital piano's audio system as a PA for vocals. But some models throw the full weight of their considerable processing power behind the vocalist. Many vocal recordings and performances take advantage of effects processing to enhance the performer's voice. This can range from adding reverb to effects that completely alter the performer's voice, making it sound like anything from Barry White to Betty Boop. Top-of-the-line digital pianos can even go beyond what some recording studios can do. Perhaps even more amazing is the ability of some instruments to combine the vocal input with their ability to harmonize, resulting in your voice coming out in four-part harmony. Display of karaoke lyrics is also common; the presence of a video output on some instruments allows the lyrics to be displayed on a TV or other monitor.

Moving Keys

When an acoustic player piano plays, the keys must move in order for the hammers to strike the strings and produce sound. The digital piano does not share this mechanical necessity, yet we now have digital pianos whose keys move when playing a recording. You'll recall from the section on recording that the digital piano can record and reproduce your playing, or can reproduce a MIDI file from another source. The sounds are produced by sending the playback data directly to the

tone-production portion of the instrument, bypassing the keyboard. But since there is no dependency on moving keys, why go to the extra expense of making them move? Two reasons: First, it's one way for the instrument to direct beginners to the next melody note in the educational modes of some models, as described earlier under "Educational Tools." Second, it's just fun to watch. However, you should measure the value of this feature against the additional cost, and be mindful of the increased possibility of mechanical failure due to the additional moving parts of the key-drive mechanism.

Human Interface Design

The Man-Machine Interface, or MMI, as designers and engineers typically refer to it, defines how the player interacts with the instrument's controls. All of the amazing capabilities of the modern digital piano are of little value if the player can't figure out how to use them, or can't access them quickly while playing. The considerations here are the location, spacing, grouping, size, shape, colors, and labeling of the controls. Take the example of the rhythm break discussed earlier. Its purpose is to alter the rhythm during playing. If the button that activates this feature is inconveniently located, small, and surrounded by closely spaced buttons of a similar size, shape, and/or color, its usefulness is severely limited. If, however, it's within easy reach of the keyboard, of decent size, and somewhat distinctive in appearance or markings, it becomes a useful tool.

In the case of instruments with displays, considerations include the size, resolution, and color capabilities of the screen and—more important—the logic behind its operation. Two types of screen interfaces are currently used on digital pianos: *touchscreens* and *softkeys*. Most

readers are already familiar with touchscreens from ATMs and other modern institutional uses. The term *softkeys* doesn't refer to the feel of the keys, but to the fact that their functions are displayed on the adjacent screen, and change depending on the operation being displayed by the screen. This is as opposed to *hardkeys*, which have a single dedicated function. Each method has its proponents, but the interface type is less important than the MMI design. A smaller monochrome display that you can intuitively understand is better than a large color display that makes no sense to you.

Also worth considering is the placement of connections you'll use often. If you frequently switch back and forth between speakers and headphones, you'll want to make sure the headphone jack is easy to locate by sight or feel, and that the cord will be out of your way when plugged in. If you'll be using a USB memory device to transfer files between instruments or between the instrument and a computer, make sure the USB port is easy to get to. In newer designs, a USB port is placed above the keyboard level for easy access, as opposed to earlier models in which the port was below the keyboard or on the instrument's rear panel.

We can't leave the subject of user interfaces without discussing the owner's manual. As with the MMI itself, a well-written manual can make it a pleasure to learn a new instrument, and a bad manual can be worse than useless. This is particularly important for higher-end instruments. Fortunately, many manufacturers allow you to download the manuals for their instruments. This lets you compare this critical aspect of the instruments you're considering. The manual should be thoroughly indexed, and clearly written and illustrated.

Third-party tutorials are available for some instruments, especially the more complex models. These tutorials step you through the model's functions with audio or video instructions, and provide an alternative to sitting down with the manual.

Firmware Upgrades

The digital piano is, at heart, a highly specialized computer, and like all computers, its functions are dependent on its software. When we speak of the software that runs on the digital piano, we are typically talking about what is properly classified as *firmware*. Firmware is software that is embedded in a hardware device such as a microprocessor or associated memory chip. This can be done in two ways: the firmware can either be permanently burned into the chip, or it can be written in the chip's memory, which also means it can be rewritten if necessary. Just as computers occasionally need a software upgrade to fix a previously undetected problem—a “bug patch”—the more complex digital pianos can benefit from the ability to accept firmware upgrades. This may never be necessary for a given model, or it may fix an obscure feature interaction or update the instrument's compatibility with external devices. In addition to checking on this capability, it's worth finding out how you would be notified of an update and what the actual update procedure involves. In most cases today, it's an easy, do-it-yourself procedure.

Headphones

Headphones are by far the most popular and frequently used digital-piano accessories. One of the advantages of digital pianos is the option to practice without disturbing others—or them disturbing you. Whether you're an occasional head-



Shure in-ear, earbud-style headphones



Sennheiser around-the-ear (circumaural) headphones



Grado on-the-ear headphones

phone user, or your instrument or situation dictates constant headphone use, selecting the right headphones will make a big difference in your playing comfort and enjoyment.

When I select headphones, I evaluate them using four criteria: fit, sound, isolation, and budget. Although it may seem that starting with sound is the obvious choice, my first priority is fit—it doesn't matter how great they sound if you can't stand to wear them for more than a few minutes. There are three basic styles of headphones: those that fit *around* the ear (circumaural) with the cushions resting on your head, those that rest directly *on* the ear, and those that fit *in* the ear. The style of headphone you choose will also determine the level of isolation. If isolation is critical for your situation, it should dictate the style of headphones.

There are a couple of variations on the circumaural and in-ear styles. Circumaural headphones can be open or sealed. Open designs don't cut you off from the outside world, and their output can be heard—very

softly—by anyone nearby. Sealed designs offer more isolation but introduce some acoustic design problems that are difficult to get around until you get into the higher price ranges. In-ear headphones are available in the earbud style that sits in the outer ear, and the ear-canal type that fits inside the ear canal itself. The latter offers, by far, the best isolation in both directions, even when compared to headphones with active noise canceling.

Sound is very much a matter of personal preference and perception. One thing that can make the selection process easier is to bring a familiar CD with you when you audition headphones. While you may initially favor headphones that color the sound in some attractive way, this can become sonically tiring with extended listening. If you aim for a neutral sound, you'll end up with headphones that won't tire your ears over extended periods, and that will most accurately represent the sound produced by your digital piano or by the models you're considering. 🎧



Review: Vienna Symphonic Library's *Vienna Imperial*

In the last issue we explored an entry-level sample package, Garritan Authorized Steinway Basic Version, and a mid-priced physical modeling package, Pianoteq. In this review we'll look at the high-end sample package, *Vienna Imperial*, by Vienna Symphonic Library.

The story of Vienna Imperial is actually several stories: Bösendorfer, its CEUS electronic player-piano system, and Vienna Symphonic Library (VSL).

VSL's "library" consists of digital samples of instruments ranging from finger cymbals to this article's subject, the Bösendorfer model 290 Imperial Concert Grand. Their 80 software packages cover solo instruments—2,496 samples of a piccolo, for example—and ensembles of every description, all the way up to the imposing 792,953-sample *Symphonic Cube*, delivered on 29 DVDs for \$12,460. With the exception of the Vienna Concert House Organ (pipe organs being notoriously difficult to move), all sample recording is done in VSL's purpose-built studio, the Silent Stage. The Silent Stage recording environment is designed and equipped specifically for recording samples. For most instrumental recordings, the studio will serve as home for an individual musician or ensemble for anywhere from six to twelve months of grueling precision and repetition. But the Vienna Imperial sampling sessions were different—in this case, the musician was Bösendorfer's CEUS electronic player-piano system. (The

CEUS system is described in more detail in "Buying an Electronic Player-Piano System," elsewhere in this publication.)

The CEUS system, built into the Bösendorfer Imperial at the factory, facilitates sample recording because its finely calibrated, tireless mechanism precisely repeats all articulations, including dynamics and pedaling. Exceeding VSL's typical fanatical precision, the CEUS system allowed for the consistent sampling of 100 dynamic levels, as well as various sustain, soft-pedal, and release samples, all captured at three different microphone positions—Player, Close, and Distant (Audience). The Bösendorfer Imperial recording sessions ran up a grand total of 69,633 individual samples occupying 500GB of memory, which was then reduced to 60GB, including the control program, by VSL's proprietary lossless compression. While not all keys are treated equally, VSL claims up to 1,200 samples per key. Let all of that sink in for a minute: hardware-based sampled digital pianos currently top out at 5 dynamic levels.

The Bösendorfer Imperial itself is a massive beast at 9' 6", and sports 97 keys versus the normal 88. The additional keys are all at the bottom, which results in a low C that produces a fundamental pitch of 16.35Hz, the same pitch produced by the 32' low-C pipe of a large pipe organ. It's almost more felt than heard. Handcrafted in Vienna, as all Bösendorfers have been since 1828, an Imperial will cost you upwards of \$150,000. Add about \$50,000 if you want the CEUS system installed.

AN INTRODUCTION TO SOFTWARE PIANOS

If the digital piano is thought of as a complete instrument that's ready to play right out of the box, piano software can be thought of as part of a "piano kit." The standard digital piano is completely self-contained in that it's made up of the memory and processing electronics required to produce the sound, the firmware (software residing on a chip) that is the source of the sound, a keyboard to control the sound, and, more often than not, the audio system needed to hear the sound. If viewed as separate components of a piano kit, however, a personal computer can take on the role of memory and processing, piano software becomes the sound source, a keyboard (very possibly your digital piano) provides control, and powered monitor speakers and/or headphones let you hear your new invention. If you have a digital piano (or an acoustic piano with hybrid features) and a personal computer (Mac or Windows), you already have most of the ingredients of a software-based piano.

The obvious question: If you already have a digital piano, why would you want to add a software piano? Most digital pianos are capable of producing more than one piano sound, but typically, all of these sounds are based on a single piano as a sample source. Think of it this way: If you could add a Bösendorfer, Blüthner, Fazioli, or Steinway to your palette of piano samples for only the cost of the software, would you do it? (I hear the sounds of pianos and computers being pushed together even now.) How about being able to virtually design your own instrument with piano software based on physical

(continued)

modeling? (See “**Digital Piano Basics, Part 1**” for more information on *physical modeling*.)

Adding a software piano to your existing piano, or building your own piano from a “piano kit,” is a bit more involved than putting your computer and your piano in the same room—but not by much. Let’s take a look at the requirements on both the computer and piano sides. Since the requirements for the piano are pretty simple, we’ll start there.

Digital and Hybrid Piano Considerations

If your existing piano is going to serve as the basis for your extended piano family, the minimum requirement is that it have MIDI-out capability—USB MIDI makes it slightly easier, but regular MIDI connections will do as well. The good news here is that all currently available digital pianos and most acoustic hybrid pianos already have, or can add, this capability. The next step is to be able to get your existing “host” piano to stop producing its own sound. For digital pianos, this consists of a brief trip to the owner’s manual to learn how to set it up as a “controller” or “master” keyboard. Acoustic pianos must either be capable of “silent”

mode or must be converted to enable it (see “**Hybrid Pianos**” in this issue).

Computer Considerations

Requirements for the computer vary considerably, depending on the piano software used and the choices you make in software settings. Just as with digital pianos, sample-based software is highly dependent on the size of the computer’s memory, while physical modeling software—which creates the sound in real time rather than retrieving an existing sound sample—primarily depends on the speed of the computer’s processor. At a minimum, hardware requirements will involve processor type and speed, and the amount of random-access memory (RAM) and hard-disk space. These requirements range from packages that can run on most recent-vintage mid-range computers, to those requiring higher-speed processors, 4 Gigabytes (GB) of RAM, over 250 GB of free hard-disk space (preferably on a 7200rpm drive), and a dedicated sound card. Either way, you need to check the hardware requirements of the individual software package you’d like to run to make sure it will work properly on your computer—or use it as an ex-

cuse to get a new computer.

Aside from making sure that you have enough memory to store and run these packages, processor and sound-card choices will also keep *latency* in check. Latency is how long it takes the computer to produce a sound from the time you press a key. When latency becomes noticeable, your brain doesn’t know whether to slow your playing so that the sound can catch up, or to speed up to make the sound happen faster. Neither of these works. (Anyone who plays the pipe organ knows what latency is, and will adapt to it without a second thought.)

Software

This is where the real fun starts. There are currently over two dozen software-piano packages available, at prices ranging from \$79 to \$895. These include both sample-based packages and packages based on physical modeling. Several host acoustic pianos (i.e., the sources of the samples) are available via software, including instruments made by Bechstein, Bösendorfer, Blüthner, Fazioli, Kawai, Steingraeber, Steinway, and Yamaha. If you’d like to add some period instruments to your palette, there are also packages with samples from historical fortepianos.

Before we start exploring the capabilities of the package, we have to make sure the computer can handle it. VSL recommends that the sample set be installed on a separate 7200rpm hard disk. Considering that I acquired a brand-name 1-terabyte drive for this purpose for \$100, this isn’t a major hurdle. On the computing side, an Intel Core 2 Duo processor and 3GB of RAM are required for both Mac and Windows machines—not entry-level, but not at all out of line with today’s mid-range computers.

The process of installation, while not trivial, is not particularly difficult; it just takes a while. The initial step of installing the base program is quick and straightforward. Installation of the sample set, however,

requires that you have something else to occupy your time, as each of the six DVDs takes roughly thirty minutes to load. The one step in installation that you may not have encountered before is the registration of the ViennaKey licensing device. This is a USB dongle that contains the serial number of your copy of Vienna Imperial and the activation code you will receive, and locks the use of the program to the installed computer. You can transfer this registration if you switch to a different computer at a later time. If this seems a bit over-the-top relative to other software you’ve installed, understand that it’s not uncommon for high-end music software, and in my view is a perfectly understandable precaution against illegal copying.

One consideration that VSL does not specify, but that seems somewhat obvious, is that of speaker selection. There’s little point in trying to evaluate a high-end sound source with any old speakers. Once I’d discovered that Vienna Symphonic Library used Blue Sky monitors for their soundproof demonstration “Cube” at the NAMM Show (the annual trade show of the music industry), I contacted the company and we decided on their Media Desk 2.1 system. The Media Desk consists of two two-way satellite speakers and a sub-woofer, which tempts one to compare them with the many 2.1 computer speaker systems available. This would be unfair to both sides, as the Blue Sky monitors are in a completely different class. These powered

near-field monitors are intended for recording and production applications, and are thus designed with accuracy as the primary objective, as opposed to sounding “pretty.” In essence, their job is to tell you the truth, as opposed to telling you what you may want to hear. While this was exactly what was needed for this application, this class of speaker is sometimes accused of being a bit harsh. I received the monitors a few days before the Vienna Imperial software arrived, which gave me the opportunity to listen to them with a wide variety of source material. In short, they sounded incredibly detailed without ever making me wince. At \$699 for the system, they are well within the price range of many powered monitors suitable for use with virtual-piano setups or as upgrades for existing digital pianos. (Hmm, I seem to have lost the return paperwork somewhere . . .)



The Blue Sky Media Desk 2.1 system

When you first launch Vienna Imperial, it comes up in Basic mode, which simply allows you to select the microphone position: Close, Player, or Distant. But there are also a couple of menus worth exploring before you simply select a mic position and go on your way. In the upper right of the window is a menu labeled “Load Samples R S.” The R

and S stand for “Release Samples” and “Soft Pedal Samples.” Selections in this menu allow you to omit either or both of these sample sets if you’re a bit shy of the recommended amount of RAM. On the left side of the window is the “Factory Presets” menu, which contains not only the three basic mic positions, but nine other presets involving even more



mic positions, and equalization and reverberation settings.

If you're just a bit more adventurous (you know you have to try it), you can select the Advanced view, which reveals individual settings for Equalization, Midi Sensitivity, Octave Shift (remember that you have nine extra notes below the normal 88-key range), Transpose, Reverb settings, Dynamic Range, Sympathetic level, Pedal Noise, Stereo Width, and Tuning. In this view you can experiment with different settings and save your favorites to the presets menu.


So how does Vienna Imperial sound? Smooth, seamless, unflappable. As you might imagine, with 69,633 samples at hand, there never seemed to be a playing condition that left it at a loss for the perfect response, regardless of dynamic levels, releases, or pedaling. There was also no mistaking it for anything but a Bösendorfer—the tone was clean, clear, and distinctive. One thing I found enjoyable was recording using Preset 02 Player Default for the at-the-keyboard experience, then playing back using Preset 04 Distant Concert Piano Big Hall for the in-the-audience experience.

The two effects available in the native player software are Equalization and Reverberation. The equalization, or EQ, is a three-band parametric arrangement. A parametric EQ allows you to not only adjust the degree of boost or cut for a specific frequency range, but to move the center frequency of each range and to change its “Q,” or the bandwidth of the effect. This is vastly beyond the control provided by your home or car stereo's Bass, Mid, and Treble controls.

The reverb control, too, goes well beyond the ordinary. Most reverberation schemes employed in digital pianos still rely on algorithms that provide the original sound with

“reverb.” With Vienna Imperial, VSL has seen fit to include *convolutional reverb*, which uses an impulse signal within a real acoustic space to sample the reverberation characteristics of that space. It's a lot like sampling the sound of a piano: an extremely brief “impulse” sound—an electric spark is common—causes an acoustic space to reverberate, and the result is captured as an acoustic signature. Convolutional reverb can impose this reverb signature on any given sound, resulting in the impression that the sound was captured in the originally sampled space. In this case your piano can be placed in any of the three different performance spaces of the Wiener Konzerthaus (Vienna Concert House).

Is Vienna Imperial worth the \$875 investment? If you love the sound of the Bösendorfer Imperial but lack the \$150,000, the considerable

space required, or both, this may be your ultimate solution. If you're happy with the action of your digital piano—this always comes first for me—but feel you'd like to have more piano sounds, adding software-based pianos is a great option. But be warned: once you start down this path, there is a tremendous temptation to collect them all. 

Vienna Imperial

by Vienna Symphonic Library
\$875

www.vsl.co.at/

System Requirements:

PC Intel Core Duo (or AMD 3GHz) or higher

Mac Core Duo, Intel Platform only

3GB RAM with 1.5GB memory available

Fast separate hard drive with 60GB free space

PIANO ART

White House “Gold Grand” Art Case Piano

In 1903, to celebrate the company's 100,000th piano and the 50th anniversary of its founding, Steinway & Sons presented the “Gold Grand” Art Case piano to the White House and President Theodore Roosevelt.

The piano served through the administrations of Roosevelt, Taft, Wilson, Harding, Coolidge, Hoover, and Franklin Roosevelt. It currently resides at the Smithsonian National Museum of American History.



<http://www.steinway.com>

YOU HAVE \$2,000 to spend on a digital piano. You might be willing to stretch your budget a little if something really strikes your fancy, but not by much. You're primarily interested in the basics: good piano sound and a good action. Rhythms wouldn't necessarily disqualify a model as long as the basics aren't sacrificed. Beyond that, you're pretty open to different possibilities.

When it comes to choosing an action and a sound, anyone can tell you what *they* prefer, but no one can tell you what's best. To determine what *you* prefer, you have to play and listen to instruments yourself. For the purposes of this article, then, we'll primarily be looking at specifications. Although one should never buy a digital piano solely on the basis of specifications, they can be very helpful in guiding you toward a selection of models likely to match your needs. Since our readers' needs vary, for the purposes of comparison, I've chosen several specs that are likely to be high on readers' lists: number of voices, number of notes of polyphony, watts of speaker power, number of speakers, number of tracks of onboard recording, and the presence or absence of a USB-to-computer connection. I've also noted the terms of the warranty; although this is unlikely to be of

paramount importance, it can serve as a tiebreaker when other specs are close. (Note that stated warranties are for the U.S. market; other markets may differ.)

Consoles

Let's look at a few different ways of approaching the \$1,995 digital piano, beginning with the most common choice: the furniture-style vertical, or console. Realistically, nobody sells a model for *exactly* \$1,995, so we'll consider models priced within about \$100 of that figure. Scanning the chart of **Digital Piano Specifications and Prices** in this issue of *Piano Buyer*, we come up with six current console models whose Estimated Prices or MAPs fall within this range (see chart for explanation of price terms): Kawai CN32, Korg C-520, Kurzweil Mark Pro TWO SP, Orla CDP10, Roland

DP-990, and Yamaha CLP-320.

All of these models share certain features. All have three pedals, with half-pedaling supported on the sustain pedal. Also common to all models are key covers, headphone jacks, and such basic features as stereo audio systems, transposition, and variable tuning. Table 1, below, shows how they compare on the basis of our chosen specifications.

Which of these models is best for you, based on our chosen specifications, will depend on what's important to you (read more about these specs in the "**Digital Piano Basics**" articles in this publication):

Voices: If you're interested only in a solid acoustic-piano voice, then one voice could well be sufficient for you. On the other hand, if you're in search of maximum flexibility, then the number of voices available—as long as they're quality voices—is of paramount importance.

Polyphony: For ordinary solo playing, 64 notes of polyphony is probably enough. If, however, you're playing a multitrack recording through your digital piano with different voices on each track, there's no such thing as too much polyphony.

TABLE 1: CONSOLE PIANOS IN THE \$1,995 PRICE RANGE

Brand/Model	Voices	Polyphony	Watts/ Speakers	Recording Tracks	USB to Computer	Warranty parts/labor (years)	Est. Price
Kawai CN32	36	96	32/2	2	Yes	5/5, in-home	\$2,099
Korg C-520	40	62	70/4	2	Yes	1/1	1,999
Kurzweil Mark Pro TWO SP	64	64	60/4	2	Yes	2/3	1,998
Orla CDP10	9	64	30/2	2	No	5/1	2,024
Roland DP-990	306	128	24/2	3	Yes	5/1	2,095
Yamaha CLP-320	10	128	40/2	1	No	5/5, in-home	1,945



Roland DP-990

Speakers and Speaker Power: The number and quality of speakers will affect the “trueness” of the sound over the ranges of both frequency and volume. A larger number of watts of power will allow the music to be played at higher volume without breaking up. However, if you’re planning to play through headphones, this spec is irrelevant.

Recording Tracks: If you’re just after basic recording as a practice aid, any of these instruments will suffice. Two tracks give you the ability to separate the left and right hands in recording. Three tracks let you split out the bass and harmony parts of the left hand. Beyond that, you need to consider 8, 16, or more tracks. (If the ability to record multiple tracks is a central concern for you, you probably have software on your

computer that vastly exceeds the capabilities of even the most advanced digital piano.)

USB to Computer: This is purely a matter of convenience and cost. Even if your piano doesn’t come with this feature, you can buy a MIDI-to-USB cable for \$30 to \$50 and still stay within your budget. Of course, if you have no intention of connecting your digital piano to your computer, you can skip this one.

Warranty: This is basically a tie-breaker. If you’re down to two models and just can’t decide, then the better warranty may sway you.

Looking at Table 1, we can see that the Roland DP-990 is a stand-out in every way except for speakers and speaker power, where it’s comparatively weak. This model could

be the best choice if you plan to use it exclusively through headphones. If you’re willing to spend another \$100 to \$150 for an amplified speaker (discussed below), you could make this instrument into a real winner. The Orla CDP10 and the Yamaha CLP-320 offer the smallest number of voices, and are less impressive in some of the other specs as well, but would still be more than sufficient for basic uses. The other models shown are somewhere in between.

Not shown in the specifications is the fact that there may be a trade-off between features and appearance. The Roland is able to offer so much for the money in part because its cabinet design is quite simple. The Yamaha and Kawai, on the other hand, would look good in any living room.

Slabs and Stage Pianos

Next we’ll consider the option of a slab or stage piano. For this option, we have to leave room in the \$1,995 budget to accommodate a stand, a bench, and (unless you’ll be playing exclusively through headphones) amplified speakers, as most stage pianos don’t come with these features. A double-X stand (think of the X formed by, say, an ironing board’s legs, then link two of them together in parallel) offers the best stability and load-carrying structure for the price (about \$50). Avoid single-X designs, as these tend to wiggle during playing, and struggle to support the heavier stage pianos. A folding-style padded bench can also be had for about \$50. A few are available for substantially less, but they tend

TABLE 2: SLAB OR STAGE PIANOS IN THE \$1,995 PRICE RANGE AFTER ADDING ACCESSORIES AND AMPLIFIED SPEAKER

Brand/Model	Voices	Polyphony	Watts/ Speakers	Recording Tracks	USB to Computer	Warranty parts/labor (years)	Est. Price
Kawai ES6	32	192	26/6	2	Yes	3/3	\$1,699
Kawai MP8II	256	192	0/0	0	Yes	3/1	1,895
Roland RD-300GX	366	128	0/0	0	Yes	1/90 days	1,599
Yamaha CP50	322	128	0/0	0	Yes	3/3	1,699

to have less padding, and can have weak seams that may split.

As for the amplified speaker system, my first choice of one that will provide solid audio performance without breaking the bank is the Logitech Z2300. This robust, 200-watt, 2.1 (two satellite speakers and a subwoofer) system has a list price of \$150, but is typically available for a little less. You can certainly get by without this power level, but these speakers will work wonders on the sound of most digital pianos (including some of the consoles mentioned earlier).

Altogether, then, you should allow \$200 to \$250 for accessories, leaving \$1,750 to \$1,800 for the instrument (or, leaving a little wiggle room, \$1,650 to \$1,900). Once again, looking at the chart of **Digital Piano Specifications and Prices**, we find the following instruments that match our requirements: Kawai ES6, Kawai MP8II, and Yamaha CP50. And although it's priced slightly under our budget range, we'll also include the Roland RD-300GX, which offers features similar to the others for a little less money. Table 2 shows how these choices stack up against one another.

As you can see, the Kawai ES6 differs from the others in this category in that it has built-in speakers. It also comes with 100 rhythms and automatic accompaniments, making it the sole entry here that falls into the *ensemble* category, and therefore the one that may offer the most flexibility. With only 26 watts powering an unusual array of six speakers, you might not be completely satisfied with the onboard sound, but remember—the budget includes an amplified speaker system.

The other three models in this category are powerhouse, pro-level stage pianos, a topic covered more completely in the online edition of the Fall 2009 issue of *Piano Buyer*. (There, the Kawai MP8II is reviewed, as are the Roland



Logitech Z2300

RD-700GX and Yamaha CP300, more-expensive cousins of the models shown here.) Although they don't have built-in speakers, these stage pianos do come with a huge number of voices, and the Roland also comes with 200 rhythms and some onboard recording capability. The Yamaha CP50, which also comes with 100 rhythms, is a new addition to Yamaha's stage-piano arsenal. It combines traditional (in digital piano terms) sampling technology with emerging physical modeling technology. (See "**Other Methods of Voice Production**" in "Digital Piano Basics, Part 1: Imitating the Acoustic Piano," elsewhere in this publication.)

Software Pianos

Finally, let's explore an option you might not have thought of when looking for a \$1,995 digital: the software piano. In a software piano, the piano sound is provided by specialized software that runs on your computer, the digital processing is supplied by your computer, and the keyboard controller (and possibly the audio system) is usually supplied by a digital piano. (A basic introduction to software pianos appears in the article "**My Other Piano Is a Computer**," elsewhere in this publication.) Now there are more puzzle pieces to play with, adding to the picture both flexibility and complexity. Here, every choice becomes part of the budget-balancing

act: In addition to the stand, bench, and speakers in the stage-piano option above, now we need to look at software, revisit the keyboard, and evaluate the computer. Since it's likely that you already have a computer that will handle the entry-level to midrange software pianos available, we'll focus on the rest of the elements required for this option.

We can stick with the same stand, bench, and speaker choices established for the stage piano at around \$250; this leaves \$1,750 for a keyboard and software. A number of piano software packages can be had for \$350 or less, leaving \$1,400 for the keyboard. Just in case you need to spend a little money on computer upgrades (more memory, bigger hard drive), we'll cap the digital-piano budget at \$1,200. This price yields several excellent but very different options (see Table 3). Note that while we could go with an 88-note weighted MIDI controller keyboard and save some money, using a digital piano as the keyboard for the software piano offers the flexibility to use the instrument in situations where the computer isn't handy.

Here we have a Kawai MP5 stage piano with hundreds of voices but no built-in speaker system, similar to the model MP8II mentioned earlier, but with a less-advanced action, and plastic (instead of wood) keys. Two other instruments, the Yamaha P155 and Orla Stage Player, each has only a modest number of voices, and a lightweight onboard speaker system that would benefit from the amplified speaker our budget includes. However, if you do use a separate amplified speaker system, or if you use headphones exclusively, the Kawai appears, from the specs alone, to offer somewhat more for the money—but any of the keyboards listed could be an excellent choice as the keyboard for a software piano. The Yamaha or Orla

TABLE 3: SLAB OR STAGE PIANOS AS PART OF A SOFTWARE PIANO SETUP IN THE \$1,995 PRICE RANGE

<i>Brand/Model</i>	<i>Voices</i>	<i>Polyphony</i>	<i>Watts/ Speakers</i>	<i>Recording Tracks</i>	<i>USB to Computer</i>	<i>Warranty parts/labor (years)</i>	<i>Est. Price</i>
Kawai MP5	256	192	0/0	0	Yes	3/1	\$1,199
Kurzweil SP2X	64	64	0/0	0	Yes	1/1	1,099
Orla Stage Player	16	64	30/2	2	No	5/1	1,082
Yamaha P155	17	128	24/2	2	No	1/1	1,199

TABLE 4: A FEW OF THE SOFTWARE PACKAGES COSTING \$350 OR LESS AVAILABLE FOR USE ON MIDRANGE COMPUTERS AS PART OF A SOFTWARE PIANO SETUP

<i>Software</i>	<i>Pianos Included</i>	<i>Recommended System Requirements (see websites for minimum requirements)</i>	<i>Price</i>	<i>Developer's Website</i>
East West Quantum Leap Piano Gold Edition	Bechstein D-280 Bösendorfer 290 Steinway D Yamaha C7	55GB free HD 4GB RAM (Mac) 8GB RAM (PC) Mac: 2.5GHz Pro Quad-Core Xeon PC: 2.0GHz Quad Core	\$314	www.eastwestsamples.com
Ivory	Bösendorfer 290 Steinway D (Hamburg) Yamaha C7	41GB free HD 2GB RAM Mac: 1.5GHz G5 PC: 2GHz Pentium 4	\$349	www.synthogy.com
Galaxy II	Blüthner Vintage 1929 Bösendorfer 290 Steinway D	30GB free HD 1GB RAM Mac: 1.8GHz G4 or 2GHz Core 2 Duo PC: 2.4GHz Pentium/Athlon	\$350	www.galaxypianos.com www.eastwestsamples.com

might be preferred for their onboard recording capabilities, or if an internal speaker system is sometimes needed.

We have \$350 left to spend on software for our software piano. So what will it be: Bechstein, Blüthner, Bösendorfer, Fazioli, or Steinway (New York or Hamburg)? The great thing about software pianos is that, over time, the answer could be “all of the above.” All of these pianos and more are available in our price range, but hold on—before you buy the software, you need to make sure it’s something your current computer can handle; if you have to buy a new computer, you’ll blow a big hole in your \$1,995 budget. Most software packages list their requirements, so it’s easy to compare them with your computer’s specs: the amount of free space available

on your hard drive; the amount of memory, or RAM, your computer has; and the speed and type of its central processing unit (CPU). See your computer documentation for instructions on how to find the specs for your computer.

Assuming the specifications of a two-year-old midrange computer, some of the software packages that will work with it are shown in Table 4. These are just a few of the options; demonstration recordings and screen shots for most of them are available on their websites.

The software piano option will be especially appealing to those for whom the quality and realism of the piano sound are particularly important factors in choosing a digital piano, such as the classically trained, and other connoisseurs of the acoustic piano exploring the

world of digital pianos. As you can see from the amount of free hard-disk space required to install these packages, the sample sets average more than 12GB per individual instrument. This is vastly larger than the amount of storage available on the majority of digital pianos, and allows for much greater sample detail and nuance.

So, the seemingly simple question of which digital pianos can be purchased for \$1,995 has produced more than a dozen options, spread over three different approaches: console pianos, slab or stage pianos with outboard sound systems, and software pianos. I’m betting *your* piano—the one that meets your musical needs, suits your preference in visual appearance, and whets your appetite for adventure—is in there somewhere. ■■■■



MENTION THE WORD *hybrid* today and most people think of cars that combine a traditional internal-combustion engine with an electric motor to improve gas mileage and reduce emissions. By definition, a hybrid—whether a rose, a breed of dog, or a car—results from the combination of two different backgrounds or technologies. Now the piano has joined the ranks of the hybrids.

A hybrid piano combines electronic, mechanical, and/or acoustic aspects of both acoustic and digital pianos, in order to improve or expand the capabilities of the instrument. While applying the term *hybrid* to piano designs is a recent development, the practice of combining elements from acoustic and digital pianos is more than 25 years old.

A hybrid piano can be created from either an acoustic or a digital piano, but we need to be clear about our definitions of *acoustic* and *digital*. The essential difference between acoustic and digital pianos is in how the sound is produced. In an acoustic piano, a sound is produced by the mechanical act of a hammer hitting strings, causing the strings to vibrate. In a digital piano, the sound is produced electronically, either from previously sampled acoustic pianos, or by physical modeling that employs a mathematical algorithm to produce sounds like those of an acoustic piano. (Here we're speaking only of that aspect of a digital piano that is designed to produce a piano-like sound. Digitals typically also can produce many other instrumental and non-instrumental sounds.)

Acoustic-based Hybrids: the MIDI Controller

On the acoustic side, the original hybrid instruments were not new pianos, but modifications of already

existing pianos. In 1982, with the advent of Musical Instrument Digital Interface (MIDI), a computer language for musical instruments, instruments from different makers could “speak” to one another. Soon after, various kinds of mechanical contacts were invented for placement under the keys to sense key-stroke information such as note, key velocity, and duration, and convert it into MIDI data. This MIDI information was then routed to synthesizers, which turned the information into whatever instrumental sounds the attached synthesizer was programmed to produce. When one instrument is used to control another in this manner through the transmission of MIDI information, the first instrument is called a MIDI controller. At the beginning, however, the sound of the acoustic piano could not be turned off, though it could be muffled in vertical pianos.

Early mechanical key contacts were subject to breakdown, or infiltration by dust, and their presence could sometimes be felt by sensitive players and interfere with their

playing. The more advanced key contacts or sensors used today involve touch films or optical sensors that are more reliable and accurate, and add no significant weight to the touch. In time, also, mechanisms were invented for shutting off the acoustic piano sound entirely, either by blocking the hammers from hitting the strings, or by tripping (escaping) the action train of force earlier than normal, so that the hammers lacked the velocity needed to reach the strings. Headphones would block out any remaining mechanical noise, leaving only the sounds of the electronic instrument.

Not surprisingly, most makers of these MIDI controller/acoustic hybrid systems have been manufacturers of electronic player-piano systems. The same MIDI sensor strip used under the keys of these systems for their Record feature (which allows players to record their own playing for later playback) can also transmit the MIDI information to a digital sound source: either an internal source that comes with the piano (a *sound card*) or an external one, such as a synthesizer or a computer with appropriate software installed. All player-piano systems today allow, through MIDI control, for the accompaniment of the acoustic piano sound by digitally produced sound, be they other piano-like sounds, other instrumental sounds, or even entire orchestras.

In addition to the accompaniment function, it turns out that these hybrid systems in which the acoustic piano can be silenced potentially have another very practical function. If your playing is likely to meet

with objections from neighbors or family, being able to silence the piano and then play as loudly as you want, while listening through headphones, can be very handy. Realizing this, the major player-piano manufacturers make the MIDI controller feature available—without the player piano—relatively inexpensively. These MIDI controllers include a MIDI sensor strip under the keys, or optical sensors for keys and hammers, but no hardware and electronics that would make the piano keys move on their own. Usually, these systems come with a “stop rail” or other mechanical device to prevent the hammers from hitting the strings, an internal digital sound source, and headphones. When you move a lever to stop the acoustic piano sound, you turn on the digital sound source, which is heard through the headphones. Yamaha calls this instrument Silent Piano (formerly MIDI Piano). Piano-Disc calls their add-on system QuietTime; QRS’s version is called SilentPNO. More information about these systems is included in the article **“Buying an Electronic Player-Piano System.”**

But the accompaniment and “silent” functions of a hybrid MIDI controller/acoustic piano are only the beginning of what it can do. Just as the MIDI signal can be sent to a synthesizer or sound card, it can also be sent to a personal computer or transmitted over the Internet. Regardless of whether a MIDI controller originates in an acoustic or a digital piano, it enables the instrument to interact with music software to record, produce notation, control instrumental voices on a personal computer, or interact with other pianos in the same room or on different continents. The potential for hybrids in creating and teaching music is limited only by the imagination of the user. Notation

softwares—from MakeMusic’s Finale, Avid’s Sibelius, GenieSoft’s Overture, and others—allow the hybrid piano’s key input (playing) to be converted to music notation. This notation can be edited, transposed, split into parts for different instruments, played back, and printed out. The possibilities for teaching are perhaps even more powerful. Taking a lesson from a teacher in a different state or a master class from a performer in a different country becomes possible with hybrid technology, particularly when combined with the player-piano features. Exact copies of performances can be sent to similarly equipped instruments for playback, and critiques—with musical examples—can be sent back to the student. Some systems enable this interaction in real time over broadband connections, complete with synchronized video.

As we’ve said, most of the activity in the field of acoustic hybrids has been among player-piano makers, whose offerings have been either specialized (Silent Piano) or add-ons (QuietTime, SilentPNO). However, MIDI capabilities are now standard in all acoustic pianos, vertical and grand, made by Story & Clark, a subsidiary of QRS, the only piano maker so far to have done this. If you add a stop rail to silence the piano (available from QRS) and a sound source, you could turn one of these instruments into a “silent”

type of hybrid like those described above. But even without those additions, a Story & Clark piano can be used with a personal computer and music software for recording, notation, controlling computer-produced instrumental voices, or any of the myriad other uses possible with a MIDI controller.

Digital-based Hybrids: Replicating the Acoustic Experience

Now, you may wonder: If you’re just going to use a piano to interact with a computer, play piano sounds silently, or make other instrumental sounds, why bother with an acoustic piano at all? Why not just use a digital piano or keyboard of some kind? The reason is: the *experience*. Digital pianos are long on functionality but short on, shall we say, atmosphere. For those used to the looks, touch, tone, or other, less tangible aspects of acoustic pianos, digital pianos, in their “pure” form, just don’t cut it—so digital piano makers have spent a great deal of time, energy, and money trying to mimic one or more of these aspects of acoustic pianos. The closer they get to duplicating the experience of playing an acoustic piano, the more they earn the right to the *hybrid* designation—because, when you get down to it, the function of an acoustic piano *is* the experience.

The first aspect of an acoustic piano that digital piano makers mimicked was, of course, the looks, and a large segment of the digital piano market consists of acoustic piano look-alikes. But that alone isn’t enough to earn the title *hybrid*. Next, the mechanism of the acoustic piano found its way into the digital piano. Much engineering has gone into the numerous action designs in digitals, always in the attempt to make their feel and response as close as possible



All Story & Clark pianos come with a factory-installed PNOscan MIDI strip beneath the keys.

Story & Clark Piano Co.

to that of a “real” piano. For example, Yamaha’s GranTouch line of digital pianos uses a slightly modified acoustic piano action to trigger the piano’s sensors (the hammers are small and don’t actually strike strings). With such an action, there’s no need to simulate certain action processes, such as escapement, because it actually occurs mechanically. Many digital piano actions these days have weighted and/or wooden keys, and other enhancements that do a reasonable job of emulating an acoustic piano action; still, advanced pianists, especially classical ones, are unlikely to be satisfied by most of them.

Of course, digital piano makers have put more effort into copying the tone of the acoustic piano than any other aspect. How they’ve done this is beyond the scope of this article (see “**Digital Piano Basics**” for this information), but one interesting attempt is that of adding a soundboard to the digital. The Kawai CA-91, introduced in 2006, with its Soundboard Speaker System; and the Yamaha CGP-1000 Clavinova in 2007, with its Hybrid Active Soundboard System, both use an actual piano soundboard, set in motion by transducers, to augment the conventional speakers and impart a more natural tone to the instrument.

The latest entry in the hybrid arena is also the first instrument to formally appropriate the title of Hybrid Piano. Yamaha unveiled its AvantGrand N3 at the 2009 music industry (NAMM) trade show in January, and its vertical cousin, the N2, a few months later. The AvantGrand elevates the digital piano to a new level with a number of hybrid technologies. First among them is the use of a grand piano action. As mentioned above, this eliminates any discussion of whether or not it *feels* like an acoustic piano action—it *is*

one. (However, whether the action feels *right* is still a legitimate topic of discussion.) This action controls the digital voices through the use of optical sensors, which measure the velocity of the keys and hammers without actually contacting any part of the action. It’s important to note that this same grand piano action is employed in the vertical model N2, eliminating the second-class citizenship of the vertical piano.

(This brings up the interesting observation that, with digital pianos, there is absolutely no meaningful distinction between “grand” and “vertical” pianos. In an acoustic piano, the principal difference between grands and verticals is that in a grand, the cast-iron plate, strings, and supporting wooden structure lie horizontally, whereas in a vertical

they stand vertically. The actions are arranged differently to accommodate the different structures. But because there are no such structural parts in a digital piano, and the actions are the same, any perceived differences are in name and furniture styling only.)

One element of the traditional acoustic vs. digital argument that changes with the presence of a real action is the digital’s advantage of rarely needing maintenance. While the AvantGrand will never need to be tuned, eventually its action will require some degree of adjustment or regulation. (We’ll bet the piano technician will be in for a surprise when, on arriving to regulate the action, he or she finds the “piano” is a digital.)

But there’s more to the feel of an acoustic piano than its action,



Yamaha AvantGrand model N3

Yamaha

and this brings us to the last of the acoustic piano attributes that digital piano makers attempt to copy: the intangibles. In this case, the “intangible” is actually tangible—the vibration generated by the strings and transmitted throughout the instrument. Yamaha has added this ingredient by connecting transducers to the action to send the appropriate frequency and degree of vibration to the player’s fingers when playing. This is where the experience of playing the AvantGrand becomes a bit . . . spooky. Not unlike the experience of amusement-park rides that convince your brain that you’re dodging asteroids while hurtling through space when you are, in fact, fairly stationary, the AvantGrand’s Tactile Response System quickly convinces you that you’re feeling the vibrations of strings that aren’t actually there.

The illusions don’t stop there. When you depress a digital piano’s sustain pedal, you’re pressing a spring with a constant tension. This is not how the sustain pedal feels on most acoustic pianos, in which the initial movement meets little resistance as the pedal takes up a bit of slack in the mechanism that lifts the dampers. Once the mechanism begins to lift the dampers, the resistance increases noticeably. Here again, the AvantGrand does a convincing job of conveying the feel and—perhaps more important—the pedal control available on an acoustic piano, including half-pedaling and incremental control. A four-channel sample set and a 12-speaker audio system are also convincing, easily tricking your ear into thinking that there are considerably more than four feet of piano in front of you.

Which Side Are You On?

One area in which digital pianos are not intended to emulate acoustics

is that of price. The AvantGrand model N3, with the sound, and perhaps the feel and experience, of a Yamaha concert grand, has an MSRP of \$19,999 and a street price of around \$15,000. This is roughly comparable to the price of a 5'3" Yamaha model GC1M, one of Yamaha’s lower-level consumer-grade acoustic grands. This could create something of a dilemma for a potential buyer: acoustic or digital? Actually, the comparison would be more valid if the GC1M were fitted with an aftermarket “silent” mechanism, sound card, and MIDI sensor strip at a cost of about \$2,500, or if the comparison were with, say, a Yamaha 5'3" model C1S Silent Piano, with a street price of about \$22,000. Then, the AvantGrand would be from 15% to more than 30% less costly than the acoustic-based hybrid, and with features the acoustic did not have, such as onboard recording, USB memory, transposition, and alternate tunings. (Of course, if you compared the price of the AvantGrand with an actual Yamaha concert grand, which the AvantGrand is intended to emulate, the savings would be around 90%.)

As the market for hybrid pianos heats up, buyers will increasingly have to choose between acoustic pianos with digital enhancements and digital pianos that try to create the acoustic experience. Decisions will be made by weighing the relative quality, and importance to the buyer, of action, tone, looks, price, and features. More advanced classical pianists whose digital needs are modest, and buyers who, among other things, are looking to fill up a living room with a large, impressive piece of furniture, will probably tend to stick with the acoustic-based hybrid for now. Those whose musical needs are more general, or who have a strong interest in digital features,

may find digital-based hybrids more cost-effective.

Another factor that may come into play is that of life expectancy. A good acoustic piano will typically function well for 40 or 50 years, if not longer. Few digital pianos made 15 to 20 years ago are still in use, due either to technological obsolescence or to wear. True, the relevant technologies have evolved, as has the design of digital pianos and the quality of their construction. Realistically, however, if past experience is any guide, pianos that are largely acoustic with digital enhancement may well last for many decades, while those that are digitals enhanced with acoustic-like features are unlikely to last as long.

The piano has evolved a great deal since Bartolomeo Cristofori invented it in 1700, and that evolution continues. Today it is possible to buy a piano with an ABS-Carbon action (Kawai), a carbon-fiber soundboard (Steingraeber Phoenix), or one that looks as if it was made for the Starship *Enterprise*! The hybrid piano’s blending of acoustic and digital technologies is just another step—or branch—in that evolution. 🎹



Beam me up, Larry!

www.Seiler-Pianos.de

SOME OF YOU may have fond memories of gathering around Grandma's old upright player piano and pumping those huge pedals to make it play—until you could hardly walk! As with so many other devices, technology has revolutionized the player piano, replacing the pneumatic pressure and rolls of punched paper with electronics, CDs, and iPods. Today, nearly one out of every three new grand pianos is sold with an electronic player-piano system installed. The capabilities of these systems range from those that simply play the piano (often all that's desired for home use) all the way to those that allow composers to create, play, and print entire orchestral scores without ever leaving the piano bench. You can even watch a video of Billy Joel in concert on a screen built into your piano's music rack while, simultaneously, his "live" performance is faithfully reproduced on your piano! The features and technological capabilities are vast and still evolving.

Before you begin to wade through the possibilities, you should carefully consider your long-term needs. Since many of the features of the more sophisticated systems are related to recording one's performance, you should first decide whether or not you want the ability to record what you or others play on your piano. In many typical family situations, the piano, just like Grandma's, is primarily used for the children's lessons and for entertainment. If that's the case, one of the more basic systems, without recording capabilities, will likely be satisfactory. Most systems can be upgraded to add recording and other more advanced features, should you later find them desirable. However, as technologies advance, it may become increasingly difficult to upgrade your older system.

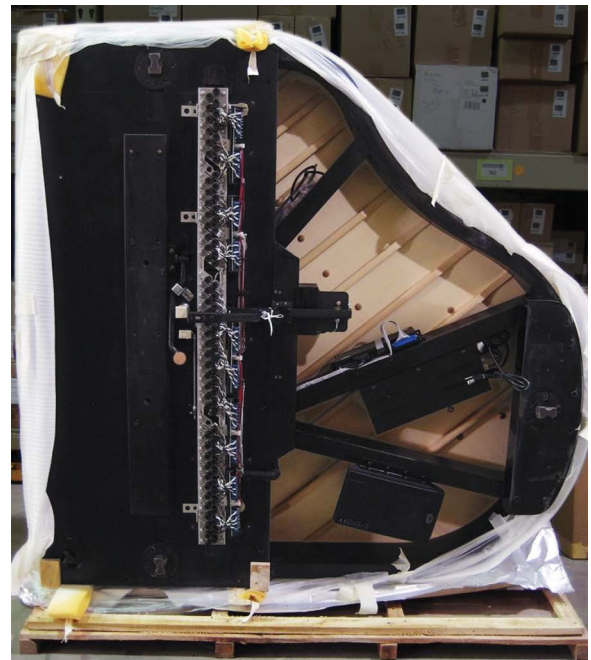
Some player systems can be added (retrofitted) to any new or used piano, while others are available only on a specific make of piano. When installed in a new piano, some must

be installed by the piano manufacturer, while others can be installed by the dealer or at an intermediate distribution point. A factory-certified local installer of a retrofit can usually match the quality of a factory installation. Installation is messy and must be done in a shop, not in your home; but when done correctly, it won't harm the piano or void its warranty.

The player systems currently on the market can be described as falling into two categories: those intended primarily as home-entertainment systems or for lighter professional use (including commercial use in restaurants, hotels, etc.), and those whose playback and recording

functions are of "audiophile" quality and are intended for the most discriminating or high-level professional users. Generally speaking, the first category includes systems by PianoDisc, Pianoforce, QRS, and most Yamaha Disklaviers; the second category includes the Bösendorfer CEUS, Live Performance, and Disklavier Pro models. However, this classification scheme doesn't entirely do justice to "home entertainment" systems, which can be more sophisticated in other respects, such as versatility and functionality, than some "audiophile" systems.

The quality of a piano performance, either by a sophisticated electro-mechanical reproducing system or by a human being, greatly depends on the overall quality and condition of the instrument being played. Thus, an out-of-tune and/or ill-voiced

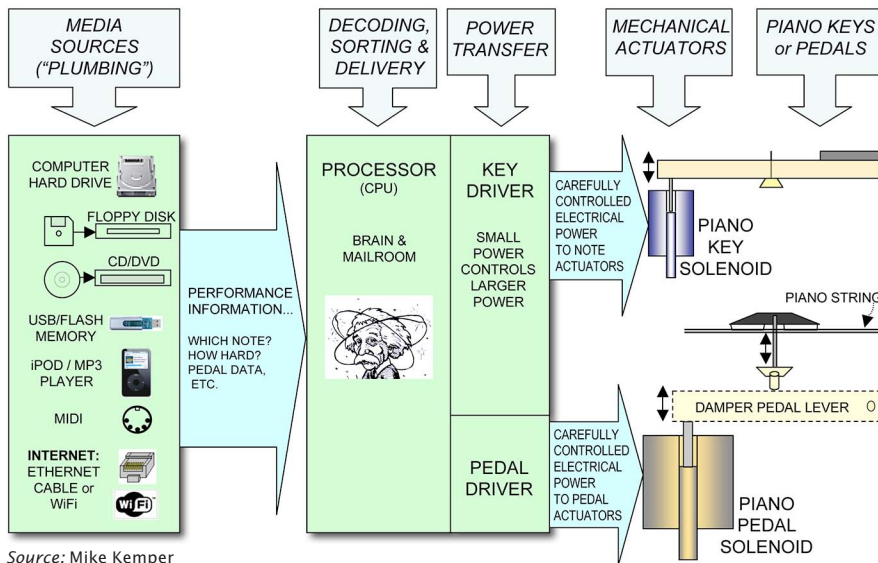


The underside of a grand piano with solenoid rail (uncovered), power supply, and speaker installed.

QRS Music Technologies, Inc.

ELECTRONIC PLAYER SYSTEMS

HOW DO THESE THINGS MAKE THE PIANO PLAY?



Source: Mike Kemper

piano with a poorly regulated action would result in an unpleasant listening experience, whether played by human or machine. This, of course, emphasizes the importance of regular and proper maintenance of the instrument. With new pianos, the performance quality of the player-piano system is limited, to a large extent, by the performance quality of the piano itself. Don't scrimp on a piano to afford a player system.

How a Typical Electronic Player-Piano System Works

Basic player systems consist of:

- a solenoid (electromechanical actuator) rail installed in a slot cut in the piano keybed (the structural part of the piano that supports the keys and action)
- a processor unit and other electronics mounted under the piano
- a control box that plays floppy disks and/or CDs (depending on the model), and is either mounted under the keybed at the front of the piano, or sits on or near the piano. In some models, the con-

rol box contains no disk drives and is hidden away under the piano, depending instead on your own CD player, MP3 player, or other device for the musical input.

- a remote-control device for operating the control box from a distance
- one or more amplified speakers, unless you choose a system configuration that uses your own speakers

On the solenoid rail, there is one solenoid for each key. There is also a solenoid for the damper pedal and, sometimes, one for the una corda (soft) pedal. Each solenoid contains a mechanical plunger that, when activated by an electronic signal, pushes against a key or against the pedal trapwork. When playing compatible specialized software, one track contains the MIDI signal that drives the piano solenoids; the other tracks provide an instrumental and/or vocal accompaniment that plays through a stereo system or through amplified speakers that come with the player system. The accompaniment may be in the form of

synthesized or sampled sounds, or actual recordings of live musicians.

For recording, keystroke and pedaling information are recorded in MIDI format by a sensor strip installed beneath the keys and sensors attached to the pedals. Some systems also record hammer motion. This information can be stored for later playback on the same piano, stored on other media, or sent to other MIDI-compatible devices.

The same sensors used for recording can turn the piano into a MIDI controller. Add headphones, a device for mechanically silencing the acoustic piano, and a sound card or other tone generator, and you essentially have a hybrid acoustic/digital piano you can play late at night without disturbing anyone. Because this feature can be used independently of the player piano, most manufacturers of these systems make it available separately under such names as Silent Piano (Yamaha), Quiet-Time (PianoDisc), and SilentPNO (QRS). Of course, the MIDI controller can also be used with or without a tone generator to send a MIDI datastream to a computer for use with composing and editing software, among other applications. (See the article "Hybrid Pianos" in this issue for more information.)

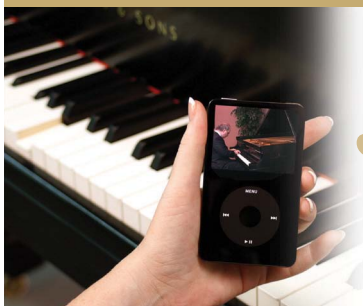
Common Features

Basic player-piano systems share a number of features:

- playback of piano music with a good reproduction of the artist's performance
- playback of piano music with a full band, orchestral, and/or vocal accompaniment (yes, it will sing!)
- a repertoire of thousands of songs and the ability to download music from the Internet
- connectivity to home sound or home-theater systems
- remote control



No Piano Left Behind



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PianoDisc

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Other capabilities, in a variety of applications, are considered valuable tools for composers, educators, and students, as well as performers. They include:

- a system of sensing key and pedal motions that can capture and record the nuances of a live performance for later playback or editing
- playing every instrument of the orchestra (and then some!), using the piano keyboard coupled with an onboard and/or outboard sound module
- the ability to import and export performances through a variety of wired/wireless connections, including MP3s, iPods, the Internet, etc.
- synchronizing a solo-piano performance on your piano with a commercially available CD or DVD of a famous performing artist
- Internet radio that streams data specifically formatted for the player system, for a virtually unlimited supply of musical input
- connectivity to a computer, facilitating music editing, enhancing, and printing
- connecting to teachers and other players anywhere in the world via the Internet

In addition to bundling some amount of music software with the purchase of their systems, most manufacturers record and separately sell software for their systems on floppies, CDs, or DVDs, or as downloads from a website. A significant caveat is that one manufacturer's software may—by design—not work unconditionally with another player's hardware.

Questions to Consider

To list and compare the wide variety of features and capabilities offered by each of the player systems would be beyond the scope of this article.

However, the most significant concerns, aside from price, are the following. Ask your dealer or installer about the ones that interest or concern you.

- **Installation:** Can the system be installed in any piano (retrofit), or is it exclusive to a particular brand of piano? If exclusive, this will limit your options as to what brand of piano to buy.
- **Music Source:** Do you have a preference of source of music for the system: CDs, floppies, Internet downloads, iPod, MP3 player, etc.? This will influence your choice of system brand and configuration.
- **Recording:** Do you need recording capability, or the ability to use the system as a MIDI controller? This will also allow you to play silently with headphones, or to connect to a computer to edit and transcribe music, among other benefits.
- **Wireless:** Do you need to operate the system from a distance? Most systems have a wireless remote control available. Some can also be adapted for wireless transmission of music from the control box to the piano—for example, in a commercial establishment, where a CD player must be located some distance from the piano.
- **Visibility:** Is it important to you that the control unit not be visible or be very unobtrusive? Some models may be more suitable in this regard than others.
- **Equipment:** Do you need a system with a CD player, floppy disk drive, and/or iPod included, or will you be supplying your own? Do you need speakers or a video monitor, or will you be connecting the system to your own stereo system or home theater?
- **Memory:** Do you need internal memory for data storage, or will

you be using external data storage? Can external memory be connected?

- **Software Compatibility:** Can it play the music libraries of other manufacturers' systems? It's important to note, however, that because competitors sometimes change their formats and encryption, the ability to play the data format of a particular competitor's software may not be guaranteed.
- **Dynamic Resolution:** How many gradations of volume can the system record and play back? Most systems record and play back in 127 increments, which is more than sufficient for most uses. Some pre-recorded CDs play back with as little as 16 levels of expression—still probably enough for casual use, but you should test out the type of music you expect to listen to to see if it meets your musical expectations of dynamic range (gradations of loud and soft). A few systems can handle 1,000 or more increments. This may be desirable for high-level professional or recording applications, or for the most authentic playback of complex classical compositions. Likewise, some have higher processor speeds that scan the system a greater number of times per second for greater resolution. Some record by sensing only key movements, while others, for greater accuracy, also sense hammershank movements.
- **How many notes play back?** Some systems provide playback support for all 88 notes, while others come standard with as few as 80 solenoids (the highest and lowest four notes are not supported), with 88 as an option. The reason for providing only 80 is that installing more than that number sometimes requires removing

some wood from the top of the piano legs to accommodate the extra solenoids. This is not visible and doesn't harm the piano, but may not be desired by some customers. Most available music software will play just fine on 80 notes. But if you're planning to record yourself and use the notes at the extremes of the keyboard, or if you know you'll be playing back music recorded elsewhere that uses all 88 notes, you'll want the system to be able to play them. If that's the case, be sure to let the dealer or installer know.

- **Pedals:** Which pedals are played by hardware (solenoids) and which, if any, are mimicked by software? Hardware provides a more authentic piano performance, but duplication of pedal functions by software is simpler. Most important is hardware support for the sustain (damper) pedal, and all systems currently provide that. Only a few also provide hardware for the soft pedal (less important), and fewer still for the sostenuto (middle) pedal (unimportant).
- **Damper Pedal Performance:** Does it record multiple damper-pedal positions, allowing for pedaling techniques such as "half-pedaling," or does it simply record an "on" or "off" position? As with dynamic resolution, the recording and playback of multiple pedal positions is desirable for an authentic performance experience. The on/off mode is sufficient for very casual or simple uses.
- **Pedal Functionality:** Some add-on (retrofit) systems, when installed, may alter the functionality or feel of the pedals, especially the middle pedal. If possible, try playing a piano on which a similar player system is installed to see if the pedal operation is

okay for you. If only the middle pedal is affected, it might not matter to you, because this pedal is rarely used.

- **Playing Softly:** How well does the system play softly without skipping notes and without excessive mechanical noise? This is especially important if you plan to use the player piano for soft background music. If so, be sure to try out the system at a low volume level to be sure it meets your expectations.
- **Music Software:** How well does the available music software satisfy your needs?
- **Options:** What special features, advantages, and benefits are included or are optionally available? Examples include the ability to synchronize the piano with commercially available CDs and DVDs, features used for teaching purposes, built-in video monitor, subscriptions to Internet music libraries or streaming radio that make available virtually unlimited input to your piano, bundled music software, and so forth.
- **Upgradability:** To what extent is the system upgradable? Most systems are highly upgradable, but the upgradability of some entry-level systems may be limited.

How Much Player-Piano Systems Cost

The cost of electronic player-piano systems varies enormously, not only from one system to the next, but even for the same system, depending on where it is installed and other factors.

A dealer has several ways of acquiring an add-on (retrofit) player system, which can affect the price at which the system is sold. Factory-installed systems—installed while the piano itself is being manufactured—

are the least expensive for the dealer to acquire. Several large piano manufacturers are authorized to do this. In addition, the companies that make the player systems may factory-install them into brands that they own; for example, QRS Pianomation into the Story & Clark brand, and PianoDisc into the Mason & Hamlin brand. When installed this way, the difference in price between the piano alone and the piano plus player system may be quite moderate. The next more expensive options are when the player system is installed at an intermediate distribution point before reaching the dealer, or when a larger dealer, in his own shop, installs a system in a piano already on the showroom floor—with most brands of piano, either of these can be done. More expensive yet is when the smaller dealer must hire a local independent installer to install a system in a piano that is on the dealer's showroom floor. The most expensive option is to have a system installed in a piano you already own. In that situation you also incur the expense of having the piano moved to and from the installer's shop. The resulting retail price of the most expensive option can be double that of the least.

The cost can also vary because player systems are often used by dealers as an incentive to buy the piano. The dealer will charge well for an expensive piano, then "throw in" the player system at cost. Or vice versa—the dealer lets the piano go cheaply, then makes it up by charging list price for the system. The more modular systems can also vary in price, according to which options and accessories the dealer includes.

For all these reasons, quoting prices for player systems without knowing the context in which they're installed and sold is nearly futile. Nevertheless, as a rule of thumb, one of the more popular, typically

configured, factory-installed QRS or PianoDisc systems with playback and accompaniment might add \$5,000 to \$6,000 to the street price of the piano, with recording capability adding another \$1,500 or so. However, for the reasons given above, prices 30 percent lower or higher aren't unusual. A list of electronic player-piano add-on systems and their manufacturers' suggested retail prices follows the "**Model & Pricing Guide**" in this publication.

As for systems available only as factory installations, Yamaha Disklavier grands generally cost \$10,000 to \$15,000 (street price) more than the same Yamaha model without the player system. At the high end, a Bösendorfer CEUS will set you back \$40,000 to \$50,000 (street price). The retail prices of these systems are included under their companies' listings in the "**Model & Pricing Guide.**"

THE SYSTEMS

BÖSENDORFER CEUS

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Bösendorfer's SE Reproducer System, out of production for a number of years, has been replaced by an all-new design called CEUS (Create Emotions with Unique Sound), with updated electronics and solenoids. The visual display is discreetly located on the fallboard and is wireless, so the fallboard can be removed for servicing the piano without the need to disconnect any wires. Player controls for recording, playback, and data transfer are by means of a combination of keystrokes on the sharp keys aligned with the fallboard display, pedal movements, and four small, brass, touch-sensitive buttons on the left side of the fallboard. When the system is inactive, these four brass buttons are the only evidence that the CEUS system is installed in the piano. Optical sensors measure key and hammer movements at an extremely high sampling rate, for maximum accuracy and sensitivity to musical nuance. Bösendorfer has a library of recordings for CEUS, and the system will also play standard MIDI piano files. CEUS is available in every Bösendorfer grand model and adds about \$60,000 to the piano's list price. Retrofitting of CEUS into previously sold Bösendorfers is available at the factory.



The black keys aligned with the fallboard display are among the controls used to operate the Bösendorfer CEUS.

LIVE PERFORMANCE MODEL LX

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Live Performance was founded in 1992 by Wayne Stahnke, one of the world's foremost authorities in the field of electronic player-piano systems. Stahnke is perhaps best known for designing the SE reproducing system, which Bösendorfer factory-installed in its pianos in the mid-1980s.

In 2007 Live Performance introduced its own player-piano system, the Model LX, providing playback performance the company says approaches that of the legendary SE system at a price competitive with other retrofittable player systems.

Compatible with any grand piano, the LX employs the technical specifications of the SE's playback system, including a high keyboard sample rate (800 times per second), high-resolution note expression (1,020 dynamic levels for each note), 96-note polyphony (which, for an 88-note piano, means unlimited), and proportional pedaling (256 positions). Among the LX's unique features is the immunity of its expression to variations in line voltage, using a patented proprietary method. The LX also features a closed-loop pedal servomechanism that enables it to reproduce with great accuracy a pianist's use of the sustain pedal—especially subtle half-pedaling effects. The sostenuto and una corda pedals are software-emulated. The LX does not include a Record feature.

In the interest of being future-proof, the LX does not include a proprietary control unit. Instead, it is driven by a CD, DVD, or MP3 player, a wireless link, a home

music-distribution system, or other source of stereo audio. This provides maximum flexibility and the ability to take advantage of advanced audio technologies as they appear.

The installed LX is more attractive than some other systems because the note solenoids are contained within the keyed slot and so do not protrude beneath the piano. The mounting rail is a rigid steel structure that restores the integrity of the keybed after the slot for the solenoid rail has been cut into it. Because of the solenoid rail's shallow profile, the piano's conventional pedal trapwork doesn't need to be moved or modified to accommodate the system.

The Live Performance Model LX plays all non-encrypted CDs for player pianos, as well as its own high-resolution format. Ten high-resolution albums from a growing catalog are included with the purchase of each LX system. Third-party software is available to encode MIDI and ESEQ (a Yamaha format) files for use with the LX.

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PianoDisc makes retrofit systems—including its popular player systems—that can be added to virtually any piano, grand or vertical, new or used. PianoDisc systems maintain full manual functionality of all pedals, and record and play back all 88 notes. Most piano manufacturers offer factory-installed PianoDisc products, and piano dealers can also have the installation done at their own locations by certified PianoDisc technicians.

PianoDisc's newest player system is the **iQ**. Hidden within the piano



PianoDisc's Sync-A-Vision consists of a high-definition monitor built right into your piano's music rack.

body, **iQ** can play back PianoDisc music using almost any media player (MP3, iPod, iTunes, CD/DVD, and multimedia) as a source. The most popular configuration is bundled with an Apple iPod. Unique within the industry, **iQ** features a patented method of detecting changes to the volume of the music player and automatically adjusts the piano volume to match. Customers can operate all functions of the piano from one familiar device. When combined with the TFT Record option (see below), an **iQ**-equipped piano includes MIDI IN and OUT ports on the instrument itself. This allows for easy connection to a computer-based sequencer or other MIDI device.

PianoDisc's basic system is the model **228CFX**, which has both floppy and CD drives as standard equipment. Its slimline controller can be mounted on the piano or located up to 100 feet away and operated with an infrared wireless remote control (included). The **228CFX** has several options: **SymphonyPro**, a 128-voice General MIDI sound module set to provide sampled-sound orchestration as an accompaniment to the piano; **TFT (Touch Film Technology) MIDI Record** for recording one's playing;

and **MX (Music Expansion)**, a flash memory in which to store music and play it back without having to change a disk.

PianoDisc's entry-level system is **PianoCD**, an easy-to-use system that plays only PianoDisc and regular audio CDs, and has fewer features than the **228CFX**.

The flagship of the PianoDisc line is **Opus7**, the first player system to connect to the Internet. **Opus7** can be controlled via a Web browser or a wireless, Internet-ready Web Tablet with touchscreen and full color. It can download music and system upgrades directly from PianoDisc's website, surf the Web, and receive e-mail (broadband connection required), among other features. **Opus7** comes in two versions, **Opulence** and **Luxury**. **Opulence** is the full system; **Luxury**, designed to integrate with home-automation systems, does not come with the Web Tablet or router, as it's assumed that the home-automation system will already include these or similar interfaces.

Opus7's MX3 hard drive comes with 40 hours of pre-loaded music and will accept standard type 0 and 1 MIDI files available from a wide variety of standard MIDI file

publishers, PianoDisc CDs, and standard audio CDs. Using PianoDisc's PianoCast technology and broadband Internet, Opus7 can connect to one of PianoDisc's Internet radio streams for listening to special events, interviews, and performances, combining a traditional audio broadcast with a piano performance. The "Classical and More" stream features uninterrupted classical music—of interest to hotels or restaurants that need royalty-free background music.

PianoDisc maintains for use on its systems a growing library of music available as digital downloads, floppy disks, CDs, DVDs, and high-definition Blu-ray discs. The library includes solo piano performances by famous artists, piano with orchestral accompaniment (some "live"), and vocals. PianoDisc systems also play any standard MIDI file (type 0), and some discs of other producers.

MusiConnect is a free PianoDisc application for Windows or Macintosh computers that allows consumers to download music purchased from PianoDisc's online music store. With MusiConnect, consumers can import PianoDisc album files or download purchases directly to their computer. MusiConnect also allows customers to load solo-piano or piano-with-orchestral-accompaniment MIDI files into iTunes. Once all the music is downloaded, MusiConnect gives the option of syncing a PianoDisc album or playlist with iTunes. This process creates a matching playlist in iTunes, imports each PianoDisc song, and includes album, artist, and genre information (when available). From there, the music can be loaded into an iPod, or burned to CD.

PianoSync is a MIDI-controlled piano performance that synchronizes with a commercially available audio CD of a major recording artist. PianoSyncs are purchased as downloads or on CD from PianoDisc's

website and stored using MusiConnect. The consumer also purchases the original artist's CD and loads it into iTunes, where the two are merged. The consumer plays the merged file on their piano and hears the original CD along with its new, live piano accompaniment.

PianoVideo HD, the first high-definition video created specifically for modern player-piano systems, combines MIDI, audio, and video. PianoVideo HD technology gives PianoDisc owners the ultimate entertainment experience: as they watch a high-definition video, their piano will play along with it live, in sync with the pianist on the screen. PianoVideo HD performances come on standard-definition DVD or Blu-ray discs.

PianoDisc also offers a stable of complementary products such as **Sync-A-Vision**, which brings the element of HD video to the PianoDisc experience. Sync-A-Vision consists of a 19" high-definition monitor built into a piano music rack, is powered by Apple's Mac mini computer, and comes with pre-loaded educational and entertainment programs. Included are 72 piano lessons, sing-and-play-along karaoke, cartoon and silent-film entertainment, PianoDisc music, and PianoVideo HD performances.

iQ Multi-media DVD Player is a slimline unit that allows you to play MIDI, DVD, CD, MP3, and other file formats from its built-in disc drives, USB port, and SD card slot. With iQ DVD you can play music from PianoDisc's vast music library, play PianoVideos, and connect to PianoDisc's MusiConnect software application.

QuietTime MagicStar can mute an acoustic piano and let the user hear his or her performance through headphones via sampled sound. MagicStar has a control unit with 128 sampled instruments—a full

General MIDI (GM) sound set. It also includes a built-in, adjustable metronome. A MIDI key sensor strip is installed under the keys, and a padded mute rail prevents the hammers from hitting the strings while retaining the motion and feel of the piano action. The mute rail is activated by moving a small lever under the keyboard, which also turns on the sampled sound. MagicStar comes with a control unit, power supply, MIDI cable, MIDI strip, pedal switches, headphones, and mute rail. An entry-level version, QuietTime GT-2, comes with just piano and organ sounds instead of the full GM sound set.

PIANOFORCE

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Pianoforce is a new entrant into the player-piano market under its own name, but the company that makes it—Ncode Ltd. of Bratislava, Slovakia—has been developing and manufacturing front-end controllers for the player-piano systems of other companies, such as Baldwin and QRS, since 1995. In 2005, Pianoforce was first offered as a complete system in the pianos of selected piano makers. In 2006, it was introduced as a retrofit kit installable in any piano, new or old. Designed and built by Ncode in Europe, the kit is ordered through a piano dealer and is typically installed in a new piano either at a distribution point or at the dealer location.

Pianoforce says that its system differs from those of its competitors in that the main rail component also contains all the controlling electronics, eliminating the need for a lot of complicated wiring and making for a neater and simpler installation.

Also, a technician can plug a laptop computer into a USB port on the rail and, using software supplied by Pianoforce, can customize the system to the piano and to the customer's preferences through the control of many playing parameters, such as solenoid force, note release, and pedal release. These custom settings can then be archived on the laptop. The system automatically calibrates itself to the piano's sound with the help of a small sensor mounted on the soundboard. The combination of automatic calibration with manual setup ensures the best playback performance for each individual piano following installation.

In 2007 Pianoforce introduced its latest controller, the Performance. Expanding on the company's past experience in supplying control components for other companies, the new controller contains some of the newest, most advanced features in the player-piano arena, such as the ability to read the software of other systems, including Yamaha Disklavier, QRS (except SyncAlong), and Web Only software, plus standard MIDI files; and onboard connections to the Internet via an Ethernet or wireless hookup, through which the user can download music from Pianoforce or even have system problems diagnosed. There are three USB ports for greater versatility, such as plugging in flash memory or a WiFi key. There is an optical digital stereo output and a dedicated subwoofer output line. The system can now be controlled remotely via the user's iPod Touch or iPhone, and Internet streaming radio is available 24/7 with piano accompanied by original audio tracks.

The system comes with 500 MB of internal memory, pre-loaded with approximately 20 hours of piano music and expandable to 8 GB. The units are also shipped with approximately 400 Star Track piano

recordings. A Star Track is a piano file in MIDI format synchronized to an original audio CD. When the audio CD is inserted, the corresponding Star Track is activated and plays a 30-second sampler accompaniment on the piano.

Keescan, an optional recording feature, uses optical sensors to record key and sustain-pedal movement. Also available is the **AMI** box, which facilitates connection of a microphone, iPod, and other USB devices. In addition to the system's ability to play other makers' software, Pianoforce is building its own library of CDs.

QRS PIANOMATION

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Pianomation is an electronic player-piano system that can be installed in virtually any piano, grand or vertical, new or used. Most manufacturers endorse Pianomation and install it at dealer request at one of their manufacturing or distribution points. QRS does factory installations on many major brands of pianos at its U.S. facilities, and Pianomation can be installed at a dealer location by a technician specially trained by QRS. Note, however, that while most Pianomation systems and controllers can be ordered or installed through any dealer doing business with QRS, the Ancho system (see below) can be purchased only through Story & Clark piano dealers.

Strictly speaking, Pianomation refers to the engine that makes the keys move up and down. It is always sold with a front-end controller as part of one of the systems described below. Pianomation systems are very modular; components can be mixed

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QRS Music Technologies, Inc.

The QRS Pianomation Ancho controller includes CD and CompactFlash drives.

and matched to meet the requirements of many different situations, including the complex needs of commercial establishments.

The simplest and least expensive controller is the **2000C**. The control box is hidden under the piano. It has no built-in disk drives, instead using the owner's stereo components (CD, DVD, or MP3 player) to drive the Pianomation engine and play QRS content. The background music comes from the user's stereo system, while a wireless transmitter sends the piano data to the Pianomation system. The **2000CD+** is similar, but with a provided CD player that plays QRS CDs.

The **Petine** (sometimes called **Petine CD**) control box is slim—just over 1.5 inches tall—and includes both a CD drive and a CompactFlash drive. The CD drive will play audio and data CDs (CD-ROMs), the latter potentially containing thousands of MIDI files on a single disc. (This controller plays Standard MIDI files types 1 and 0.) Other sources of music for playback include the internal memory, which comes with 24 songs, and auxiliary input, for an external computer, iPod, or MP3 or CD player. The system can accept QRS's optional PNOscan MIDI Record strip, with which the

user can record and playback performances with Pianomation. An optional sound card is also available. The Petine has a three-digit LED display, and can be controlled by a data wheel or an infrared remote control. It also has a headphone output, microphone input for karaoke, and internal memory storage. The operating system is flash-upgradable. The Petine comes standard with a CompactFlash card containing a large sampling of free music from the QRS music library. The Petine LT model is a version without a CD drive.

The **Ancho** controller performs all the functions of the Petine, but with a more user-friendly, 20-character alphanumeric display and dedicated transport controls for navigating without a remote. It comes standard with a sound card (optional on the Petine), as well as a CompactFlash card with hundreds of songs.

Both systems come standard with a speaker. Both the Ancho and Petine have mixed and unmixed audio outputs: the background music track and the piano track can be mixed for piping around the house, but the piano track can be omitted from the speakers in the room containing the piano. Individual sources of audio sound can be finely adjusted to sound properly balanced at any volume level. Dual USB ports and an S-video output are on board both controllers but are not yet implemented.

The MIDI information on Pianomation CDs is in analog format: compressed by QRS's patented AMI (Analog MIDI interface) technology, then uncompressed and translated back into digital format as it is received by the piano for playback. The analog signal can be transmitted to the piano by radio waves using the optional wireless transmitter and receiver, which could be handy for use in commercial establishments, or when you don't want to run wires

between the CD player and the piano.

SyncAlong is a MIDI-controlled piano performance that synchronizes with a commercially available audio CD of a major recording artist. SyncAlong CDs play on the Ancho and Petine. A **Transcription** series, similar to SyncAlong but without the background music, is also available. In this series, a solo-piano audio CD is transcribed and offered as a Pianomation CD so the customer can hear the performance on his or her own piano.

Qsync is a DVD interface designed to implement QRS's patented DVD SyncAlong technology. With the addition of Qsync, a Pianomation player piano will play along with selected popular, commercially available concert DVDs.

QRS offers an optical recording strip called **PNOscan** that now comes standard on all Story & Clark pianos. (Story & Clark is a subsidiary of QRS.) Placed under the keys, PNOscan translates each keystroke into MIDI data about the note, speed, and duration, without affecting the piano's touch. This MIDI data can be output to Pianomation for storage and later playback, or stored as a standard MIDI file on CompactFlash for computer editing. Coupling PNOscan with Ancho or Petine (with optional sound card), the pianist can play General MIDI (instrumental) sounds. **SilentPNO** consists of the PNOscan record strip, a piano sound module, and a stop rail for muting the acoustic piano. By muting the piano and turning on the sound card, the pianist can play in privacy with headphones. See the article on "**Hybrid Pianos**" for more information.

QRS has developed for use with its systems an extensive library of CDs comprising over 3,000 selections in every imaginable genre. Rather than synthesized music, this library is made up almost entirely of

live performance recordings, including solo piano, piano with orchestral accompaniment, and piano with background music and vocals.

CDs can be purchased one at a time or obtained through **NetPiano**, a service through which customers can download to their Pianomation-equipped piano, through their personal computer, any of the thousands of songs in the QRS library. NetPiano is now all digital, so customers can store the music on CompactFlash, on their MP3 players, or by burning their own CDs. A wireless transmitter plugged into the computer's audio jack transmits the music to the piano. This subscription-based service gives the subscriber access to songs anytime, day or night, without having to build a CD library. Subscriptions are available only through QRS dealers or through the QRS website.

YAMAHA DISKLAVIER

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Disklaviers are Yamaha pianos that have been outfitted with an electronic player-piano system. These mechanisms are installed only in new Yamahas, and only at the Yamaha factory. They cannot be retrofitted into older Yamahas or any other brand.

Disklavier differs from most aftermarket systems in that Disklavier is not modular. Whatever Disklavier features come with a particular model of piano is what you get (although software upgrades are possible). The sophistication of the key, hammer, and pedal sensing also varies, depending on which Disklavier (E3 or Mark IV) is associated with that particular piano model.

Some of the highlights of the **Mark IV Disklavier** include:

- 80 Gigabyte hard drive capable of holding all Disklavier software ever written (and then some)
- CD drive
- floppy drive
- pocket remote control to communicate wirelessly with the Disklavier
- built-in Ethernet for connecting to your network and downloading MIDI files
- grayscale (continuous) hammer-shank sensors (on 6' 1" and larger models) for more sensitive recording capabilities
- XG tone generator with hundreds of synthesized and sampled sounds
- dedicated digital piano sound chip
- Articulation Element Modeling (AEM) voices for greater realism in orchestrated backgrounds
- built-in speaker system
- karaoke capability
- 16-track recording capabilities
- Silent Mode: silences the acoustic piano for listening through headphones
- Quiet Mode: silences the acoustic piano and directs the sound to speakers
- Quick Escape Action: maintains correct action regulation when using Silent Mode or Quiet Mode
- headphones
- SmartKey: a teaching device
- CueTime: a smart accompaniment feature
- PianoSmart Audio Synchronization: the ability to link a piano track in MIDI format with selected popular CDs on the general market for synchronized playback
- PianoSmart Video Synchronization: videotape a piano performance and the Disklavier will play the performance back perfectly on the piano whenever you play back the video of the performance
- Disklavier Radio: a group of streaming MIDI music stations, available on a subscription basis

The current Version 3.0 operating system for the Mark IV includes the ability to make audio recordings of the piano and anything coming into the mic input, and enables control of the Mark IV via a PC or Macintosh computer through the use of a Web browser.

The Mark IV Version 4.0 operating system, available in spring 2010,



The Yamaha Mark IV Disklavier comes with hard, CD, and floppy-disk drives; headphones, and pocket wireless remote control, among other features.

Yamaha

will provide Disklavier owners with the ability to control their system with an iPhone or iPod Touch, and the potential to take part in the new Remote Lesson feature (piano-to-piano connection via the Internet), described later in this article. Yamaha has also, for the first time, released its code to software developers so they can develop third-party Disklavier controllers.

The performance level of the standard Mark IV Disklavier is the same as formerly found in the Mark III PRO series. The Mark IV PRO provides the highest level of performance in the Disklavier line. The PRO series has a much higher internal recording resolution and a greater dynamic range in playback.

Introduced this year, the **Disklavier E3** offers many of the most popular capabilities of the Mark IV at a lower price. The E3 is offered only on Yamaha's smaller grands, from the 4' 11" model GB1K through the 5' 8" model C2, and on the 48" U1 upright. The following are the differences between the E3 and Mark IV Disklaviers:

- The E3 has no internal hard drive. However, it does support a user-supplied USB hard drive.
- The E3 has no floppy-disk drive, though one can be added.
- The E3's ensemble electronic voices do not include Yamaha's Articulation Element Modeling (AEM) voices.
- The E3 has flash memory.
- The E3 does not have a dedicated digital piano sound chip, instead using the piano sound in the XG tone generator.
- The upright version of the E3 (DU1E3) does not come with built-in speakers.
- The E3 has only 2-track recording capability instead of 16-track.
- The E3 does not support Silent Mode, Quiet Mode, or Quick Escape Action.

- The E3 does not come with headphones.

E3 Version 2.0, available in fall 2010, will add the same capabilities as described earlier for the Mark IV Version 4.0.

Models DGC1B and DC2B, recently discontinued, are Mark III Disklaviers with some limits in their functionality. They don't support Silent Mode, Quiet Mode, or Quick Escape Action, and headphones and a digital piano sound chip are not included (instead, they use the piano sound in the tone generator). The playback-only model DGB1CD is being discontinued in favor of the E3 version, the DGB1KE3. Owners of Mark IIXG and Mark III systems can access many of the advanced features found in the E3 system by purchasing replacement control unit DKC-850.


For simple playback, most player-piano systems now on the market are probably equally recommended. The Disklavier, however, has a slight edge in quality control, and its recording system is more sophisticated than most of the others, especially in the larger grands. For this reason, it is often the system of choice for professional applications such as performance and teaching, and much of Yamaha's marketing efforts are directed at that audience.

Two examples are especially noteworthy. Yamaha sponsors regular piano "e-competitions" in which contestants gather in several cities and play Disklavier concert grands. Their performances are recorded using PianoSmart Video Synchronization, then sent to judges in another location, who, rather than listen to recordings, watch and listen to the music reproduced perfectly on other Disklavier pianos.

A similar concept is a technology called Remote Lesson, debuting in spring 2010 after years of development and testing. A student takes a lesson on one Disklavier while a

teacher located far away teaches and critiques on a second Disklavier connected via the Internet, student and teacher communicating with each other in real time via videoconferencing. Initially, this feature will be made available only to selected universities and at additional cost. Details and timing regarding availability of this feature to individuals is still under discussion.

Yamaha maintains a large and growing library of music for the Disklavier, including piano solo, piano with recorded "live" accompaniment, piano with digital instrumental accompaniment, and PianoSmart arrangements. The system will also play Standard MIDI files types 0 and 1.

Yamaha also makes a line of **Silent Pianos**, formerly called MIDI-Pianos. Technically, these are not Disklaviers because they don't use solenoids for playback; they're included here because they are closely related products that have some similar features. Like the Disklaviers, Silent Pianos have sensors associated with the keys, hammers, and pedals that record their movements in MIDI format and output the information through a digital piano sound chip to headphones or speakers, or to a computer for editing. With the addition of Yamaha's piano mute rail, the acoustic piano can be silenced and the instrument used as a digital piano with a real piano action. A new vertical silent system, called SG is now available. The SG system offers nine additional sounds, can record, and has USB capability to preserve recorded performances. See also the article on "**Hybrid Pianos**" in this issue for additional information. 

Mike Kemper, a Los Angeles-based piano technician and expert on electronic player-piano systems, contributed to this article.

THIS SECTION contains brief descriptions of most brands of new piano distributed nationwide in the United States. Brands that are associated with only a single dealer, or otherwise have marginal distribution, are omitted unless I believe them to be significant in some respect. These profiles contain, sometimes verbatim, material from the fourth edition of *The Piano Book* where still relevant and accurate, accumulated changes from past *Supplements*, and new material gleaned from interviews with manufacturers and industry professionals. The contact information listed for each brand is that of the brand's U.S. distributor, or of the manufacturer itself if there is no separate U.S. distributor. Most manufacturers had an opportunity to see, comment on, and correct for factual accuracy the descriptions of their products. To keep the size manageable, however, much historical and technical information was abbreviated or omitted, including information on older, discontinued models, and on problems and defects that have long since been rectified. Although the information in this publication will usually be sufficient to help guide you in purchasing a new piano, you

may wish, at your leisure, to peruse *The Piano Book* for additional commentary on the brands you're considering. Just be aware that, particularly where it conflicts with information in this publication, *The Piano Book* may no longer be accurate. In most cases, brands included in *The Piano Book* but not here, are either out of business or no longer distributed in the United States.

As in *The Piano Book*, the articles here are a bit quirky—that is, they vary in length, and in the thoroughness with which they treat their subjects. Some companies have more interesting histories, some instruments have more unusual technical features, some brands have more controversial issues associated with them, and some manufacturers were more helpful than others in providing access to interesting material. The comments are more descriptive than evaluative. For a “road map” depicting how I think the piano industry views the different brands relative to one another, see the article “**The New-Piano Market Today.**”

Note: Electronic player-piano systems are covered in “**Buying an Electronic Player-Piano System,**” elsewhere in this issue.

ALTENBURG, OTTO

Wyman Piano Company
P.O. Box 506
Colusa, California 95932
908-351-2000
george.benson@wymanpiano.com
www.altenburgpiano.com

Pianos made by: Beijing Hsinghai Piano Group, Ltd.,
Beijing, China

This is the house brand of Altenburg Piano House, a New Jersey piano retailer in business for over 150 years, at one time as a manufacturer. This brand is sold via the

Internet and through other dealers, in addition to the company's own stores. For many years, Otto Altenburg pianos have been made by Samick in Korea or Indonesia, though sometimes to musical and cabinet designs different from Samick's own. More recently, Altenburg has engaged the Beijing Hsinghai Piano Group in China to make a new line of pianos, some of which are exclusive to Altenburg, with individually hitched strings. The Beijing models are the ones shown in the Model & Pricing Guide of this issue. Grand models up to 5' 3" use a laminated soundboard, larger models use solid spruce.

Warranty: 12 years, parts and labor, transferable to future owners within the warranty period.

ASTIN-WEIGHT

Astin-Weight Piano Makers
P.O. Box 65281
Salt Lake City, Utah 84165
801-487-0641
astinweight@yahoo.com

Astin-Weight pianos have been made in Salt Lake City since 1959. The company continues to engage in limited production at several temporary locations due to storm damage at the factory.

Astin-Weight vertical pianos, 50" in height, are unusual from a technical standpoint because they have no backposts, instead relying on a massive full-perimeter plate; and also because the soundboard takes up the entire back of the piano, behind the pinblock, resulting in a much greater volume of sound than from a conventional piano (see *The Piano Book* for an illustration of this feature). Many of the cabinet finishes are simple, hand-rubbed oil finishes. The 41" console has been discontinued.

The Astin-Weight 5'9" grand is produced in very limited quantities. It has an unusual symmetrical shape and is hinged on the treble side instead of the bass. The company says this shape allows for much longer strings and a greater soundboard area.

Warranty: 25 years, parts and labor.

BALDWIN

including D.H. Baldwin, Hamilton, Howard, Chickering, Wurlitzer, ConcertMaster

Baldwin Piano Company
309 Plus Park Blvd.
Nashville, Tennessee 37217
615-871-4500
800-876-2976
800-444-2766 (24/7 consumer hotline)
www.baldwinpiano.com

Pianos made by: Baldwin Dongbei (Yingkou) Piano and Musical Instrument Co., Ltd., Yingkou, Liaoning Province, China; Baldwin (Zhongshan) Piano and Musical Instrument Co., Ltd., Zhongshan, Guangdong Province, China; both owned by Gibson Guitar Corporation, Nashville, Tennessee.

Baldwin Piano & Organ Co. was established in Cincinnati in 1862 as a retail enterprise and began manufacturing its own line of pianos in 1890. Throughout most of the 20th century, the company was considered one of the most successful and financially stable piano makers in the United States. Beginning in the 1980s, however, the quality declined, especially as a result of the relocation of action manufacturing to Mexico. A combination

of foreign competition and management problems led to bankruptcy in 2000. The company was purchased out of bankruptcy in 2001 by Gibson Guitar Corporation.

Baldwin currently manufactures pianos for the U.S. market in two factories it owns in China, where it also maintains a major presence in the Chinese domestic, and other international, piano markets. The company ceased regular piano production at its only remaining U.S. factory, in Trumann, Arkansas, at the end of 2008, though the facility remains open as a U.S. distribution and service center. Pianos sold in the U.S. now bear only the Baldwin name; all other piano names Baldwin owns and has used recently, such as Hamilton, Wurlitzer, Chickering, Howard, and D.H. Baldwin, have been retired, although some pianos bearing those names may remain on showroom floors for quite some time until sold. To distinguish new Baldwin pianos made in China from older ones made in the U.S., a small *c* over the *i* in *Baldwin* on the fallboard indicates Chinese manufacture.

Baldwin has re-created versions of most of its former U.S. vertical models at its facility in Zhongshan, China. These are the model numbers beginning with B (formerly BZ). Initial reports suggest they are competently made. Model B242 is a 42" console, in attractive furniture styles (and model B242E in continental style), similar to the former model Classic 660 console. Models B342 and B442 are the same piano, but with fancier cabinets. Models B243 and B247 are similar to the famous Baldwin Hamilton studio, the most popular school piano ever built, with toe-block construction, the 243 in school style and the 247 with slightly curved legs. Model B252 is a replica of the former 52" model 6000 upright, complete with original features such as sostenuto and Accu-just hitch pins. A lower-cost line of Baldwin verticals is made at the Dongbei factory (model numbers beginning with BH). These are similar, though not identical, to Dongbei's vertical models made for other distributors.

Baldwin also makes grands at the Dongbei factory (models beginning with BH). These are technically nearly identical to Dongbei's grands made for other distributors (see **Dongbei**), although the cabinets may have features that mimic the appearance of Baldwin's U.S.-made Artist-series grands. It's not yet known whether Baldwin will re-create its Artist grands in China. U.S.-made Artist grands are still available from existing inventory. In addition to standard cabinet finishes, Artist grands are also available in striking—sometimes wild—art-case cabinets.

Baldwin sells an electronic player-piano system called ConcertMaster, available only on Baldwin pianos.

Warranty: U.S.-made Baldwin grands—lifetime on parts, 10 years on labor. Imported Baldwin grands and verticals—10 years on parts and labor.

BECHSTEIN, C.

including W. Hoffmann
Bechstein America, LLC
207 West 58th Street
New York, New York 10019
212-581-5550
info@bechstein-america.com
www.bechstein.de

Pianos made by: C. Bechstein Pianoforte Fabrik GmbH, Berlin and Seifhennersdorf, Germany; and C. Bechstein Europe Ltd. (former Bohemia Piano Ltd.), Hradec Králové, Czech Republic

Bechstein was founded in 1853 by Carl Bechstein, a young German piano maker who, in the exploding world of piano technology of his day, had visions of building an instrument that the tradition-bound piano-making shops of Berlin were not interested in. Through fine workmanship and the endorsement of famous pianists, Bechstein soon became one of the leading piano makers in Europe, producing over 5,000 pianos annually by 1900. The two World Wars and the Depression virtually destroyed the company, but it was successfully rebuilt. In 1963 it was acquired by Baldwin, and in 1986 Baldwin sold it to Karl Schulze, a leading West German piano retailer and master piano technician, who undertook a complete technical and financial reorganization of the company. In the early 1990s, Bechstein acquired the names and factories of Euterpe, W. Hoffmann, and Zimmermann. Pianos with these names are currently being sold in Europe, but only W. Hoffmann is sold in North America. In 2006 Bechstein purchased a controlling interest in the Czech piano maker Bohemia, and integrated it into a new entity called C. Bechstein Europe Ltd. All Bechstein pianos are manufactured in Seifhennersdorf, Germany. W. Hoffmann pianos and some components for Bechstein pianos are made in the Czech Republic. Bechstein also co-owns a plant in China, where it makes less expensive pianos for sale in other parts of the world.

Several years ago, Bechstein and Korean piano maker Samick each acquired a small financial interest in the other and agreed to cooperate in technical matters, marketing, and distribution. Pursuant to that agreement, SMC, Samick's North American distributor, also distributed Bechstein pianos. The distribution agreement has since been terminated, and Bechstein now distributes through its own North American subsidiary, Bechstein-America LLC, based in New York City.

All Bechstein pianos use Abel or Renner hammers, solid European spruce soundboards, and beech or beech and mahogany for grand rims and some structural parts. American maple pinblocks are used in the most expensive grand and vertical pianos, Delignit in the others. Three pedals are standard on all pianos, the grands with sostenuto and the verticals with practice pedal (sostenuto optional). Over the past few years, all Bechstein grands have been redesigned with a capo bar (eliminating the agraffes in the treble), higher tension scale, and front and rear duplex scales for better tonal projection and tonal color. Also, unlike older Bechsteins, which had an open pinblock design, in the redesigned grands the plate covers the pinblock area. For better tuning control, the higher-level pianos are without tuning-pin bushings.

Bechstein pianos are available in two levels of quality. The regular verticals and partially redesigned versions of the old grand models are a lower-priced line known as the Academy series and say only "Bechstein" on the fallboard. The 51½" Concert 8 (one of my all-time favorite verticals), several smaller verticals, and the fully redesigned grands (models D, C, B, M/P, and L), are the higher-priced line and say "C. Bechstein" on the fallboard. The company says both lines are made in Germany, though for cost-effectiveness some parts and components may originate in the Czech Republic.

The differences between the two lines appear to be primarily in tonal philosophy and cabinetry. C. Bechstein grands were designed with a higher tension scale for better projection, and with various components that the company believed would result in the greatest usable palette of tonal color (tapered soundboard, vertically laminated bridges, hornbeam hammer shanks, solid keybed, thicker rim, and hammers with walnut moldings and AAA felt). The grand soundboard is installed after the inner and outer rims are joined. The ribs are tapered after being glued to the soundboard, and the heavy-duty rim posts are dovetailed and embedded in the rim.

The Academy-series grands have an untapered soundboard, solid beech bridge with beech cap, maple hammer shanks, expansion-type keybed, and hammers with mahogany moldings and AA felt. The same quality wood and strings are used in both. The rim parts are joined, and the soundboard and ribs installed, in a more efficient, less time-consuming manner than with the C. Bechstein. C. Bechstein keys still use leather key bushings, whereas the Academy-series keys use the more conventional cloth bushings. Bone keytops are an option on the C. Bechstein pianos, and genuine ebony sharps are used on both series.

Bechstein uses its own Silver Line action in the Academy series and, in the C. Bechstein series, its Gold Line action, which has slightly stricter tolerances. As part of its global strategy, the company uses multiple suppliers for nearly all parts; parts for the Gold Line action come from Renner in Germany, while Silver Line parts come from China. Bechstein says that whatever the origin, all parts are inspected and reworked as necessary to conform to the company's rigid standards. Both actions appear to be well made, and both are of the Renner design, with the smooth, responsive touch characteristic of that design. Of course, the parts from Renner are more time-tested than the others.

The C. Bechstein cabinetry is much sleeker and more sophisticated than the plain Academy series, though both cabinets are finished to the same standards. The C. Bechstein plates receive the royal hand-rubbed finish; the Academy-series plates are just spray-finished in the conventional manner.

C. Bechstein grands are impeccably made in Europe with the customary brighter tone that Europeans prefer, and may need considerable voicing to suit the American musical taste. (However, several of my colleagues had high praise for the wide dynamic range, tonal color, and responsive action of the recently redesigned 7'8" model C grand.) The company maintains that since voicing is a matter of overall piano design, their pianos are voiced at the factory to their tonal standard and should not be altered. Some customers may still prefer the slightly warmer sound of the Academy grands, which are also about half the price.

Bechstein engineers oversee production of the Bechstein-designed W. Hoffmann line of pianos in the company's Czech facility. This is a mid-priced line intended to compete with other mid-priced pianos from Eastern Europe. Currently it consists of five grand and four vertical models in two series. The Tradition series is completely made in the Czech Republic. The Vision series is assembled in the Czech Republic, but the strung back (structural and acoustical elements) is imported from China.

Warranty: 5 years, parts and labor, to original purchaser.

BEIJING HSINGHAI

Beijing Hsinghai Piano Group, Ltd., part of the Beijing Hsinghai Musical Instruments Co., has been producing pianos in Beijing, China, since 1949. It manufactures more than 50,000 vertical and grand pianos annually, mostly for domestic Chinese consumption. In 2005 the

company consolidated its three older plants into a new facility of 1.2 million square feet. The pianos are available throughout the world under the Otto Meister and Hsinghai (or Xinghai) labels, as well as under various other labels as joint ventures with other manufacturers and distributors, including Wyman and Altenburg. Kawai also has a joint venture with Beijing, though the pianos (formerly under the name Linden) are distributed only in Canada and Europe.

BERGMANN — See **Young Chang**.

BLÜTHNER

including Haessler. See also [Irmiler](#).

Blüthner USA LLC

5660 W. Grand River

Lansing, Michigan 48906

517-886-6000

800-954-3200

info@bluthnerpiano.com

www.bluthnerpiano.com

In Canada, contact Bluethner Piano Canada Inc.

604-264-1138

rrgarvin@telus.net

www.bluethner.ca

Pianos made by: Julius Blüthner Pianofortefabrik GmbH, Leipzig, Germany

Blüthner has been making pianos of the highest quality in Leipzig, in the eastern part of Germany, since 1853, and though nationalized in 1972, always remained under the management of the Blüthner family. Until 1900, Blüthner was Europe's largest piano factory. During World War II, the factory was bombed, but after the war the East German government allowed the Blüthner family and workers to rebuild it because the Blüthner piano was considered a national treasure (and because the Soviet Union needed quality pianos). With the liberation of Eastern Europe, Blüthner is again privately owned by the Blüthner family.

Blüthner pianos have beech rims (grands), solid spruce soundboards, Delignit pinblocks, Renner actions, Abel hammers, and polyester finishes. Pianos for export have three pedals, including sostenuto on the grands, and celeste (practice) on the verticals. Blüthner builds about 100 verticals a year in four sizes, and 500 grands a year in six sizes.

In addition to numerous specialized furniture styles and finishes, Blüthner has two recently issued special editions. In honor of the company's 150th anniversary, Blüth-

ner introduced a Jubilee model with a commemorative cast-iron plate in the style of the special-edition pianos of a century ago. It is available in several sizes, in any style or finish. A Julius Blüthner edition honoring the founder of the company, now operated by the fifth generation of his family, is available in most grand sizes, and features, among other embellishments, brass inlays in the lid, round Victorian legs, and a very fancy, elaborately carved music desk in the styling designed by the founder.

Blüthner pianos incorporate several unique technical features. With aliquot stringing, the notes in the highest treble section (about the top two octaves) have four strings each instead of three. The extra string is raised slightly above the others and vibrates only sympathetically. The effect, heard mainly in medium to forte playing, is similar to that of a duplex scale, adding tonal color to the treble and aiding the singing tone. Another feature concerns the angled hammers, which may at first look odd, though the reason may not be readily apparent. It turns out that the angled hammers are actually cut at an angle to match the string line and mounted straight on the shanks instead of being cut straight and mounted at an angle like other brands. The company says that the effect is to more evenly distribute the force of the blow across both the strings and the hammers, and to make a firmer connection with the backchecks, which are also positioned in a straight line. Visually, the effect is an even, rather than a staggered, hammer line.

In what is perhaps a world's first, Blüthner has designed and built a piano for left-handed pianists. This is a completely backward piano, with the treble keys, hammers, and strings on the left and the bass on the right. When it was introduced, a pianist gave a concert on it after only a couple of hours of practice! It is currently available in the 6'10" and 9'2" sizes by special order (price not available).

With voicing, Blüthner pianos have a very full sound that is warm, romantic, and lyrical, generally deeper and darker than some of their German counterparts. Sustain is good, but at a low level of volume, giving the tone a refined, delicate character. The action is a little light, but responsive. The pianos are built of superb materials, and are favorably priced compared to some of their competitors.

In the 1990s a Haessler line of pianos was added to the Blüthner line. (Haessler is a Blüthner family name.) Created to better compete in the American market, Haessler pianos have more conventional technical and cosmetic features than Blüthner pianos and cost about 25 percent less. For example, the grands are loop-strung instead of single-strung, there is no aliquot stringing,

and the hammers are cut and mounted in the conventional way. Case and plate cosmetics are simpler. The pianos are made in the Blüthner factory in Germany to similarly high quality standards.

Warranty: Blüthner and Haessler—10 years, parts and labor, to original purchaser.

BOHEMIA

German American Trading, Inc.
P.O. Box 17789
Tampa, Florida 33682
813-961-8405
germanamer@msn.com

Pianos made by: C. Bechstein Europe Ltd. (former Bohemia Piano Ltd.), Hradec Králové, Czech Republic

The factory that makes Bohemia pianos began production in 1871, and after World War II became part of the Czech state-owned enterprise that included the better-known Petrof. Privatized in 1993, the factory now makes 1,500 verticals and 400 grands per year. Originally it exported to the U.S. under the name Rieger-Kloss, a name now used only for Czech pipe organs. The name Bohemia is derived from the original term used by the ancient Romans for the part of Europe that is now the Czech Republic.

In 2006, C. Bechstein purchased a controlling interest in Bohemia Piano Ltd. and integrated it into a new entity called C. Bechstein Europe. Production was moved to a new state-of-the-art factory in Hradec Králové. However, Bohemia pianos continue to be sold through Bohemia's own dealer network, as before. Bechstein also makes the W. Hoffmann line of pianos there (see **Bechstein, C.**). All the components for Bohemia pianos are made in the Czech Republic or elsewhere in Europe. Model numbers with "BR" have Renner parts on Bohemia action frames; other models have Czech actions. The pianos have either Abel or Renner hammers. All pianos come with a leather-upholstered adjustable artist bench, and the grands have a slow-close fallboard. Bohemia pianos play very well, with a nice, bright, singing treble tone.

Bohemia makes three sizes of vertical piano from 48" to 52", and five sizes of grand from 5'2" to 8'11". Note that models 113, 121, 150, and 170 were discontinued in 2008; some have been replaced with newer models of similar size.

Warranty: 5 years, parts and labor, to original purchaser.

BÖSENDORFER

Bösendorfer USA
1771 Post Road East, Suite 239
Westport, Connecticut 06880
203-520-1801
usinfo@bosendorfer.com
www.bosendorfer.com

Pianos made by: L. Bösendorfer Klavierfabrik GmbH, Vienna, Austria

Bösendorfer was founded in 1828 in Vienna, Austria, by Ignaz Bösendorfer. The young piano maker rose to fame when Franz Liszt endorsed his concert grand after being unable to destroy it in playing, as he had every other piano set before him. Ignaz died in 1858 and the company was taken over by his son, Ludwig. Under Ludwig's direction, the firm greatly prospered and the pianos became even more famous throughout Europe and the world. Ludwig, having no direct descendants, sold the firm to a friend, Carl Hutterstrasser, in 1909. Carl's sons, Wolfgang and Alexander, became partners in 1931. Bösendorfer was sold to Kimball International, a U.S. manufacturer of low- and medium-priced pianos, in 1966. In 2002 Kimball, having left the piano business, sold Bösendorfer to BAWAG Bank, Austria's third largest financial institution. The bank encountered financial troubles unrelated to Bösendorfer and sold the piano company to Yamaha in 2008. Yamaha says it will not be making any changes to Bösendorfer's location or methods of production, and that its sales network will continue to be separate from Yamaha's. Bösendorfer manufactures fewer than 500 pianos a year, with close to half of them sold in the U.S.

Bösendorfer makes a 52" upright and seven models of grand piano, from 5' 8" to the 9' 6" Imperial Concert Grand, one of the world's largest pianos. The company also makes slightly less expensive versions of four grand models known as the Conservatory Series (CS). Conservatory Series grands are like the regular grands except that the case receives a satin finish instead of a high polish, and some cabinet details are simpler. Previously, the CS models also had a satin-finished plate, and were loop-strung instead of single-strung, but in 2009, regarding these features, the specifications of the regular models were restored. All Bösendorfer grand pianos have three pedals, the middle pedal being a sostenuto.

One of the most distinctive features of the grands is that a couple of models have more than 88 keys. The 7' 4" model has 92 keys and the 9' 6" model has 97 keys. The lowest strings vibrate so slowly that it's actually possible to hear the individual beats of the vibration. Piano technicians say that it is next to impossible to

tune these strings by ear, although electronic tuning aids can help accomplish this. Of course, these notes are rarely used, but their presence, and the presence of the extra-long bridge and larger soundboard to accommodate them, add extra power, resonance, and clarity to the lower regular notes of the piano. In order not to confuse pianists, who rely on the normal keyboard configuration for spatial orientation while playing, the keys for these extra notes are usually covered with a black ivory material.

The rim of the Bösendorfer grand is built quite differently from that of all other grands. Instead of veneers bent around a form, the rim is made in solid sections that are then jointed together. It is also made of spruce instead of the usual maple or beech. Spruce is better at transmitting sound than reflecting it, and this, along with the scale design, may be why Bösendorfers tend to have a more delicate treble, and a bass that features the fundamental tone more than the higher harmonics. Although the stereotype that "Bösendorfers are better for Mozart than Rachmaninoff" may be an exaggeration (as evidenced by the number of performing artists who successfully use the piano in concert for a wide variety of music), the piano's not-so-"in-your-face" sound is certainly ideally suited for the classical repertoire, in addition to whatever else it can do. In recent years Bösendorfer has made some refinements to its designs to increase tonal projection. The relatively newer 6' 1", 7', and 9' 2" models have been designed specifically to appeal to pianists looking for a more familiar sound. In all models, however, the distinctive Bösendorfer difference is still readily apparent.

In the past few years, Bösendorfer has introduced a number of interesting instruments in new cabinet styles. These include a Porsche-designed modern piano in aluminum and polished ebony (or special-ordered in any standard Porsche finish color); the Liszt and Vienna models of Victorian-styled pianos; and a model, Yacht, in a decorative veneer finish with brass inlay that can be ordered without casters so that it can be bolted to the deck of a ship! Edge, a modern piano designed by a group of industrial designers, was the winner of a design competition. The model, Mozart, commemorates the 250th anniversary of the composer's birth, and is limited to 27 individually numbered instruments, one for each Mozart piano concerto. Its case includes subtle modifications, including gold-leaf trim, round legs and lyre posts, and a carved music desk. Perhaps not to be outdone by Porsche, in 2009 Bösendorfer produced a model commissioned and designed by Audi on the occasion of that automaker's 100th anniversary.

Bösendorfer makes a unique electronic player-piano system called CEUS. See “[Buying an Electronic Player-Piano System](#),” elsewhere in this issue, for more information.

Perhaps the world’s most expensive piano inch for inch, Bösendorfer grands make an eloquent case for their prices. They are distinctive in both appearance and sound, and are considered to be among the finest pianos in the world.

Warranty: 10 years, parts and labor, transferable to future owners within the warranty period.

BOSTON

Steinway & Sons
One Steinway Place
Long Island City, New York 11105
718-721-2600
800-366-1853
boston@steinway.com
www.steinway.com/boston

Pianos made by: Kawai Musical Instrument Mfg. Co., Ltd.,
Hamamatsu, Japan and Karawan, Indonesia

In 1992 Steinway launched its Boston line of pianos, designed by Steinway & Sons and built by Kawai. Steinway’s stated purpose in creating this line was to supply Steinway dealers with a quality, mid-priced piano containing some Steinway-like design features for those customers “who were not yet ready for a Steinway.” In choosing to have a piano of its own design made in Japan, Steinway sought to take advantage of the efficient high-technology manufacturing methods of the Japanese while utilizing its own design skills to make a more musical piano than is usually available from that part of the world. In 2009, Steinway launched the Performance Edition of the Boston piano with enhancements to the instruments’ design and specifications, including a grand inner rim of maple for increased structural integrity and improved tone, the patented Octagrip pinblock for smoother tuning and more consistent torque, and improvements to hardware and keytop material, among other things. Performance Edition models have model numbers ending in PE. Sold only through select Steinway dealers, Boston pianos are currently available in three sizes of vertical and five sizes of grand. All are made in Japan, except the model UP-118S PE, which is made in Kawai’s Indonesian factory.

Boston pianos are used by a number of prestigious music schools and festivals, including Aspen, Bowdoin, Brevard, Ravinia, and Tanglewood.

The most obvious visible feature of the Boston grand piano’s design (and one of the biggest differences from

Kawai pianos) is its wide tail. Steinway says this allows the bridges to be positioned closer to the more lively central part of the soundboard, smoothing out the break between bass and treble. This, plus a thinner, tapered soundboard and other scaling differences, may give the Boston grands a longer sustain though less initial power. The wide-tail design may also endow some of the grands with the soundboard size normally associated with a slightly larger piano. The verticals are said to have a greater overstringing angle, for the same purpose. Over the last few years, the Boston verticals have been redesigned for greater tuning stability and musical refinement. In particular, for its superior tuning stability, I would recommend for institutional use the 46" Boston model UP-118E PE over the 46" model UP-118S PE.

A number of features in the Boston piano are similar to those in the Steinway, including the above-mentioned maple inner rim, vertically laminated bridges for better tonal transmission, duplex scaling for additional tonal color, rosette-shaped hammer flanges to preserve hammer spacing, and radial rim bracing for greater structural stability. The Boston grand action is said to incorporate some of the latest refinements of the Steinway action. Cabinet detailing on the Boston grands is similar to that on the Steinway. Boston hammers are made differently from both Kawai and Steinway hammers, and voicers in the Kawai factory receive special instruction in voicing them. All Boston grand models come with a sostenuto pedal; all verticals have a practice (mute) pedal, except for the model UP-118S PE, which has a bass sustain.

Boston grands also have certain things in common with Kawai RX-series grands: tuning pins, grand leg and lyre assemblies, radial rim bracing, sostenuto pedal, and the level of quality control in their manufacture. The same workers build the two brands in the same factories. One important way they differ is that Kawai uses carbon-fiber-reinforced ABS Styran plastic for most of its action parts, whereas Boston uses only traditional wooden parts. Although similarly priced at the wholesale level, Kawai pianos tend to be a little less expensive to the retail customer than comparably sized Bostons due to the larger discounts typically given by Kawai dealers.

Steinway guarantees full trade-in value for a Boston piano at any time a purchaser wishes to upgrade to a Steinway grand.

Piano technicians are favorably inclined toward Boston pianos. Some find them to have a little better sustain and more tonal color than Kawais, while being otherwise similar in quality. When comparing the two brands, I would advise making a choice based primarily

on one's own musical perceptions of tone and touch, as well as the trade-up guarantee, if applicable.

Warranty: 10 years, parts and labor, to original purchaser.

BRODMANN

including Taylor
Piano Marketing Group, LLC
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gary.trafton@brodmann-pianos.com
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Company Headquarters: J.B. Piano GmbH, Kudlichgasse 24,
A-1100 Vienna, Austria. Phone: +43-1-890-3203;
christian.hoeflerl@brodmann-pianos.com

Pianos made by: various makers (see text)

Joseph Brodmann was a well-known piano maker in Vienna in the late 18th and early 19th centuries. Ignaz Bösendorfer apprenticed in Brodmann's workshop and eventually took it over, producing the first Bösendorfer pianos there. Today's Brodmann is a new company, headquartered in Vienna, and founded in 2004 by two former Bösendorfer executives, pursuing a direction they say was planned as a possible second line for Bösendorfer a number of years ago, but never acted upon.

Brodmann says its mission is to produce a piano with high-end performance characteristics at an affordable price by using European components in key areas, strict quality control, and manufacturing in countries with favorable labor rates.

There are three lines of Brodmann piano. The Professional Edition (formerly with the model initials BU and BG, now with the prefix PE), is made in Yichang, Hubei Province, China, by a manufacturer affiliated with Parsons Music, a major retailer in Hong Kong and China. Brodmann says the scales and designs of these pianos are exclusive to the company. The pianos are designed in Vienna and use European components in critical areas of sound production, such as Strunz soundboards, Abel hammers, Röslau strings, and Langer-designed actions (Renner in the model 228, a Chinese action in the verticals). For quality control, Brodmann has its own employees from Europe in the factory. I've received positive feedback about these Brodmann pianos from many sources, the grands to a somewhat greater degree than the verticals. The scale design of 6'2" model PE 187 is said to be similar to that of a Steinway model A and is often singled out for praise.

The second line of vertical and grand pianos, called the Vienna Edition, is made in limited quantities in a

Brodmann facility in Vienna. The verticals come in stunning cabinetry and exotic wood veneers, such as pyramid mahogany and Brazilian rosewood. The Vienna Edition has the same high-quality components as the Professional Edition, but with Renner actions. The Vienna Edition was brand-new at press time; prices were not yet available.

The third line, called Taylor (named after the company's Technical Director), consists of six entry-level models, three grand and three vertical, made in China with Asian instead of European parts, and, the company says, subject to Brodmann's strict quality control. I played the 4'9" grand model at a trade show, and though the bass was understandably limited due to the piano's small size, the treble sounded surprisingly lovely, even ethereal.

Warranty: 10 years, parts and labor, transferable to future owners within the warranty period.

CABLE, HOBART M. — See [Sejung](#).

CABLE-NELSON — See [Yamaha](#).

CHASE, A.B. — See [Everett](#).

CONCERTMASTER — See [Baldwin](#).

CONOVER CABLE — See [Samick](#).

CRISTOFORI

Jordan Kitt's Music
9520 Baltimore Avenue
College Park, Maryland 20740

800-466-9510 x1267
(Chris Syllaba)

info@crisforipianos.com

Pianos made by: Guangzhou Pearl River Piano Group Ltd.,
Guangzhou, Guangdong Province, China

Schmitt Music
2400 Freeway Blvd.
Brooklyn Center,
Minnesota 55430

800-920-9540 x5075
(Wayne Reinhardt)

www.crisforipianos.com

Originally issued under the name Opus II, the Cristofori piano is distributed by Jordan Kitt's Music, which owns and operates 11 piano dealerships on the East Coast and in the Chicago area; and Schmitt Music, which has more than a dozen locations throughout the Midwest and in Denver. At present, Cristofori pianos are sold only in their stores. Bartolomeo Cristofori (1655–1731) was, of course, the inventor of the piano.

Cristofori currently sources its acoustic pianos from Pearl River, in China. The Cristofori pianos are

differentiated from Pearl River's own line of pianos by upgraded feature specifications such as the use of highest-quality Mapes strings from the U.S., soundboards of solid, premium Siberian spruce (instead of laminated soundboards) in the larger grands and taller verticals, a different selection of cabinetry, and an upgraded warranty. U.S. technicians in the factory inspect every Cristofori piano prior to crating and shipping.

Warranty: 12 years, parts and labor, transferable to future owners within the warranty period.

DONGBEI

Pianos made by: Baldwin Dongbei (Yingkou) Piano and Musical Instrument Company, Ltd., Yingkou, Liaoning Province, China

The Dongbei Piano Company in China is owned by Baldwin Piano Company, a subsidiary of Gibson Guitar Corporation, and makes pianos that are sold in North America by various distributors and under a variety of names, including **Baldwin**, **Everett**, and **Hallet, Davis & Co.** (see listings under those names). Pianos made under the names Nordiska and Weinbach are no longer distributed in the U.S.

Dongbei is Chinese for "northeast." In 1952 Dongbei was formed by splitting off from a government-owned piano factory in Shanghai and establishing a new government-owned factory in the northeastern part of the country. Dongbei began a process of modernization in 1988 when it purchased the designs and manufacturing equipment for a vertical piano model from the Swedish company Nordiska when that company went out of business. The Swedish-designed model 116 vertical was strikingly more advanced than Dongbei's own Prince and Princess piano lines. (At that time, Dongbei made only vertical pianos.)

In 1991 Dongbei entered into an agreement with Korean piano maker Daewoo whereby Daewoo would assist Dongbei in improving its production of vertical pianos. In 1996 that relationship was extended to the design and production of grand pianos. In 1997, when Daewoo decided to leave the piano business, Dongbei purchased nearly all of Daewoo's grand-piano manufacturing equipment and began making grands. Export to the U.S. began in 1994 under the brand name Sagenhaft, at first only of vertical pianos. When the export of grand pianos began in 1998, other brand names such as Nordiska, Everett, and Story & Clark, began to become available, and over the next 10 years production for both domestic use and for export grew enormously.

In early 2007 Gibson Musical Instruments, parent of Baldwin Piano Company, acquired Dongbei Piano and

renamed it Baldwin Dongbei (Yingkou) Piano and Musical Instrument Co., Ltd., thus creating a major piano-manufacturing power in China with two plants. (The other plant, Baldwin (Zhongshan) Piano and Musical Instrument Co., Ltd., is in southern China.) Baldwin has greatly expanded its presence in China over the last five years, and the company says it will use the manufacturing capacity of Dongbei to service the Chinese domestic market as well as the world market (see also under **Baldwin**). In the two years since Baldwin acquired Dongbei, both the workforce and the production output have been considerably reduced to make the former government-owned operation more efficient and profitable.

When Daewoo left the piano business in 1997, some of the technicians and designers sent by Daewoo to advise Dongbei stayed on with Dongbei for many years, during which they designed numerous new piano models. Some of these technicians had trained in both Korea and Germany. In the opinion of many technicians who have examined a variety of pianos from China, the Dongbei grand-piano designs are among the best and most successful musically.

EBEL, CARL — See **Perzina, Gebr.**

ESSEX

Steinway & Sons
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800-366-1853
essex@steinway.com
www.steinway.com/essex

Pianos made by: Young Chang Co., Ltd., Inchon, South Korea, and Tianjin, China; and Guangzhou Pearl River Piano Group Ltd., Guangzhou, Guangdong Province, China

Essex pianos are designed by Steinway & Sons engineers and are made in factories in China and Korea by both Young Chang and Pearl River. Steinway first introduced its Essex line of pianos in early 2001 with a limited offering of models made by Young Chang, and the brand kept an unusually low profile in the piano market for a number of years. In 2006, a major relaunch of Essex took place that included a new and very complete line comprising 35 grand and 31 vertical models and finishes.

Four grand sizes and three vertical scales are made. The 44" model EUP-111 console comes in a variety of furniture styles, and the 43" model EUP-108 is a version of that console in continental style. The newly designed 46" model EUP-116 studio is available in 14 different

and striking cabinets designed by Steinway & Sons and renowned furniture designer William Faber. Styles include: Classic, Queen Anne, Italian Provincial, French Provincial, Formal French, English Country, English Traditional, Contemporary, and Sheraton Traditional. These models incorporate various leg designs (including cabriole leg, spoon leg, and canopy-styled tapered leg and arm designs) and hand-carved trim (such as Acanthus leaf and tulip designs, and vertical bead molding), highly molded top lids, picture-frame front panels, and stylized, decorative music desks. The newly designed 48" model EUP-123 upright comes in a traditional style in four finishes, along with Empire and French styles.

The Essex grands are available in 5'1" (EGP-155), 5'3" (EGP-161), 5'8" (EGP-173), and 6' (EGP-183) sizes in (depending on model) Classic, Neoclassic, Traditional, Renaissance, and French Provincial styles. They come in a variety of regular and exotic veneers in high polish and satin luster (semigloss) finishes.

Like Steinway's Boston pianos, the Essex line was designed with a lower tension scale and incorporates many Steinway-designed refinements. Included in these are a wide tail design that allows the bridges to be positioned closer to the more lively, central part of the soundboard, smoothing out the break between bass and treble. This and a thinner, tapered soundboard, and other scaling differences, produce a tone with a longer sustain. Other Steinway-designed features include an all-wood action with Steinway geometry, and with rosette-shaped hammer flanges to preserve hammer spacing, like those used in Steinway grands; pear-shaped hammers with reinforced shoulders and metal fasteners; vertically laminated bridges with solid maple cap; duplex scale; radial bracing (in grands); and staggered backposts (in verticals).

At present, Young Chang makes Essex vertical models 108, 111, and 116 in its factory in Tianjin, China, and grand models 161 and 183 in Korea. Guangzhou Pearl River makes vertical model 123 and grand models 155 and 173 in China.

Steinway has put an immense amount of time and effort into the relaunch of Essex. The pianos are entirely new designs by Steinway engineers, not warmed-over designs from other companies. Steinway has a permanent office in Shanghai, China, and full-time employees who inspect the pianos made in the Asian factories. I expect that the quality of the Essex pianos will be at the upper end of what these factories are capable of producing. So far, feedback from piano technicians confirms this expectation.

Steinway guarantees full trade-in value for an Essex piano toward the purchase of a Steinway grand within 10 years.

Warranty: 10 years, parts and labor, to original purchaser.

ESTONIA

Laul Estonia Piano Factory Ltd.

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Stony Point, New York 10980

845-947-7763

laulestoniapiano@aol.com

www.estoniapiano.com

Pianos made by: Estonia Klaverivabrik AS, Tallinn, Estonia

Estonia is a small republic in northern Europe on the Baltic Sea, near Scandinavia. For centuries it was under Danish, Swedish, German, or Russian domination, and finally gained its independence in 1918, only to lose it again to the Soviet Union in 1940. Estonia became free again in 1991 with the collapse of the Soviet Union.

Piano-making in Estonia goes back over 200 years under German influence, and from 1850 to 1940 there were nearly 20 piano manufacturers operating in the country. The most famous of these was Ernst Hiis-Ihse, who studied piano making in the Steinway Hamburg and Blüthner factories and established his own company in 1893. His piano designs gained international recognition. In 1950 the Communist-dominated Estonian government consolidated many smaller Estonian piano makers into a factory managed by Hiis, making pianos under the Estonia name for the first time. The instruments became prominent on concert stages throughout Eastern Europe and, amazingly, more than 7,400 concert grands were made. However, after Hiis's death, in 1964, the quality of the pianos gradually declined, partly due to the fact that high-quality parts and materials were hard to come by during the Communist occupation of the country. After Estonia regained its independence in 1991, the factory struggled to maintain production. In 1994 Estonia pianos were introduced to the U.S. market by Paul Vesterstein, an Estonian American.

In 1994 the company was privatized under the Estonia name, with the managers and employees as owners. During the following years, Indrek Laul, an Estonian recording artist with a doctorate in piano performance from the Juilliard School of Music, gradually bought shares of the company from the stockholders until, in 2001, he became sole owner. Dr. Laul lives in the U.S. and represents the company here. In 2005, at its 100th-anniversary celebration, the Juilliard School named him one of the school's top 100 graduates. Estonia makes about 350 pianos a year, all grands, mostly for sale in the U.S.

Estonia pianos have rims of laminated birch, sand-cast plates, Renner actions and hammers, laminated

red beech pinblocks, and European solid spruce soundboards. They come in 5' 6", 6' 3", and 9' sizes. All have three pedals, including sostenuto, and come with a slow-close fallboard and an adjustable artist bench.

When I reported on Estonia pianos for the fourth edition of *The Piano Book* (2001), it was a good piano with much potential, but as the company was still rebounding from problems suffered during the Communist era, some caution was advised. Since becoming sole owner in 2001, Dr. Laul has made so many improvements to the piano that it is practically a different instrument. These include: rescaling the bass, and upgrading the machinery for producing hand-wound bass strings; improving the method of drilling pinblocks; stronger plates and improved plate finishes; thicker inner and outer rims; improved fitting of soundboard to rim; concert-grand-quality soundboard spruce on all models; quartersawn maple bridge caps; adjustable front and rear duplex scales; wood for legs and keyslips heat-treated to better resist changing climatic conditions; Renner Blue hammers on all models; better-quality metal hardware that resists oxidation; suede-covered music-desk tray; improved, more scratch-resistant satin finishes; establishing a quality-control department headed by Dr. Laul's father (both of his parents are professional musicians); higher-grade and artistically matched veneers; and establishing a U.S. service center for warranty repairs. All pianos are now accompanied by a quality-control certificate signed by a member of the Laul family, and each piano is played and checked by them.

The Estonia factory has recently introduced a new custom line of pianos, offering exotic veneers such as rosewood, bubinga, and pyramid mahogany, and is willing to finish instruments to fit the desires of individual customers. The custom line also features a number of different Victorian-style legs and ornamental music desks.

In the short time Estonia pianos have been sold here, they have gathered an unusually loyal and devoted following. Groups of owners of Estonia pianos, completely independent of the company, frequently hold musical get-togethers at different locations around the country. The pianos have a rich, warm, singing tone; are very well constructed and well prepared at the factory; and there is hardly a detail that the company has not examined and impressively perfected. The price has risen over the years, but they are still an unusually good value among higher-end instruments.

Warranty: 10 years, parts and labor, to original purchaser.

EVERETT

including A.B. Chase and Vose & Sons
Wrightwood Enterprises, Inc.
717 St. Joseph Drive
St. Joseph, Michigan 49085
616-828-0618

www.everett-piano.com

Pianos made by: Dongbei Piano Company, Ltd., Yingkou,
Liaoning Province, China

The Everett Piano Company originated in Boston in 1883 and moved to South Haven, Michigan, in 1926. It was acquired by Yamaha in 1973. Until mid-1986, Yamaha made a line of Everett vertical pianos in the Michigan factory alongside its U.S.-made Yamaha pianos. When Yamaha moved its U.S. piano manufacturing to Thomaston, Georgia, in 1986, it contracted with Baldwin to continue making Everett pianos. The contract terminated in 1989, and Yamaha dropped the line permanently. See the entry for Everett in *The Piano Book* for more information about pianos from that era.

The Everett name has been used by Wrightwood Enterprises, Inc. since 1995. The pianos are made in China by the Dongbei Piano Company (see **Dongbei**). The grands have duplex scaling and a bass scale that is custom made for the Everett brand, the company says. The same pianos are also sold under the A.B. Chase and Vose & Sons labels.

Warranty: 10 years, parts and labor, to original purchaser.

FALCONE — See **Sejung**.

FANDRICH & SONS

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Stanwood, Washington 98292
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Pianos made by: Bohemia, Heintzman & Co., Dongbei (see text)

In the late 1980s, Darrell Fandrigh, an engineer, pianist, and piano technician, developed a vertical piano action designed to play like a grand, for which 10 patents have been issued. You can see an illustration of the Fandrigh Vertical Action™, an explanation of how it works, and some history of its development in the third and fourth editions of *The Piano Book* and on the Fandrigh & Sons website. Since 1994, Fandrigh and his wife, Heather,

have been installing Renner-made Fandrich actions in selected new pianos, selling them under the Fandrich & Sons label. They also sell some grands (with regular grand actions) under that name.

Over the years, the Fandrichs have installed their actions in over 200 instruments, including ones from Pearl River, Wilh. Steinberg, Klima, Bohemia, and Feurich. At present, the action is being installed in 50" and 52" Bohemia uprights (under the Fandrich & Sons label) and 48" Feurich uprights (under the Feurich label). The converted pianos are available directly from the Fandrichs. The Fandrichs say they are working with factory personnel to train them in completing the actions at the factory, at which time these pianos may also become available from other Bohemia and Feurich dealers.

Playing a piano outfitted with a Fandrich Vertical Action is a very interesting experience. The action easily outperforms that of most other vertical pianos on the market, and some grands as well. The Fandrichs have now had years of experience in refining and servicing the action, and reports suggest that customers are very satisfied with them.

Fandrich & Sons grand pianos are made in China and remanufactured at the Fandrich & Sons facility in Stanwood, Washington. The company offers three sizes of grand piano: models 165 (5' 5"), 185 (6' 1"), and 203 (6' 8"), in three configurations, S, HGS, and HGS-A. The HGS-A models feature Arledge bass strings, Renner hammer shanks, and Ronsen hammers with Würzen Weickert felt. The HGS models feature Ronsen hammers with Würzen Weickert felt, but retain the original factory strings. The S models retain both the original factory strings and hammers with German felt. All models also feature redesigned pedal-lyre and trapwork systems, precision touchweighting using the Fandrichs' proprietary method, and a very lengthy and extensive high-end preparation. Models 165 and 185 are built by Dongbei (see **Dongbei**) and are available in the S and HGS configurations. Model 203 is built by Heintzman (see **Heintzman & Co.**) and is offered only in the HGS-A configuration. All Fandrich & Sons pianos come with a Damp-Chaser dehumidifier system and an adjustable bench.

The Fandrichs are passionate about their craft and choose the brands they work with carefully for musical potential. In addition to making standard modifications and refinements to remedy perceived shortcomings in the original Chinese-made instruments, the Fandrichs are inveterate tinkerers always searching for ways to make additional improvements, however subtle. As a result, many who play the pianos find them to be considerably more musical than their price and origin would

suggest.

Warranty: 12 years, parts and labor, to original purchaser.

Note: Do not confuse the Fandrich & Sons pianos with the 48" Fandrich upright that was once manufactured with a Fandrich Vertical Action by Darrell Fandrich's brother, Delwin Fandrich. That piano has not been made since 1994.

FAZIOLI

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In 1978, musician and engineer Paolo Fazioli of Rome, Italy, began designing and building pianos, with the object of making the finest-quality instruments possible. Now even the most famous piano makers of Western Europe are recognizing his accomplishment, and artists throughout the world are using the instruments successfully on the concert stage and elsewhere.

As a youth, Fazioli studied music and engineering, receiving advanced degrees in both subjects. He briefly attempted to make a living as a concert pianist, but instead joined his family's furniture company, rising to the position of factory manager in the Rome, Sacile, and Turin factories. But his creative ambitions, combined with his personal search for the perfect piano, finally led him to conclude that he needed to build his own piano. With advice and financial backing from his family, in 1977 Fazioli assembled a group of experts in woodworking, acoustics, and piano technology to study and scientifically analyze every aspect of piano design and construction. The following year, prototypes of his new instruments in hand, he began building pianos commercially in a factory housed at one end of the family's Sacile furniture factory, a top supplier in Italy of high-end office furniture.

In 2001, Fazioli built a new, expanded, modern piano-production facility, and in 2005 opened an adjoining 198-seat concert hall with a stage large enough for a chamber orchestra, where he maintains a regular concert schedule of well-known musicians who perform there. The concert hall is designed so that it can be adjusted acoustically with movable panels and sound reflectors to optimize the acoustics for performing, recording, or testing, and for different kinds of music, musical ensembles, and size of audience. The hall is used for the research and testing of pianos—every

instrument Fazioli makes is tested here. In addition to the research activities in the concert hall, the new factory also contains a research department for ongoing research in musical acoustics in cooperation with a number of educational institutions.

Fazioli builds only grands, about 120 per year, in six sizes from 5'2" to 10'2", the last one of the largest pianos in the world, with the further distinction of having four pedals. Three are the usual sustain, sostenuto, and una corda. The fourth is a "soft" pedal that brings the hammers closer to the strings—similar to the function in verticals and some older grands—to soften the sound without altering the tonal quality, as the una corda often does. A unique compensating device corrects for the action irregularity that would otherwise occur when the hammers are moved in this manner. The fourth pedal is available as an option on the other models. Fazioli also offers two actions and two pedal lyres as options on all models. Having two actions allows for more voicing possibilities without having to constantly revoice the hammers. A second pedal lyre containing only three pedals can be a welcome alternative for some pianists who might be confused by the presence of a fourth pedal.

All Fazioli pianos have inner and outer rims of maple. Pinblocks are of Delignit, except for the largest two models, which use five-ply maple pinblocks from Bolduc, in Canada. The pianos have Renner actions, Kluge keyboards, and either Renner or Abel hammers. The bronze capo d'astro bar is adjustable in the factory for setting the strike point and treble string length for best high-treble tone quality, and is removable for servicing if necessary; and the front and rear duplex scales can be tuned to maximize tonal color. The company says that a critical factor in the sound of its pianos is the scientific selection of its woods, such as the "resonant spruce" obtained from the Val di Fiemme, where Stradivari reportedly sought woods for his violins. Each piece of wood is said to be carefully tested for certain resonant properties before being used in the pianos. Similarly, three different types of wood are used for the bridge caps, each chosen for the most efficient transmission of tonal energy for a particular register.

An incredible level of detail has gone into the design and construction of these pianos. For instance, in one small portion of the soundboard where additional stiffness is required, the grain of the wood runs perpendicular to that of the rest of the soundboard, cleverly disguised so as to be almost unnoticeable. The pianos are impeccably prepared at the factory, including very fine voicing—even perfect tuning of the duplex scales.

A series of stunning art-case pianos is a testament to the ability of the Fazioli artisans to execute virtually

any custom-ordered artistic variation on the six Fazioli models.

Those most familiar with Fazioli pianos describe them as combining great power with great warmth in a way that causes music played on them to "make sense" in a way made possible by few other pianos.

Warranty: 10 years, parts and labor, transferable to future owners within the warranty period.

FEURICH

Unique Pianos

Brian Gatchell

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888-725-6633

321-725-5690

www.feurich.com

www.atlanticmusiccenter.com

Pianos made by: Julius Feurich Pianofortefabrik GmbH,
Gunzenhausen, Germany

This German piano manufacturer was founded in Leipzig in 1851 by Julius Feurich. At its height in the early part of the 20th century, the company employed 360 people, annually producing 1,200 upright and 600 grand pianos. Like many German manufacturers, however, Feurich lost its factory during World War II. Following the war, the fourth generation of the Feurich family rebuilt in Langlau, in what became West Germany.

In 1991 Bechstein purchased Feurich and closed the Langlau factory, but in 1993 the name was sold back to the Feurich family. For a time, production was contracted out to other German manufacturers, including Schimmel, while the Feurich family marketed and distributed the pianos. In 1995 Feurich opened a new factory in Gunzenhausen, Germany. Under the direction of Julius Feurich, the fifth generation, the family-owned company is once again building its own pianos, and is currently making about 50 to 60 high-quality instruments per year in two sizes of grand and three sizes of vertical. All pianos and parts are made in Germany. The 49" model 123 vertical is available with a choice of actions, either the traditional Feurich action, made by Renner, or the Fandrich Vertical Action™, made by Renner under license from the Fandrichs (see **Fandrich & Sons** for more information), for which Feurich has the exclusive rights in Germany. Feurich also offers the innovative Wessell, Nickel & Gross composite action parts as an option in its grand pianos.

Warranty: 5 years, parts and labor, to original purchaser.

FÖRSTER, AUGUST

German American Trading Co., Inc.
P.O. Box 17789
Tampa, Florida 33682
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germanamer@msn.com
www.august-foerster.de

Pianos made by: August Förster GmbH, Löbau, Germany

The Förster factory was founded by Friedrich August Förster in 1859 in Löbau, Germany, after Förster studied the art of piano building with others. During the years of control by the government of East Germany, the factory was managed by the fourth-generation piano maker Wolfgang Förster and his daughter, Annkatrin. Since the reunification of Germany and privatization, Wolfgang and his family once again own the company.

With a workforce of 40 using a great deal of hand labor, Förster makes about 120 grands a year in four sizes, and 150 verticals a year in two sizes. The pianos are very well built structurally, and the cabinets are elegant. Rims and pinblocks are of beech, soundboards of Siberian spruce, and bridges are of hardrock maple (without graphite). Each string is individually terminated (single-strung). The actions are made by Renner with Renner hammers. A sostenuto pedal is standard on all grand models.

The tone of August Förster grands is unique, with a remarkable bass: dark, deep, yet clear. As delivered from the factory, the treble is often quite bright, and for some American tastes might be considered a bit thin—it is a less complex sound that emphasizes clarity. This, however, can be modified somewhat with voicing and a good dealer preparation. The instruments are quite versatile, at home with Mozart or Prokofiev, classical or jazz. The 6'4" model is often said to have an especially good scale. The concert-quality 7'2" and 9'1" models are well balanced tonally, and over the years have been endorsed by many famous artists. The Renner actions are very responsive and arrive in exacting regulation.

Most of the comments regarding the quality of materials and workmanship of the Förster grands also apply to the verticals. The cabinet of the vertical is of exceptional width, with extra-thick side panels of solid-core stock. Counter bridges are used on the outside of the soundboard to increase its mass. The verticals have a full set of agraffes, and all the hardware and handmade wood parts are of elegant quality. The actions are built by Renner. The verticals possess the same warm, rich, deep bass tone as the grands.

Warranty: 10 years, parts and labor, to original purchaser.

GROTRIAN

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Friedrich Grotrian was born in Schöningen, Germany in 1803, and as a young man lived in Moscow, where he ran a music business and was associated with piano manufacturing. Later in his life he teamed up with Heinrich Steinweg and Heinrich's son Theodore to build pianos in Germany. Heinrich emigrated to the U.S. about 1850, soon to establish the firm of Steinway & Sons. Theodore followed in 1865, selling his share in the partnership to Friedrich Grotrian's son, Wilhelm, Friedrich having died in 1860. Thereafter, the firm became known as Grotrian-Steinweg. (In a legal settlement with Steinway & Sons, Grotrian-Steinweg agreed to use only the name Grotrian on pianos sold in North America.)

Even as early as the 1860s, Grotrian pianos were well known and highly respected throughout Europe. Each successive generation of the Grotrian family maintained the company's high standards and furthered the technical development of the instrument. Today the company is owned by the sixth generation of Grotrians. Housed in an up-to-date factory, and using a combination of modern technology and traditional craftsmanship, Grotrian makes about 500 verticals and 100 grands a year.

Grotrian grands have beech rims, solid spruce soundboards, laminated beech pinblocks, Renner actions, and are single-strung. Grotrian prides itself on what it calls its "homogeneous soundboard," in which each piece of wood is specially chosen for its contribution to the tone of the soundboard. The cast-iron plate is attached with screws along the outer edges of the rim, instead of on top of the rim, which the company says allows the soundboard to vibrate more freely. The vertical pianos have a unique star-shaped wooden back structure and a full-perimeter plate.

Grotrian makes five sizes of grand and six sizes of vertical piano. The 43½" Friedrich Grotrian vertical is a lower-cost piano with a beech back frame but no back posts, and a simpler cabinet.

Grotrian has introduced the Duo Grand Piano: two grand pianos placed side by side with keyboards at opposite ends, as in a duo piano concert, with removable rim parts, connected soundboards, and a common lid (price on request).

The treble of Grotrian pianos has extraordinary sustaining characteristics. It also has a pronounced sound of attack, subtle and delicate. The tenor is darker than many other brands. The bass can be powerful, but without stridency. Overall, Grotrian pianos have a unique, expressive sound and are a pleasure to play. Over the years, many well-known pianists have endorsed or expressed appreciation for Grotrian pianos.

Warranty: 5 years, parts and labor, transferable to future owners.

GULBRANSEN

QRS Music Technologies, Inc.

269 Quaker Drive

Seneca, Pennsylvania 16346

800-247-6557

814-676-6683

www.gulbransen.com

Pianos made by: Sejung Corporation, Qingdao, Shandong Province, China

Founded in 1904, Gulbransen was a well-regarded maker of pianos and organs in the early 20th century, and at one time was the world's largest maker of player pianos. An indication of the company's stature and success in its early history is the fact, that during World War II, Gulbransen was one of only two piano manufacturers allowed to continue production; along with Steinway & Sons, they made pianos for government use. In more modern times, Gulbransen became known for its electronic organs and MIDI products. In 2004, QRS Music Technologies, maker of the Pianomation player-piano systems and distributor of Story & Clark pianos, purchased Gulbransen's MIDI products and company name.

Currently, Gulbransen serves as an entry-level line for Story & Clark dealers (see **Story & Clark**), offering two grand and two vertical sizes, made by Sejung in China (see **Sejung**). Gulbransen pianos can be ordered with factory-installed Pianomation systems.

Warranty: 10 years, parts and labor, to original purchaser.

HAESSLER — See Blüthner.

HAILUN

Hailun USA

P.O. Box 1130

Richland, Washington 99352

509-946-8078

877-946-8078

info@hailun-pianos.com

www.hailun-pianos.com

Pianos made by: Ningbo Hailun Musical Instruments Co. Ltd., Ningbo, Zhejiang Province, China

Ningbo Hailun began making piano parts and components in 1986 under the Ningbo Piano Parts Factory name, and began assembling entire pianos in 1995. Its assembly facility converted to a full-scale piano-manufacturing facility in 2000. The company offers a full line of grands and uprights in its designer Art Case Collection, as well as traditional styles and finishes. In addition to making pianos under the Hailun name, it also makes the Wendl & Lung brand for distribution throughout Europe and a few piano stores in the U.S. (see **Wendl & Lung**). The company also makes pianos or components under contract for several other manufacturers and distributors.

In 2009 Hailun entered the market for luxury-case instruments by commissioning a one-of-a-kind concert grand. Named "Dreams of the East," the instrument's rim was created from a single piece of Chinese rosewood, and hand-carved with beautiful Chinese landscapes by a Chinese master wood-carver. The company says that in 2010 it will introduce two new uprights for professional pianists and institutions in the U.S. market: a 52½" model PE 33 upright with a "lush and powerful sound in the American tradition," and a 51" model HU K5 upright "which will reflect a brighter, more 'European,' sound philosophy." Both will have a middle pedal that operates a true sostenuto mechanism.

The Hailun factory has over 400,000 square feet of production capacity and 800 employees. A 200,000-square-foot expansion project is underway to accommodate distribution in the U.S. market. Additionally, a new cabinet factory is now complete and began production in 2008. Since 2001, the company has invested heavily in computer-controlled manufacturing equipment and has hired an impressive group of experts from Japan (Ema Shigeru), Europe (Peter Veletzky, Stephen Paulello, Claire Trichet, Sibin Zlatkovic), and the U.S. (Frank Emerson) to help it reach the highest quality standards. In 2009, to oversee and assist with quality control, Hailun hired Rolf Ibach, owner of Rud. Ibach Sohn, one of the oldest and most reputable European piano companies, which closed its doors in 2008 after more than 200 years

in business. While modern manufacturing methods are fully utilized, the factory also uses a large amount of skilled manual labor, and provides an in-depth training program for its workers, conducted by piano builders and technicians from the U.S. and Europe.

Hailun is a little different from most of the other Chinese companies selling pianos in the U.S.: its founder and owner, Chen Hailun, is an entrepreneur in the Western style, and deeply involved in every aspect of the business. Originally a maker of molds for industrial use, Chen got into the piano business when piano manufacturers started to use his services to make piano parts. In 1998 he bought out the government's position in his company to better control quality and hiring decisions. He seeks out the best workers by paying considerably higher wages than other piano makers in China, he says, and assists in the training of future piano technicians through an association with a local university. His greatest aspiration, Chen says, is to make the best piano in Asia.

Over the years, much of Chen's technical efforts have gone into maximizing the precision and stability of the pianos and parts his company makes. This is evidenced by the substantial investment in computer-controlled machinery used for precision cutting; the design of keys, keybed, and other parts to resist warping; and the fact that grand piano actions are actually interchangeable between instruments of the same model (this requires an unusually high level of precision). The pianos themselves exhibit good quality control and intelligence in design. In terms of materials, the company uses maple in grand piano rims, a feature indicative of higher quality and arguably necessary for the best sound. This precision, stability, and quality of materials, combined with the work of experienced design consultants, have resulted in pianos that perform and service better than most other pianos from China, and may favorably compare with some mid-priced pianos from other parts of the world. Our own reviewer tried out a Hailun grand (see [review](#) in the Fall 2009 issue) and was impressed with its musicality.

Warranty: 15 years, parts and labor, transferable to future owners within the warranty period; except for action parts, cast-iron plate, and metal case hardware, which are warranted for the lifetime of the original purchaser.

HALLET, DAVIS & CO.

North American Music, Inc.
11 Holt Drive
Stony Point, New York 10980
845-429-0106
www.namusic.com

Pianos made by: Dongbei Piano Company, Ltd., Yingkou, Liaoning Province, China

This famous old American piano brand dates back to at least 1843 in Boston, and has changed hands many times over the years. It eventually became part of the Aeolian group of piano brands, and instruments bearing the name were manufactured at Aeolian's Memphis plant until that company went out of business in 1985. At present, most Hallet, Davis & Co. pianos are made in China by the Dongbei Piano Company (see [Dongbei](#)). The distributor says that pianos in the Imperial Collection (model numbers ending in *I*) use higher-quality imported veneers provided to Dongbei by the distributor.

HAMILTON — See [Baldwin](#).

HARDMAN, PECK & CO.

Hardman Pianos
11 Holt Drive
Stony Point, New York 10980
845-429-0106
info@hardmanpiano.com
www.hardmanpiano.com

Pianos made by: Beijing Hsinghai Piano Group, Ltd., Beijing, China

Hugh Hardman established the Hardman Piano Company in New York City in 1842. Leopold Peck joined the company in 1880, and became a partner in 1890, at which time the company was renamed Hardman, Peck & Company. In the early 20th century, Hardman, Peck was sold to the Aeolian Corporation, which eventually moved to Memphis, where it remained until it went out of business in 1985. Today's Hardman, Peck & Company pianos are manufactured in China by the Beijing Hsinghai Piano Group (see [Beijing Hsinghai](#)). The piano line offers a selection of vertical and grand pianos in a variety of styles and finishes to meet the needs of entry-level and mid-level pianists.

HAZELTON BROS. — See [Samick](#).

HEINTZMAN & CO.

including Gerhard Heintzman

Heintzman Distributor Ltd.

210-2106 Main Street

Vancouver, British Columbia V5T 3C5

Canada

604-801-5393

778-420-0029

info@hzm piano.com

www.hzm piano.com

Pianos made by: Heintzman Piano Company, Ltd., Beijing, China

Heintzman & Co. Ltd. was founded by Theodore August Heintzman in Toronto in 1866. By 1900, Heintzman was one of Toronto's larger manufacturing concerns, building 3,000 pianos per year and selling them throughout Canada and abroad through a network of company stores and other distributors. The pianos received high praise and won prizes at exhibitions. Even today, technicians frequently encounter old Heintzman pianos built in the early part of the 20th century and consider them to be of high quality. In the latter decades of the century, Heintzman, like other North American brands, struggled to compete with cheaper foreign imports. The factory finally closed its doors in 1986 and relocated to China. (For a few years thereafter, some pianos continued to be sold in Canada under the Heintzman and Gerhard Heintzman names.) At first the company was a joint venture with the Beijing Hsinghai Piano Group (see **Beijing Hsinghai**), but when the Chinese government began allowing foreign ownership of manufacturing concerns, the Canadian partner bought back majority ownership and took control.

The new company, known as Heintzman Piano Company, Ltd., is Canadian owned and managed and has a private, independent factory dedicated to producing Heintzman-brand pianos. Heintzman makes pianos to the original Canadian Heintzman designs and scales using some of the equipment from Canada. James Moffat, plant manager of the Canadian Heintzman factory for 40 years, has been retained as a consultant and visits the factory in China several times a year. The company even uses some components from Canada, such as Bolduc soundboards, in grands and larger verticals. The factory makes about 5,000 pianos per year.

The smallest vertical made under the Heintzman name is 43½" tall, but pianos for export to North America typically start at 47½" and contain a mixture of Chinese and imported parts, such as pinblocks and treble strings from Germany and Mapes bass strings from the U.S. Verticals 48½" and taller use Renner

Blue hammers, and the largest two sizes have Canadian Bolduc solid Eastern white spruce soundboards. All verticals have a middle pedal that operates a bass-sustain mechanism, as well as a Silent Switch that operates a mute bar for silent practice.

The grands—5' 6", 6' 1", 6' 8", and 9' in size—also use German pinblocks and strings, Mapes bass strings, Renner Blue hammers, and Canadian Bolduc soundboards. The 9' concert grand comes with a full Renner action and Kluge keys from Germany. A Renner action is a higher-priced option on the other models. All grands come with a sostenuto pedal. A 6' 1" model patterned on the old Heintzman model D was introduced in 2007.

Heintzman Piano Company also makes the slightly less expensive Gerhard Heintzman brand. This line uses less expensive materials and components, such as Japanese hammers and a veneer-laminated spruce soundboard in the verticals (a Bolduc soundboard in some of the grands). The polished ebony grands have a silver plate and trim.

Warranty: Heintzman and Gerhard Heintzman—10 years, parts and labor, from the factory, transferable to future owners within the warranty period.

HOFFMANN, W. — See **Bechstein, C.**

HOWARD — See **Baldwin.**

HSINGHAI — See **Beijing Hsinghai.**

IRMLER

including Schiller

Blüthner USA LLC

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Lansing, Michigan 48906

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info@irmler-piano.com

www.irmler-piano.com

In Canada, contact Blüthner Piano Canada Inc.

604-264-1138

rgarvin@telus.net

www.bluet hner.ca

Pianos made by: Julius Blüthner Pianofortefabrik GmbH, Leipzig, Germany, and other factories (see text)

Irmiler is a brand associated with Blüthner, which has recently reintroduced it to the market in two series: Studio and Professional. The line is in development, so

specifications may occasionally vary from those given here. The Studio series is largely made in China, including at a factory Blüthner owns there. The pianos are then shipped to the Blüthner factory in Germany, where further work is done on them as needed prior to shipping to dealers. The pianos have Delignit pinblocks and veneer-laminated spruce soundboards. The grand rims are of Chinese oak and the grand actions are made with Renner parts. The Studio series verticals include a number of models with interesting, modern cabinet designs.

The Professional series is largely made by Samick in Indonesia. The pianos are then shipped to the Blüthner factory in Germany, where further work is done on them as needed prior to shipping to dealers. The pianos have Delignit pinblocks and solid spruce soundboards. Grands have rims of maple and beech, action parts by Renner (U.S. distribution only), and duplex scaling.

Irmmler also manufactures a series marketed under the Schiller brand name. Prices are comparable to those for Irmmler.

Warranty: 10 years, parts and labor, to original purchaser.

KAWAI

including Shigeru Kawai
Kawai America Corporation
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Rancho Dominguez, California 90220
310-631-1771
800-421-2177
310-223-0900 (Shigeru Kawai)
acoustic@kawaius.com
www.kawaius.com
www.shigerukawai.com

Pianos made by: Kawai Musical Instrument Mfg. Co., Ltd.;
Hamamatsu, Japan, and Karawan, Indonesia

Kawai was founded in 1927 by Koichi Kawai, an inventor and former Yamaha employee who was the first person in Japan to design and build a piano action. While Kawai is second in size to Yamaha among Japanese piano manufacturers, it has a well-deserved reputation all its own for quality and innovation. Nearly all Kawai grands and taller uprights are made in Japan; most consoles and studios are made in Indonesia. The company closed its North Carolina factory in 2005.

One of Kawai's most important innovations is the use of ABS Styran plastic in the manufacture of action parts. Nearly 40 years of use and scientific testing have shown this material to be superior to wood for this

purpose. ABS does not swell and shrink with changes in humidity, so actions made with it are likely to maintain proper regulation better than wood actions. The parts are stronger and without glue joints, so breakage is rare. These parts are present in every Kawai piano. In the current Millennium III action found in some models, the ABS is reinforced with carbon fiber so it can be stronger with less mass. Having less mass to move (that is, less inertia), the action can be more responsive to the player's intentions, including faster repetition. Certain contact surfaces on the action parts are also micro-engineered for ideal shape and texture, resulting in a more consistent touch. Although it took a number of years to overcome the idea that plastic parts must be inferior, there is essentially no dispute anymore among piano technicians on this subject.

Kawai's vertical piano offerings change frequently and are sometimes confusing. At present there are three basic series of Kawai verticals. The console series begins with the 44½" model 506, a basic entry-level console in an institutional-style cabinet (legs with toe blocks). Model K-15 is a 44" version of this in a continental-style cabinet (no legs), and model 508 is a 44½" version in a simple furniture-style cabinet (freestanding legs). Model 607 is the same piano in a fancier furniture-style cabinet. All have the same internal workings. The action in this series is slightly smaller than a full-size action, so it will be slightly less responsive. However, it is more than sufficient for beginner or casual use.

Kawai has replaced both of its former studio models, the UST-7 and UST-8, with the 46" model UST-9, made in Indonesia. This model has the stronger back of the UST-7, rather than that of the UST-8, which was not known for its tuning stability. The UST-9 also contains the Millennium III action; an angled, leather-lined music desk to better hold music; and a stylish, reinforced bench. The 46½" model 907 is essentially the UST-9 in a fancy, furniture-style cabinet. Rounding out the Kawai studios is the new Japanese-made FINO Interior Design Series of three models—the Gilda, Rosina, and Laretta—that Kawai says are "European in style."

Kawai's K series of upright models comprises the K-2 (45"), K-3 (48"), K-5 (49"), K-6 (52"), and K-8 (52"). All have the Millennium III action; a soft-close fallboard; a wide, leather-lined music desk; a somewhat stylish cabinet; and come with an adjustable bench. The 52" models also feature agraffes, duplex scaling, Neotex synthetic ivory keytops, and various kinds of tone escape mechanisms. The K-8 has a true sostenuto pedal.

Kawai makes three series of grand pianos: RX, GE, and GM. The RX, now in a version known as the RX

BLAK series, is the most expensive and has the best features. It is designed for the best performance, whereas the GE and GM series are designed more for efficiency in manufacturing, with fewer refinements. The RX pianos are the only Kawai grands with a radial beam structure, focused and connected to the plate using a cast-iron bracket at the tenor break. This system makes for a more rigid structure, which translates into better tone projection. The soundboard of the RX models is tapered for better tonal response, and the rim is thicker and stronger than in the GE and GM models. The RX BLAK pianos use a new version of the Millennium III action with hammer-shank stabilizers, designed to retain power by keeping the shank from wavering under a heavy blow; have agraffes, duplex scaling, lighter hammers (less inertia), and Neotex synthetic ivory keytops; and come with a slow-close fallboard. The RX grands get more precise key weighting, plus more tuning, regulating, and voicing at the factory. The cabinetry is nicer looking and of better quality than that of the GE and GM series pianos, with the polished ebony models in the new RX BLAK series receiving a UV-cured, scratch-resistant coating on the music rack and music shelves.

Some of the RX features are also found in the GM and GE pianos, but it varies by model. The GM-10K is the only Kawai grand made in Indonesia. It has Kawai's standard ABS action, no agraffes or duplex scaling, standard keytops, and a regular fallboard. The model GM-12, made in Japan, has the regular Millennium III action (without hammer-shank stabilizers), no agraffes or duplex scaling, standard keytops, and a slow-close fallboard. The GE models, also made in Japan, have the regular Millennium III action, agraffes, duplex scaling, Neotex keytops, and a slow-close fallboard.

Kawai's quality control is excellent, especially in its Japanese-made pianos. Major problems are rare, and other than normal maintenance, after-sale service is usually limited to fixing the occasional minor buzz or squeak. Kawai's warranty service is also excellent, and the warranty is transferable to future owners within the warranty period (a benefit that is not common these days). The tone of most Kawai pianos, in my opinion, is not as ideal for classical music as some more expensive instruments, but when expertly voiced, it is not far off, and in any case is quite versatile musically. In part because the touch is so good, Kawai grands are often sought by classical pianists as a less-expensive alternative to a Steinway or other high-end piano. Kawai dealers tend to be a little more aggressive about discounting than their competition (Yamaha). There is also a thriving market for used Kawais. (If you're considering buying a used

Kawai, please read "Should I Buy a Used 'Gray Market' Yamaha or Kawai Piano?" on pages 176–177 of *The Piano Book*, or the shorter version in "**Buying a Used or Restored Piano**" in this publication.)

Kawai has invented an Acoustic Piano Recording System (PR-1) that allows one to create a CD of a piano performance right from the piano. It contains two specially designed microphones that attach easily to the piano, and a CD read/write player with built-in reverb and EQ that connects to any sound system. The system retails for \$1,595.

The Shigeru Kawai line of grands represents Kawai's ultimate effort to produce a world-class piano. Named after Kawai's former chairman (and son of company founder Koichi Kawai), the limited-edition (fewer than 200 per year) Shigeru Kawai grands are made at the separate facility where Kawai's EX concert grands are built.

Although based on the Kawai RX designs, the Shigeru Kawai models are "hand made" in the extreme. Very high-grade soundboard spruce is air-dried for multiple years, then planed by hand by a worker who knocks on the wood and listens for the optimum tonal response. Ribs are also hand-planed for correct stiffness. String bearing is set in the traditional manner by planing the bridges by hand instead of having pre-cut bridges pinned by machine. Bass strings are wound by hand instead of by machine. Hammers are hand-pressed without heat for a wider voicing range, and the hammer weights are carefully controlled for even touch. Hammer shanks are thinned along the bottom so that their stiffness is matched to the hammer mass. These procedures represent a level of detail relatively few manufacturers indulge in.

Each buyer of a Shigeru Kawai piano receives a visit within the first year by a Kawai master technician from the factory in Japan. These are the same factory technicians who do the final installation of actions in pianos, as well as the final voicing and regulation. According to those who have watched them work, these Japanese master technicians are amazingly skilled. Although few U.S. technicians are familiar with Shigeru Kawai pianos, those who are tend to rank them among the world's finest instruments. In addition, Shigeru Kawais have been chosen by the top prize-winners of a number of prestigious piano competitions.

Warranty: Kawai and Shigeru Kawai—10 years, parts and labor, transferable to future owners within the warranty period.

KEMBLE

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www.kemble-pianos.co.uk

The Kemble family has been manufacturing pianos since 1911. In 1985 Kemble started making pianos for Yamaha for the European market, and in 1988 Yamaha bought a majority interest in the company and expanded and modernized the factory. In 2009, Yamaha closed the Kemble factory and transferred manufacturing of Kemble pianos to Yamaha plants in Indonesia and Japan. Until its closing, Kemble was England's only, and Western Europe's largest, piano manufacturer. Kemble says that its pianos will continue to be made in the same models and designs, using the same components, and to the same quality standards, as before. However, they will no longer be marketed in North America. Kemble dealers in the U.S. will continue to sell off their remaining inventory, and Yamaha Japan will continue to stand behind the Kemble warranty. The following description of the Kemble line, and the Kemble model and price information in the Model & Pricing Guide, are repeated from the Fall 2009 issue of *Piano Buyer*.

Kemble makes verticals from 43" to 52" and a 5'8" grand. The quality of the materials used in the Kemble is at least comparable to that in the Yamaha pianos Kemble makes, and sometimes higher. The soundboard of the Kemble is of German spruce, which the company says gives it more of a European tone. The cabinets tend to be much fancier than Yamaha's, with some very interesting and beautiful designer models and finishes. For example, the 48" Shaker-inspired designer upright, Vermont, was designed by the famous British designers Conran and Partners. The Empire and Prestige models have beautiful inlaid panels of mahogany curl and burr yew, respectively. There are also a 45" model, Classic-T, available in black and chrome or in a delicious chocolate color called Mocha Oak; a 49" Conservatoire upright with softline design (rounded edges and profile) and brass inlay; and a limited-edition (250) Mozart model celebrating the 250th anniversary of the composer's birth. A new 52" model K132SN with sostenuto pedal was introduced in 2007. The 48" K121CL is also available with the new SG silent system from Yamaha which has 19 different voices, and can record and play back through the built-in digital piano. In 2009 Kemble issued a special-edition

Chopin model to commemorate the 200th anniversary of the composer's birth. This 48" vertical featured hand-spun bass strings by Bösendorfer, higher-specification hammers and soundboard, and aesthetic features such as marquetry inlays and solid brass accents.

The 5' 8" model KC173 grand is essentially like the Yamaha model C2 grand, with design differences such as plate color and music-desk shape. It is also voiced to Kemble's specs, sounding to me more "European," i.e., a bass with less-pronounced high overtones.

Warranty: 10 years, parts and labor, to original purchaser.

KIMBALL

Kimball Piano USA, Inc.
1819 North Major Avenue
Chicago, Illinois 60639
312-212-3635
kimballpiano@gmail.com
www.kimballpianousa.com

Kimball, a name with a long history in the piano world (see *The Piano Book* for details), is now being produced by Kimball Piano USA, Inc., which acquired the rights to the Kimball name in 2005. Kimball International, which previously owned the Kimball brand and produced Kimball pianos from 1959 to 1996, was primarily a furniture maker that mass-produced a very average piano.

In contrast, Kimball is now controlled by a Registered Piano Technician (RPT) who has returned Kimball to its historical roots in Chicago and says he is placing the company's focus on the musical instrument and on technical details of American piano design and construction. The result of this focus is two new collections of Kimball pianos: Classic and Artist.

The Kimball Classic Collection consists of the 5'1" model K1 and 6'2" model K3 grands, and the 44" model K44 vertical. The K44 is an American furniture console with hand-rubbed lacquer finish in cherry or oak. Parts and components for these models are being sourced primarily from China and Europe. They include a rim made of maple and oak (grands); full-length back posts (vertical); bridges planed and notched by hand in the traditional manner; a wet-sand cast plate; Langer keys, action, and hammers; Röslau strings; Delignit pinblock; and a solid spruce soundboard.

The Kimball Artist Collection includes the 5'8" model A2 grand and the 49" model A49 vertical. The company says that the Artist Collection embodies its commitment to producing high-quality performance pianos by paying great attention to the design of the

scale, soundboard, and action, and to proper execution and attention to details. High-end components, primarily from Germany, include a rim of European beech (grand), Renner action (grand), Strunz premium solid spruce soundboard and ribs, Delignit pinblock, Röslau strings, Klinke agraffes, and Abel hammers. The vertical has full-length spruce back posts and a Langer action; cabinets are from China.

In the U.S., Kimball is doing final assembly and detailing of the instruments, with a major focus on proper action, hammer, and key installation to ensure superb playability. At its factory in Chicago, Kimball now has a showroom where, by appointment, both individual customers and dealers are welcome to see and play the new pianos.

Warranty: 10 years, parts and labor, to original purchaser.

KNABE, WM.

See also **Samick**.

Samick Music Corp. (SMC)
1329 Gateway Drive
Gallatin, Tennessee 37066
800-592-9393
615-206-0077

info@smcmusic.com

www.smcmusic.com

Pianos made by: Samick Musical Instrument Mfg. Co. Ltd., Incheon, South Korea; and Bogor, West Java, Indonesia

Wm. Knabe is an old, distinguished American piano brand that dates back to 1854 and eventually became part of the Aeolian family of brands. Following Aeolian's demise in 1985, the Knabe name became part of Mason & Hamlin, which was purchased out of bankruptcy in 1996 by the owners of PianoDisc. For a time, a line of Knabe pianos was made for PianoDisc by Young Chang in Korea and China. That line has been discontinued, and Samick has acquired the Wm. Knabe name. (Note: "Knabe" is pronounced using the hard "K" sound followed by "nobby.")

Samick began by using the Wm. Knabe name on some of the pianos formerly sold as the World Piano premium line of Samick instruments. The 5'8" and 6'4" grand models have been redesigned, however, and the new models are based on the original 19th- and early 20th-century Knabe scale designs and cabinet styles in use when the company was based in Baltimore. Features include sand-cast plates, lacquer semigloss wood finishes, Renner actions and hammers, and rims of maple and oak. The company has added 7'6" and 9'2" models for the American market. The verticals include unique

cabinet designs with bird's-eye maple and mahogany inlays, rosewood key inserts, and tone escapement.

SMC now completes assembly of Wm. Knabe grands in its Tennessee facility by installing keys, actions, hammers, and dampers in strung backs made in Indonesia or Korea, and completely regulating and voicing the instruments prior to shipment to dealers.

For more information, see **Samick**.

Warranty: 10 years, parts and labor, to original purchaser; lifetime on "surface tension soundboard" where applicable.

KOHLER & CAMPBELL — See **Samick.**

MASON & HAMLIN

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916-567-9999

www.masonhamlin.com

Pianos made by: Mason & Hamlin Piano Co., Haverhill, Massachusetts and Sacramento, California

Mason & Hamlin was founded in 1854 by Henry Mason and Emmons Hamlin. Mason was a musician and businessman and Hamlin was an inventor working with reed organs. Within a few years, Mason & Hamlin was one of the largest makers of reed organs in the U.S. The company began making pianos in 1881 in Boston, and soon became, along with Chickering, among the most prestigious of the Boston piano makers. By 1910, Mason & Hamlin was considered Steinway's chief competitor. Over the next 85 years, Mason & Hamlin changed hands many times. (You can read the somewhat lengthy and interesting history in *The Piano Book*.) In 1996 the Burgett brothers, owners of PianoDisc, purchased Mason & Hamlin out of bankruptcy and set about re-establishing manufacturing at the factory in Haverhill, Massachusetts. At present, the company manufactures about 350 pianos per year at this factory.

Since acquiring the company, the Burgetts have brought back most of the piano models from the company's Boston era (1881–1932) that originally made the company famous. Some have been refinements of original designs, others have been completely new. First came the 5'8" model A and 7' model BB, both of which had been manufactured by the previous owner and so needed less work to resurrect. Then, in fairly rapid succession, came the 6'4" model AA, the 9'4" model CC concert grand, and the 5'4" model B. The development of the model AA was an especially interesting project: in

the process, the engineering staff standardized certain features, refined manufacturing processes, and modernized jigs and machinery, improvements that afterward were applied to the company's other models. The 50" model 50 vertical piano has also been reintroduced and redesigned, with longer keys for a more grand-like touch, and improved pedal leverage. Internal parts for the verticals are made in Haverhill, then installed in an imported cabinet in the company's Sacramento factory, where it also installs PianoDisc systems.

All Mason & Hamlin grands have certain features in common, including a wide-tail design; a full-perimeter plate; an extremely thick and heavy maple rim; a solid spruce soundboard; a five-ply, quartersawn maple pinblock; and the patented Tension Resonator crown retention system. The Tension Resonator (illustrated in *The Piano Book*), invented by Richard Gertz in 1900, consists of a series of turnbuckles that connect various parts of the inner rim. In theory, this web of turnbuckles, nicknamed "the spider," locks the rim in place so that it cannot expand with stress and age, thereby preserving the soundboard crown (curvature). (The soundboard is glued to the inner rim and would collapse if the rim expanded.) While there is no modern-day experimental evidence to confirm or deny this theory, many technicians nevertheless believe in its validity because, unlike most older pianos, the soundboards of old Mason & Hamlins almost always have plenty of crown.

In the early part of the 20th century, Wessell, Nickel & Gross was a major supplier of actions to American piano manufacturers, including Mason & Hamlin. Over the years, the name fell into disuse. In 2004 Mason & Hamlin revived the name by registering the trademark, which now refers to the design and specifications of Mason & Hamlin actions. In addition to wood action parts, the company also manufactures a new line of nylon-based composite action parts of strikingly innovative design, which the company makes available to its dealers and to rebuilders as a high-performance upgrade to the traditional wood action. The company explained that it is gradually moving in the direction of using composite parts because of the inherent shortcomings of wood: it's prone to breakage under constant pounding, the parts vary in strength and mass from one piece of wood to the next, and wood shrinks and swells with changing temperature and humidity. Composite parts, on the other hand, are more than ten times as strong as wood; are built to microscopic tolerances, so they are virtually identical; and are impervious to weather. According to the company, material scientists predict that in the benign environment of a piano, the minimum life expectancy of composite parts is 100 years. In 2010, the

composite action will be standard on new Model CC concert grands.

Mason & Hamlin grands are available in ebony and several standard and exotic wood finishes, in both satin and high polish. Satin finishes are lacquer, the high-polish finishes are polyester. Most sizes are also available in a stylized case design called Monticello, which has fluted, conical legs, similar to Hepplewhite style, with matching lyre and bench. In 2009 Mason & Hamlin introduced the Chrome art-case design, in polished ebony with chrome and stainless-steel case hardware replacing the traditional brass hardware. This design also has art-deco case styling, a silver plate, and a new fallboard logo in a modern font. This modern-font logo, along with a new slow-close fallboard, will become standard on all new Mason & Hamlin grands in 2010.

The tone of Mason & Hamlin pianos is typically American—lush, singing, and powerful, not unlike the Steinway in basic character, but with an even more powerful bass and a clearer treble. The designers have done a good job of making a recognizable Mason & Hamlin sound that is consistent throughout the model line. The 5' 8" model A has a particularly powerful bass for a piano of its size. The treble, notably weak in prior versions, has been beefed up, but the bass is still the showpiece of the piano. The new 5' 4" model B also has a large-sounding bass for its size. The "growling" power of the Mason & Hamlin bass is most apparent in the 7' model BB. The 6' 4" model AA is a little better balanced between bass and treble, one reason why it is a favorite of mine.

The basic musical design of Mason & Hamlin pianos is very good, as is most of the workmanship. As with other American-made pianos, musical and cabinet detailing, such as factory voicing and regulation and plate and cabinet cosmetics, are reasonable but lag somewhat behind the company's European competitors in finesse. The company says it is standard procedure for final voicing and regulation to be finished off by thorough and competent dealer prep. Dealers report that, like those of its competitor, Steinway, pianos made by Mason & Hamlin require a substantial but not unreasonable amount of preparation by the dealer.

In recent years many companies have turned to China and other international sources for parts and materials, for several reasons: a domestic source is no longer available, to save money, to increase the security of supply, and, in some cases, to increase quality. Among makers of high-end pianos, Mason & Hamlin has been pioneering in this regard, though it is not the only company to do so. As the company explains:

"Mason & Hamlins have always been the costliest pianos to produce, and the demand for them has always

outpaced our limited production. Therefore, in an effort to control our pricing and maintain steady production, we have sourced some of our materials and components from the four corners of the earth. We accept only those materials and components whose quality allows us to maintain our reputation for excellence. Using the highest-grade materials, wherever they might come from, ensures longevity in a piano and produces the famous Mason & Hamlin sound. The focus at Mason & Hamlin is, as it always has been, on making a great piano. Mason & Hamlin pianos are still being built the old-fashioned way, by hand, in New England, using the best parts and materials the world has to offer.”

It’s primarily the company’s use of action parts from China that has raised some eyebrows. Many of my colleagues, however, finding that the Chinese parts work flawlessly, feel that the company’s worldwide sourcing of parts and materials, along with its investment in modernized equipment, has made the Mason & Hamlin a better instrument, and has kept the piano’s price at a reasonable level. I must agree that it’s a very good value among high-end instruments.

Warranty: 12 years, parts and labor, transferable to future owners within the warranty period; except lifetime, nontransferable warranty on case and action parts.

MAY BERLIN — See **Schimmel**.

MILLER, HENRY F.

Henry F. Miller
236 West Portal Avenue #568
San Francisco, California 94127
800-511-0083
info@henryfmiller.com

Henry F. Miller was the name of an old American piano maker, established in 1863 near Boston, which eventually became part of the Aeolian Corporation, and was discontinued in 1985. The name is now owned by the Sherman Clay chain of piano stores and is used on a mid-priced line of pianos carried by these and other major piano retailers around the country. Current Henry F. Miller pianos are made by Pearl River in China. The product line consists of five vertical models from 43" to 52" and four grand models from 4' 10" to 6' 2".

NORDISKA

Geneva International Corporation
29 East Hintz Road
Wheeling, Illinois 60090
800-533-2388
847-520-9970
pianos@geneva-intl.com
www.geneva-intl.com

Pianos made by: Dongbei Piano Company, Ltd., Yingkou, Liaoning Province, China

Nordiska was a 100-year-old Swedish piano manufacturer that sold its designs, equipment, and technology to the Chinese company Dongbei when it went out of business in 1988 (for more information, see **Dongbei**). Dongbei pianos were sold in the U.S. under the Nordiska brand name until 2007, when distribution was discontinued.

PALATINO

The Music Link
P.O. Box 162
Brisbane, California 94005
888-552-5465
piano@palatinousa.com
www.palatinousa.com

Pianos made by: AXL Musical Instrument Co., Ltd. Corp., Shanghai, China

Although this company is new to the piano world, it is not new to music. For some time, AXL has been manufacturing a full range of musical instruments under its own name and under OEM agreements with other companies. The company says that its factory is very automated, employing CNC routers from Japan and Germany, and that it sources materials for its pianos from around the world.

Palatino makes about 7,000 pianos annually, in three categories: Classic, Professional, and Concert. Among the verticals, most models are in the Classic series; the Professional series consists only of the 48½" model PUP-123TU-A/AR and the 50" model PUP-126TU, and the Concert series the 52" model PUP-132TU. The Classic series grands are the 4' 6" and 5' models, the Professional series the 5' 9" model, and the Concert series the 6' 2" model and larger. Features common to all three include solid spruce soundboard, maple grand rim, hard rock maple bridges and pinblock, Röslau strings, wet-sand-cast plate, Chinese-made Renner-style action, adjustable artist bench, slow-close fallboard, and solid brass hardware. In addition, the Professional and Concert series have higher-grade Canadian white spruce soundboards, agraffes throughout the scale (in the

Professional series model 123 uprights), and Abel hammers (Professional series) or Renner hammers (Concert series). A full German-made Renner action is an option in the 6' 2" Concert series grand.

Based on personal observation and dealer reports, Palatino pianos appear to have good quality control and are prepared well at the factory before being shipped to dealers. Our own reviewer tested a couple of the grand models and found them to be very musical and a pleasure to play (see **review** in the Fall 2009 issue).

Warranty: 10 years, parts and labor, transferable to future owners within the warranty period.

PEARL RIVER

including Ritmüller

Pearl River Piano Group America, Ltd.

3949 East Guasti Road, Suite A

Ontario, California 91761

909-673-9155

800-435-5086

sales@pearlriverusa.com

www.pearlriverusa.com

Pianos made by: Guangzhou Pearl River Piano Group Ltd.,
Guangzhou, Guangdong Province, China

Originally established in 1954 through the consolidation of several piano-making facilities, the Guangzhou Pearl River factory is now China's largest piano manufacturer and one of the largest in the world, with production of over 100,000 pianos annually by more than 4,000 workers. The government-owned company says the average length of service of its workers is 17 years. Pianos are made under the Pearl River and Ritmüller names, and under a few other names under OEM contracts with distributors, such as **Henry F. Miller** (with Sherman Clay) and **Essex** (with Steinway). (See separate listings under those names).

Pearl River verticals begin with 42½" console model 108 in continental style (no legs), and in a style with curved legs and toe blocks, and with 43" model 110 in a variety of American furniture styles. They continue with a series of studio models, including 45" model 115 in a traditional institutional style (legs with toe blocks), a school-friendly institutional style, and a furniture style; and 47" model 118 in institutional style. Finally, there are upright models 120 (48") and 130 (51½") in institutional style. The 51½" model has a decorative upper panel. This year three new vertical models were introduced, designed by Lothar Thomma, a well-respected German scale designer. In time, these models—T1 (46"), T2 (47"), and T3 (48")—are expected to replace some of the other vertical models listed above.

Pearl River grands come in 10 sizes, from 4'8" to 9'. In addition to a number of models with decorative legs and music desk, there are two unusual pianos: a 6'1" model 186 in "European" style with angled case sides and a cast-iron plate in silver; and a 6'6" model 198 in "Butterfly" style, with a U-shaped body, a clear acrylic lid that hinges in the middle, and other modern design features.

Until last year, Pearl River's Ritmüller line used the same strung back (structural and acoustical components) as the Pearl River line, but with different cabinets. Piano designer Lothar Thomma, mentioned above, was hired to completely redesign the Ritmüller line from the ground up so that it would be distinct from the Pearl River line. The new models are those with model numbers beginning with UH (verticals) or GH (grands). All the new models feature solid spruce soundboards, Renner hammers, and Röslau strings, among other higher-quality features. *Piano Buyer's* reviewer tried out several of the new grand models and was very impressed (see **review** in the Fall 2009 issue). For a time, the old and new models will coexist on showroom floors.

Warranty: 10 years, parts and labor, to original purchaser.

PERZINA, GEBR.

including Carl Ebel and Gerh. Steinberg

Piano Empire, Inc.

13370 East Firestone Blvd., Suite A

Santa Fe Springs, California 90670

800-576-3463

562-926-1906

info@pianoempire.com

www.perzinapianos.com

Pianos made by: Yantai-Perzina Piano Manufacturing Co., Ltd.,
Yantai, Shandong Province, China

The Gebr. Perzina (Perzina Brothers) piano company was established in the German town of Schwerin in 1871, and was a prominent piano maker until World War I, after which its fortunes declined. In more recent times, the factory was moved to the nearby city of Lenzen and the company became known as Pianofabrik Lenzen GmbH. In the early 1990s the company was purchased by Music Brokers International B.V. in the Netherlands. Eventually it was decided that making pianos in Germany was not economically viable, so manufacturing was moved to Yantai, China, where both verticals and grands were made for a number of years by the Yantai Longfeng Piano Co. under the Perzina name. In 2003 Music Brokers International established its own factory in Yantai, called Yantai-Perzina, where it now builds the Perzina, Carl Ebel, and Gerh. Steinberg pianos. (Note:

Do not confuse Gerh. Steinberg with Wilh. Steinberg, a German piano brand.)

The Carl Ebel and Gerh. Steinberg pianos are based on the same scale design, but the Perzina scale design is different. Further technical differences revolve primarily around the choice of action, hammers, and soundboard design, among other things. In particular, the Perzina brand is distinguished by use of a tapered soundboard of solid Austrian white spruce in both verticals and grands, whereas the Carl Ebel and Gerh. Steinberg soundboards are of veneer-laminated Austrian white spruce. The Perzina pianos also receive greater attention to detail than the other two brands. In addition, the Perzina verticals have several interesting features rarely found in other pianos, including a “floating” soundboard that is unattached to the back at certain points for freer vibration, and a reverse, or concave, soundboard crown. (There may be something to this; the Perzina verticals are the best-sounding verticals from China, their bass being particularly notable.) The company plans to introduce a premium series of vertical pianos featuring the German Renner action.

Perzina grands are available with a Detoa (G models) or a Renner (E models) action. Also available are three new deluxe grand models featuring new scale designs and other upgrades and modifications, with three different actions available. The GX has a factory action (with European materials and design); the DX action is made by Detoa (Czech Republic); and the EX has a Renner action. All three have Renner AA hammers.

The company’s European headquarters says it ships many European materials to Yantai, including Degen copper-wound strings, Röslau strings, Delignit pinblocks, Renner hammers, English felts, European veneers, and Austrian white spruce soundboards. New machinery is from Germany, Japan, and Italy. According to the company, all the piano designs are the original German scales. The Renner actions used by Perzina are ordered complete from Germany, not assembled from parts.

Warranty: 10 years, parts and labor, to original purchaser.

PETROF

Petrof USA, LLC

5400 Lawrenceville Hwy., Suites B1 & 2

Lilburn, Georgia 30047

877-9-PETROF (877-973-8763)

770-564-4974

sales@petrofpianosusa.com

www.petrof.com

Pianos made by: Petrof, spol. s.r.o., Hradec Králové, Czech Republic

The Petrof piano factory was founded in 1864 by Antonin Petrof in Hradec Králové, an industrial town 100 kilometers east of Prague, in the present Czech Republic. Five generations of the Petrof family owned and managed the business, during which time the company kept pace with technical developments and earned prizes for its pianos at international exhibitions. The Czechs have long been known for their vibrant musical-instrument industry, which also includes makers of brass, woodwind, and stringed instruments.

In 1947, when all businesses in the Czech Republic were nationalized by the state, the Petrof family was forced out of the business. In 1965 Petrof, along with other piano manufacturers, was forced to join Musicexport, the state-controlled import-export company for musical instruments. Since the fall of the Soviet Union and the liberation of Eastern Europe, the various factories that were part of Musicexport have been spun off as private businesses, including Petrof, which is once again owned and controlled by the Petrof family. Currently Petrof manufactures 5,000 vertical pianos and 900 grands annually.

Petrof recently introduced a series of six new grand piano models, named (in size order) Bora, Breeze, Storm, Pasat, Monsoon, and Mistral, from 5'2" to 9'2" in length. Most component parts are produced by Petrof or other Czech factories, including the hardware, plates, and cabinetry. Soundboards are of solid Bohemian spruce, grand rims are of laminated beech and birch, pinblocks are of compressed beech, plates are cast in wet sand, and hammers are from Renner or Abel. These pianos also boast several interesting features: The soundboard is custom-tapered and asymmetrically crowned for optimal resonance; the treble bridge is capped with genuine ebony for better transmission of treble tone; front and rear duplexes are tuned for tonal color; pianos are single-strung for tuning stability; an adjustable bolt has been added from the plate to the wooden cross block for additional tuning stability; and a decorative veneer has been added to the inner rim. The earlier series of Petrof grands with model numbers containing roman numerals will coexist with the new models as long as supplies last.

Actions in Petrof pianos are standard Detoa on the smaller verticals, Renner on the larger grands and larger verticals, and either Renner parts on a Petrof action frame or Petrof Original Actions made by Detoa on mid-size instruments.

Petrof has also invented and patented a version of its new grand action that uses tiny opposing magnets on the wippens and wippen rail. These magnets allow for the removal of the usual lead counterweights in the

keys and, according to the company, significantly alter the action's dynamic properties. The new action also furthers the European Union's stated environmental goal of phasing out the use of lead in pianos. The action is adjusted in the factory for a standard touchweight and is serviced in exactly the same way as a standard action. The Magnetic Accelerated Action, as it is known, is a special-order option on the grands. Petrof also offers as an option the Magnetic Balanced Action, which allows the player to quickly and easily change the touchweight in the range of ± 4 –5 grams simply by turning a knob.

Petrofs are known for their warm, rich, singing tone, full of color. The pianos are solidly built and workmanship is good. After careful preparation, the pianos can sound and feel quite beautiful and hold their own against other European brands. Wages in the Czech Republic have risen in recent years, and with it the price of Petrof pianos, but the company has placed a greater emphasis on quality control and enhanced features in the new models in order to meet the higher expectations that come with higher prices.

Note: For years, Weinbach pianos were made by the Petrof company and were virtually identical to Petrof brand pianos. The Weinbach name is no longer being used in North America.

Warranty: 10 years, parts and labor, to original purchaser. The first 5 years are from Petrof, the second 5 years from the importer, Petrof USA.

PRAMBERGER

See also **Samick**.

Samick Music Corp. (SMC)
1329 Gateway Drive
Gallatin, Tennessee 37066
800-592-9393
615-206-0077

info@smcmusic.com
www.smcmusic.com

Pianos made by: Samick Musical Instrument Mfg. Co. Ltd.,
Inchon, South Korea; and Bogor, West Java, Indonesia

The Pramberger name was used by Young Chang for its premium-level pianos under license from the late piano engineer Joseph Pramberger, who at one time was head of manufacturing at Steinway & Sons. When Pramberger died, in 2003, his estate terminated its relationship with Young Chang and signed up with Samick. However, since Young Chang still holds the rights to its piano designs, Samick has designed new pianos to go with the name.

The J.P. Pramberger Platinum piano is a higher-end instrument whose strung back is made in Korea, then shipped to the U.S. for installation of the keyboard, action, and hammers, and for final regulation and voicing, before being shipped to dealers. Several American technicians who had known and worked with Joe Pramberger went to Korea at Samick's request to design this piano. Benefiting by work previously done by Bechstein engineers at the Samick factory, they began with a modified Bechstein scale, then added several features found on current or older Steinways, such as an all-maple rim, an asymmetrically tapered white spruce soundboard, vertically laminated and tunneled maple and mahogany bridges with maple cap, duplex scaling, and Renner action and hammers. One of the technicians told me that the group feels its design is an advancement of Pramberger's work that he would have approved of.

The Pramberger Signature (formerly known as J. Pramberger) is a more modestly priced instrument from Indonesia whose design is based on the former Korean-built Young Chang version. The grands start at the 5' model PS150, with a duplex scale starting at the 5'2" model PS157 and continuing through the rest of the line, to the 6'1" model PS185. This line uses Samick's Pratt-Reed Premium action, Renner hammers, and a Bolduc (Canadian) solid spruce soundboard. The institutional verticals in this line have all-wood cabinet construction and agraffes in the bass section, and the decorator versions include Renner hammers and a slow-close fallboard.

The Pramberger Legacy, the newest addition to the Pramberger line, has a veneer-laminated "surface tension" soundboard, and provides a reasonably priced option for the budget-minded consumer. These models were formerly sold under the Remington label. (The Remington brand is no longer a regular part of the Pramberger lineup, but is available to dealers on special order.)

[Note: Samick's Pratt-Reed Premium action should not be confused with the Pratt-Read action used in many American-made pianos in the mid to late 20th century and eventually acquired by Baldwin. Samick says its Pratt-Reed action, designed by its research and development team and based on the German Renner action, is made in Korea.]

See **Samick** for more information.

Warranty: 10 years, parts and labor, to original purchaser; lifetime on "surface tension" soundboard where applicable.

RAVENSCROFT

Spreeman Piano Innovations, LLC
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480-664-3702
info@spreemanpianoinnovations.com
www.RavenscroftPianos.com

Crafted in Scottsdale, Arizona by piano builder Michael Spreeman, the Ravenscroft piano entered the market for high-end performance pianos in 2006. Two models are available, the 7'3" model 220 and the 9' model 275. The 220 made its debut at the Piano Technicians Guild Annual Convention in 2007, where it was very favorably received.

While the general trend in the industry seems to be toward outsourcing to less expensive suppliers, Spreeman says his concept is the exact opposite. Appealing to the niche market of high-end consumers, Spreeman's approach is more along the lines of the early European small-shop builders, with an emphasis on quality and exclusivity.

The case and iron frame of the Ravenscroft piano are constructed in Germany by Sauter to Ravenscroft specifications and shipped to the Arizona facility. The Renner action and Kluge keys of each piano are computer-designed to optimize performance. The scale design, Italian Fiemme spruce soundboard panels, and vertically laminated bridge bodies (maple, mahogany, and ebony) with solid caps are meticulously designed and built by Spreeman himself.

Initially, only four to six pianos will be produced yearly, with pricing beginning at \$280,000 for a hand-crafted model 220, and up to \$350,000 for a model 275 with "all the extras," including exotic veneers, titanium bridge pins and hitch pins, and titanium front and rear treble duplex terminations. Most instruments are custom ordered and can take up to a year to complete.

REMINGTON — See [Pramberger](#).

RITMÜLLER — See [Pearl River](#).

SAMICK

including Kohler & Campbell and Conover Cable.
See separate listings for [Wm. Knabe](#), [Pramberger](#), and [Sohmer & Co.](#)

Samick Music Corp. (SMC)
1329 Gateway Drive
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www.smcmusic.com

Pianos made by: Samick Musical Instrument Mfg. Co. Ltd.,
Inchon, South Korea; and Bogor, West Java, Indonesia

Samick was founded by Hyo Ick Lee in 1958 as a Baldwin distributor in South Korea. Facing an immense challenge in an impoverished and war-torn country, in the early 1960s Lee began to build and sell a very limited quantity of vertical pianos using largely imported parts. As the economy improved, Lee expanded his operation, and in 1964 began exporting to other parts of the world, eventually becoming one of the world's largest piano manufacturers, now making most parts in-house. Over the next several decades, Samick expanded into manufacturing guitars and other instruments and opened factories in China and Indonesia, where it shifted much of its production as Korean wages rose. The Asian economic crisis of the late 1990s forced Samick into bankruptcy, but the company emerged from bankruptcy in 2002 and is now on a sound financial footing.

In 2002 Samick and C. Bechstein, a major European piano maker, each acquired a financial interest in the other and agreed to cooperate on technical issues and marketing. Samick has used that collaboration to upgrade its manufacturing capabilities. The two companies also own a joint-venture factory in Shanghai, China. For a few years, Samick distributed Bechstein pianos in North America, but that arrangement has ended (see [Bechstein, C.](#)).

In 2004, Samick acquired a controlling interest in its competitor Young Chang and briefly took over distribution of Young Chang and Bergmann pianos in the U.S. However, antitrust rulings in Korea and the U.S. ended this arrangement a year later. Young Chang, once again an independent company, now distributes those brands itself (see [Young Chang](#)).

The company says that "Samick" means "three benefits" in Korean, symbolizing the wish that the activities of the company benefit not only the company itself, but also the customers and the Korean economy.

Samick Music Corporation, the North American marketing arm of the Korean company, is now known

as SMC, and distributes Samick, Kohler & Campbell, Conover Cable, Pramberger, Remington, Wm. Knabe, and Sohmer & Co. pianos in North America (see separate listings for **Wm. Knabe, Pramberger, and Sohmer & Co.**). Samick no longer makes pianos under the Bernhard Steiner and Hazelton Bros. names. Samick has also just acquired the German brand Seiler, and SMC will be distributing that brand in North America as well (see **Seiler**). SMC has built a new manufacturing, warehousing, and office facility in Tennessee, and has begun to assemble its upper-level Wm. Knabe and J.P. Pramberger grands there using parts and assemblies from Korea, Indonesia, and other countries. While Samick says it will continue to make some pianos in Korea, it is gradually moving most of its production to Indonesia.

Until just a few years ago, Samick primarily made pianos under the Samick and Kohler & Campbell brand names. (For historical information about the original Kohler & Campbell piano company, see *The Piano Book*.) In the 1980s Klaus Fenner, a German piano designer, was hired to revise the Samick scale designs and make them more “European.” Most of the Samick and Kohler & Campbell pianos now being made are based on these designs. The Conover Cable (another old American name), identical to the Samick piano and introduced to markets that needed an additional line, is now available to dealers by special order only, as is the Remington brand that Samick makes. (For Conover Cable models and prices, see under Samick in the “Model & Pricing Guide.”)

Although in most respects the Samick and Kohler & Campbell pianos are similar in quality, so as not to compete with one another the grands are available in different sizes and have some different features. The two lines are primarily differentiated by the fact that Kohler & Campbell grands (except the smallest model) have solid spruce soundboards and individually hitched stringing (also known as single stringing), whereas the Samick grands have veneer-laminated soundboards and conventional loop stringing. A veneer-laminated soundboard (which Samick calls a “surface tension soundboard”) is essentially a solid spruce soundboard surrounded by two very thin veneers. Samick pioneered the use of this soundboard with Klaus Fenner’s technical advice in early 1980, and it is now used by others as well. Tonally, it behaves much more like a solid spruce soundboard than the old kind of laminated soundboard, which was essentially plywood. Like the old kind, however, it won’t crack or lose its crown. The solid spruce soundboard may have a slight tonal advantage, but the laminated one will last longer, so take your pick. Likewise, single stringing is more elegant to those who know pianos, but otherwise

offers little or no advantage over loop stringing. The two brands’ vertical pianos are more alike: They have the same difference in soundboards as the grands, but are all loop-strung and come more or less in the same sizes.

Kohler & Campbell’s upper-level Millennium pianos have higher-quality features than the regular series, now called New Yorker. The Millennium grands have a maple rim, premium Canadian Bolduc tapered solid spruce soundboard, Renner action and hammers, and satin wood finishes available in lacquer semigloss. The verticals have Renner parts on a Samick-made Pratt-Reed hornbeam action rail, Bolduc solid spruce soundboard, Renner hammers, lacquer semigloss wood finishes, and a sostenuto pedal on the 52" model. All Samick and New Yorker-series Kohler & Campbell pianos are made in Indonesia for the U.S. market. Smaller Millennium verticals and grands are made in Indonesia, larger ones in Korea. However, all Millennium-series pianos are shipped to the U.S. for inspection and tone and action regulation before being shipped to dealers.

[Note: Samick’s Pratt-Reed Premium action should not be confused with the Pratt-*Read* action used in many American-made pianos in the mid to late 20th century and eventually acquired by Baldwin. Samick says its Pratt-Reed action is made in Korea and designed after the German Renner action.]

In the Kohler & Campbell price list, KC models are Indonesian-made, New Yorker-series verticals; KM are Indonesian-made Millennium-series verticals; KMV are Korean-made Millennium-series verticals; KCG and KIG are Indonesian-made New Yorker-series grands; KCM are Indonesian-made Millennium-series grands; and KFM are Korean-made Millennium-series grands.

Quality control in Samick’s Korean and Indonesian factories has steadily improved, especially in the last few years, and the Indonesian product is said to be almost as good as the Korean. Many large-scale issues have been addressed and engineers are now working on smaller refinements. The company says that new CNC machinery installed in 2007 has revolutionized the consistency and accuracy of its manufacturing. Climate control in the tropically situated Indonesian factory, and issues of action geometry, are also among the areas that have recently seen improvement. Samick’s upper-level pianos—Kohler & Campbell Millennium series, J.P. Pramberger, and Wm. Knabe—have met with a very positive response from technicians as to their musical design and performance, exceeding comparably priced pianos from Japan in those regards. Workmanship is good, although still not quite as consistent as in the Japanese pianos. Many of Samick’s Indonesian pianos are priced similarly to low-cost pianos from China,

and technicians often report finding the Samicks to be more consistent than some of the Chinese. With dealer prep, Samick-made pianos are a good value for most typical uses.

[Note: Samick-made pianos have an odd system of serial numbers consisting of a series of letters and numbers. The system appears to vary from factory to factory. Please contact SMC for information on the date of manufacture of a Samick-made piano.]

Warranty: Samick, Kohler & Campbell, Conover Cable—10 years, parts and labor, to original purchaser; lifetime on “surface tension” soundboard where applicable.

SAUTER

Sauter USA
P.O. Box 1130
Richland, Washington 99354
509-946-8078
877-946-8078
+49-7424-94820 (factory)
info@sauteramerica.com
info@sauter-pianos.de
www.sauter-pianos.de
www.sauterforum.com

Pianos made by: Carl Sauter Pianofortemanufaktur GmbH & Co. KG, Max-Planck-Strasse 20, 78549 Spaichingen, Germany

The Sauter piano firm was founded in 1819 by Johann Grimm, stepfather to Carl Sauter I, and has been owned and managed by members of the Sauter family for six generations, currently by Ulrich Sauter. The factory produces about 800 vertical pianos and 120 grand pianos a year in its factory in the extreme south of Germany, at the foot of the Alps. Structural and acoustical parts are made of high-quality woods, including solid Bavarian spruce soundboards and beech pinblocks. Actions are made by Renner, and Sauter makes its own keys. The keybed is reinforced with steel to prevent warping, and all pianos are fully tropicalized for humid climates. The larger verticals use an action, designed and patented by Sauter, that contains an auxiliary jack spring to aid in faster repetition. Sauter calls this the R2 Double Escapement action. (Although the term *double escapement* does not apply here as it has historically been used, the mechanism has some of the same effects.)

Sauter pianos are especially known for the variety of finishes and styles in which they are available, many with intricate detail and inlay work. It is common to find such rare woods as yew, burl walnut, pyramid mahogany, and genuine ebony in the cabinets of Sauter pianos, as well as special engravings, which can be

customized to any customer’s desires. Sauter’s M Line of vertical pianos features exclusive cabinet detailing and built-in features such as a hygrometer to measure relative humidity. New Masterline institutional uprights, sold directly to institutions and not through dealers, include protective sidebars, industrial-grade casters, and locking mechanisms. Amadeus is a special-edition 6' 1" grand honoring the 250th anniversary of Mozart’s birth, with styling reminiscent of that in Mozart’s time. The natural keytops are of polished bone, the sharps of rosewood with ebony caps. Only 36 are to be made, one for each year of Mozart’s life.

The company also has introduced versions of its 48" upright and 6' 11" and 7' 6" grands with cabinets designed by the famous European designer Peter Maly. Some recent designs include the 48" upright Vitrea, after the Latin word for glass, with a veneer of greenish glass covering the front of the cabinet; and Ambiente, a 7' 6" grand that is asymmetrically curved on both the bass and treble sides. In the recent past, Sauter has won several prestigious design awards for its Peter Maly–designed pianos.

A couple of extremely unusual models bear mentioning. The 7' 3" model 220 has colored lines painted on the soundboard and white inlays on the tops of the dampers as guides for musicians performing music for “prepared piano,” ultramodern music requiring the insertion of foreign objects between the strings, or the plucking or striking of strings directly by the performer. The 1/16-tone microtonal piano is an upright with 97 keys that has a total pitch range, from its lowest to its highest note, of only one octave, the pitch difference from key to key being only 1/16 of a tone (1/8 of a semitone). You can read more about these strange instruments in *The Piano Book*.

Sauter pianos are high-quality instruments with a lush, full, singing tone, closer to an “American” sound than most other European pianos.

Warranty: 5 years, parts and labor, to original purchaser.

SCHILLER — See [Irmler](#).

SCHIMMEL

including Vogel and May Berlin

Schimmel Piano Corporation
577B Hackman Road
Lititz, Pennsylvania 17543
800-426-3205

schimmel@ptd.net
www.schimmel-piano.de

Pianos made by: Wilhelm Schimmel Pianofortefabrik GmbH, Braunschweig, Germany (Schimmel pianos); PianoEurope, Kalisz, Poland (Vogel pianos); various factories in China (May Berlin)

Wilhelm Schimmel began making pianos in Leipzig in 1885, and his company enjoyed steady growth through the late 19th and early 20th centuries. The two World Wars and the Depression disrupted production several times, but the company has gradually rebuilt itself over the past 60 years with a strong reputation for quality. Today, Schimmel is managed by Hannes Schimmel-Vogel, the husband of Viola Schimmel. Schimmel makes about 2,500 verticals and 500 grands per year and is one of Europe's most important piano makers. Yamaha owns a 24.9 percent non-voting interest in the Braunschweig company.

Among European piano manufacturers, Schimmel has been a pioneer in the use of computer-aided design and manufacturing. The company has used its Computer Assisted Piano Engineering (CAPE) software to research, design, and implement virtually every aspect of making a piano, from keyboard layout and action geometry to soundboard acoustics and scale design. According to Schimmel, the combination of CNC machinery and handcraftsmanship leads to better results than handwork alone. Schimmel also believes that precision is aided by controlling as much of the production process as possible. For that reason, Schimmel produces its own piano-cabinet components, which it also supplies to other German piano makers, as well as its own keyboards.

Over the last few years, Schimmel has reorganized its model lineup into two categories: Schimmel Konzert (models beginning with K) and Schimmel Classic (models beginning with C). The Konzert series consists of some of the newer and larger vertical models, and the six most recently designed and advanced grand models. The company says that the purpose of the Konzert series was to expand the Schimmel line upward to a higher level of quality than it had previously attained, in order to compete with other brands of the highest quality. The Classic series consists of the rest of the verticals, the 6' model 182 grand, and the 6'10" model 208 grand. This series represents models that have been tested over time and are solid, traditional, high-quality instruments, but without the latest refinements.

The Konzert series uprights—48" model K122, 49" model K125, and 52" model K132—are based on a more sophisticated philosophy of construction than the Classics. These models also incorporate triplex scaling and other advanced design features. Schimmel's philosophy for these uprights was to design them to be as much like the grands as possible. The treble scales, in fact, are exactly the same as in the Konzert grands.

The Konzert grands consist of two model groups. In the first, Schimmel has created a "trilogy" of grands by marrying the front end (keyboard) of its 7' grand to two

new models: 5'7" and 6'3". The new models all have the same treble scale, keyboard, and action as the 7' grand, and so all three have a similar sound and touch. The case sides are angled slightly to obtain a larger soundboard, a technique now applied to all the grand models. The pianos also have triplex scaling (front and rear duplexes) for greater tonal color. The second group, also a "trilogy," consists of the 7'5", 8'4", and 9'2" semi-concert and concert grand models. In this group, all three models have the same keyboard and action as the concert grand. These models also have tunable front and rear duplex scales, reinforced keys for optimal energy transmission, and mineral keytops to mimic the feel of ivory, among other advanced features.

The 6'3" model K189 and 7' model K213 are currently available in a Nikolaus W. Schimmel (NWS) model. Built to commemorate the retirement of the elder Nikolaus Schimmel, this model has many small technical and cosmetic refinements, uses top-quality soundboard material, and receives greater final preparation at the factory to create a really superior instrument.

Schimmel grand pianos have historically had a tone that was very bright and clear, but a bit thin and lacking in color in the treble. The grands were redesigned, in part, to add additional color to the tone, and the result is definitely more interesting than before. Sustain is also very good. The pianos are being delivered to U.S. dealers voiced less bright than previously, as this is what the American ear tends to prefer. As for the verticals, the smaller ones tend to have a very big bass for their size, with a tone that emphasizes the fundamental, giving the bass a warmer character. The 51" model K132, which features a grand-shaped soundboard, has a very big sound; listening to it, one might think one was in the presence of a grand.

In 2002, Schimmel acquired the PianoEurope factory in Kalisz, Poland, a piano restoration and manufacturing facility. Schimmel is using this factory to manufacture its Vogel brand, a moderately priced line named after the company's president. Schimmel says that although the skill level of the employees is high, lower wages and other lower costs result in a piano approximately 30 percent less costly than the Schimmel. Vogel grand pianos feature full Renner actions, with other parts mainly made by Schimmel in Braunschweig or by the Kalisz factory. The Vogel pianos, though designed by Schimmel, don't have all the refinements and advanced features of the latest Schimmel models. Nevertheless, the Vogels have received praise from many quarters for their high-quality workmanship and sound.

Schimmel now imports an entry-level series of pianos from China under the name May Berlin, a name long

owned by Schimmel but not used for a number of years. The pianos are made by several selected suppliers. The company says it sends soundboard wood and hammer felt for grand pianos to the factory in China. When completed, the pianos are first shipped to the Schimmel factory in Germany for inspection. Those that don't conform to Schimmel's standards are returned to China; the rest are further prepared before being sent on to dealers around the world.

Warranty: Schimmel, Vogel, May Berlin—10 years, parts and labor, to original purchaser.

SCHULZE POLLMANN

North American Music Inc.
11 Holt Drive
Stony Point, New York 10980
845-429-0106
www.schulzepollmann.com
www.namusic.com

Pianos made by: Schulze Pollmann s.r.l., Borgo Maggiore, San Marino

Schulze Pollmann was formed in 1928 by the merger of two German piano builders who had moved to Italy. Paul Pollmann had worked first with Ibach, then with Steinway & Sons (Hamburg), before opening his own piano factory in Germany. He later moved to Italy, where he met up with Albert Schulze, another relocated German piano builder. Pollmann managed the combined firm until 1942, and was followed by his son Hans, who had managed the piano-maker Schimmel before returning to his father's firm. Recently the company relocated a short distance to San Marino, a tiny city-state completely surrounded by Italy.

Schulze Pollmann uses both sophisticated technology and handwork in its manufacturing. The pianos contain Delignit pinblocks, solid European spruce soundboards, and Renner actions and hammers. Interesting features include a one-piece solid lock (laminated) back made of beech on the verticals, agraffes on the larger vertical, and finger-jointed construction of all soundboards to prevent cracking. Many of the cabinets have beautiful designs and inlays.

The uprights are well built and have a sound that is warm and colorful with a good amount of sustain. The treble is not nearly as brittle sounding as in some of the other European uprights. Schulze Pollmann grands are likewise very nicely crafted and arrive at the dealer in good condition. However, they need solid preparation by the dealer to sound their best.

In 2005, Italian auto manufacturer Ferrari Motor Car selected Schulze Pollmann as a partner in the

launch of its new Ferrari 612 Scaglietti series of automobiles. For the occasion, Schulze Pollmann crafted a limited-edition version of its 6'7" model 197/G5 grand piano, still available, with a case that sports the Ferrari racing red and a cast-iron plate in Ferrari gray carbon, the same color as the engine of the Scaglietti. The car and the piano have been exhibited together in cities around the world.

Warranty: 10 years, parts and labor, transferable to future owners within the warranty period.

SEILER

Samick Music Corp. (SMC)
1329 Gateway Drive
Gallatin, Tennessee 37066
800-592-9393
615-206-0077
info@smcmusic.com
www.seiler-pianos.com

Pianos made by: Ed. Seiler Pianofortefabrik, Kitzingen, Germany

Eduard Seiler, the company's founder, began making pianos in Liegnitz, Silesia, Germany in 1849. By 1923 the company had grown to over 435 employees and was producing up to 3,000 pianos per year—it was the largest piano manufacturer in Eastern Europe at that time. In 1945 and after World War II, the plant was nationalized by the Polish Communist government, and the Seiler family left their native homeland with millions of other refugees. In 1954 Steffan Seiler reestablished the company in Copenhagen under the fourth generation of family ownership, and began making pianos again. In 1962 he moved the company to Kitzingen, Germany, where it resides today. Steffan Seiler died in 1999; the company was managed by his widow, Ursula, until its sale to Samick in 2008. Seiler produces about 1,000 pianos annually. Samick says it plans to continue Seiler's tradition of making the highest-quality pianos.

Seiler uses a combination of traditional methods and modern technology. The scale designs are of relatively high tension, producing a brilliant, balanced tone that is quite consistent from one Seiler to the next. Although brilliant, the tone also sings well, due to, the company says, a unique soundboard feature called a Membrator—a tapered groove running around the perimeter of the board—that gives the soundboard flexibility without losing necessary stiffness. The grands have wide tails for greater soundboard area and string length. The pianos feature Bavarian spruce soundboards, multi-laminated beech pinblocks, quartersawn beech bridges, Renner actions, and slow-close fallboards. A few years

ago, the grands were redesigned with a duplex scale for greater treble tonal color, and with longer keys and a lighter touch. Musically, these redesigns were very successful. They retained the typical Seiler clarity, but with longer sustain and a marvelously even-feeling touch.

Seiler pianos come in Classic and Trend models. The construction and specifications are the same, but the Trends look a bit more modern and sport a silver-colored plate and chrome hardware, whereas the Classics have the traditional gold- or bronze-colored plate and brass hardware. Both versions are available with either the Seiler or Eduard Seiler name. The only difference is that Seiler pianos use Renner actions, whereas Eduard Seiler pianos use imported actions and are therefore slightly less expensive. Both the Seiler verticals and 6'1" grand are available in dozens of special furniture styles with beautiful, exotic woods and inlays.

Seiler's 52" upright is available with the optional Super Magnet Repetition (SMR) action, a patented feature that uses magnets to increase repetition speed. Tiny magnets are attached to certain action parts of each note. During playing, the magnets repel each other, forcing the parts to return to their rest position faster, ready for a new keystroke.

Warranty: 10 years, parts and labor, to original purchaser.

SEJUNG

including Falcone, Hobart M. Cable, Geo. Steck

America Sejung Corporation
5300 East Ontario Mills Parkway,
Suite 100
Ontario, California 91764
909-484-7498
866-473-5864

sales@sejungusa.com
www.sejungusa.com

Pianos made by: Sejung Corporation, Qingdao, Shandong Province, China

Sejung is a Korean-based company established in 1974. The musical instrument division of the business began production in 2001 with the creation of a partnership with Qingdao Sejung Musical Instruments in China. They began by building a 700,000-square-foot factory in Qingdao, a port city on the eastern coast with a temperate climate; hired dozens of managers who had once worked for Young Chang and Samick; and staffed the factory with some 2,000 workers. In order to attract skilled labor and reduce turnover, the company built dormitories to house and feed this labor force. The company has invested substantially in automated production equipment

to achieve high quality standards, and produces just about every piano component in its own factories.

Sejung currently manufactures the Falcone, George Steck, and Hobart M. Cable brand names. These lines are technically similar and are differentiated mostly by their cabinet styles. Most of the models have a solid spruce soundboard, slow-close fallboard, cast pedals, and maple trapwork. In addition, an upscale Falcone Georgian (FG) series includes such features as Abel hammers on grands 5'4" and larger, upgraded soundboard material, bubinga veneer on the inside of the grand rim, real ebony sharps, and gold-plated hardware.

The first pianos from Sejung were sold in the U.S. in fall 2002, less than one year after production began. A number of their first offerings were examined by technicians, and although still a little rough, they were definitely satisfactory, and remarkably good for such a new company. Since then, the factory has grown to become one of China's largest exporters of musical instruments, production has been refined, and quality has improved. After proper regulation and tuning, the pianos offer good value in an entry-level instrument. The 4'8" grand and the continental console are most appropriate for those buyers whose primary considerations are price or appearance.

For model and price information, see under Sejung in the "Model & Pricing Guide." During the current recession, dealers report buying Sejung product at enormous discounts, presumably while the company clears out excess inventory. Because this can't go on indefinitely, it seemed more prudent for me to list the normal prices from last year. However, while supplies last, it may be possible to purchase a Sejung-made piano for a fraction of the listed price.

Warranty: 12 years on parts, 10 years on labor, to original purchaser.

SOHMER (& CO.)

Founded by German immigrant Hugo Sohmer in 1872, Sohmer & Co. was owned and managed by the Sohmer family in New York City for 110 years. Having no descendants to take over the business, the founder's grandsons sold the company in 1982. As the company changed hands several times over the following decade, limited production of Sohmer pianos took place in Connecticut and Pennsylvania, finally ceasing in 1994 (see the Sohmer entry in *The Piano Book* for a more detailed recent history).

Pianos are once again being made under this venerable name, once considered among the finest of American-built instruments. However, for a number of years,

there has been a dispute over the ownership of the Sohmer trademark.

As mentioned above, the former Sohmer company ceased manufacturing pianos when its Pennsylvania factory closed in 1994, and by 2001 the original U.S. registrations for the Sohmer trademark had expired. In 2001, two different companies applied to register the trademark with the U.S. Patent and Trademark Office: Persis International, Inc., a Chicago-based piano distributor; and Burgett, Inc., owner of PianoDisc. For a number of years, pianos bearing the Sohmer name have been distributed by two companies. Persis began selling its Sohmer-branded pianos in 2001. Samick Music Corporation (SMC), the North American distributor of Samick-made pianos, began selling its own Sohmer-branded pianos under a purported license from Burgett in 2003.

Beginning in 2004, Persis and Burgett (and, later, SMC) were involved in a number of legal disputes regarding the rightful ownership of the Sohmer trademark. Although Persis was the first to both apply for and use the trademark in 2001, and therefore would normally be first in line to receive it, Burgett argued that its application should have priority under the law because it acquired the original Sohmer trademark registrations when it purchased the assets of Mason & Hamlin out of bankruptcy in 1996, and because of the long history of use of the Sohmer name by its predecessors. However, citing the fact that Burgett had let the trademark registrations expire and had not provided evidence of its own use of the name in commerce, the Trademark Office denied Burgett's claim. Then, in an attempt to reestablish its rights to the trademark under the theory of "acquired distinctiveness" (a legal term) through continuous use, Burgett, in a sworn affidavit, claimed that it had used the Sohmer name in commerce continuously for the previous five years (since at least 1999), a claim that Persis disputed at trial. In 2009, as the trial was nearing completion, Burgett assigned its still-unregistered trademark application, and any alleged rights it had in the Sohmer trademark, to SMC, and SMC quickly settled its dispute with Persis. Under the settlement, Persis is the undisputed owner of the Sohmer trademark worldwide, and SMC will cease selling Sohmer pianos in 2010.

The Samick-made pianos can be expected to remain on dealers' showroom floors for the near future, until sold, and Samick will continue to honor the warranties of the instruments it manufactured. (Note: Persis's pianos are labeled "Sohmer," and SMC's are labeled "Sohmer & Co." Both companies submitted product information, including model and price data, for this publication.)

Persis International, Inc.
2647 N. Western Ave. #8030
Chicago, Illinois 60647
773-342-4212
www.sohmer-piano.com

Sohmer pianos from this distributor are manufactured by Royale, a Korean firm descended from a former joint venture between the German manufacturer Ibach and the Korean manufacturer Daewoo, neither of which any longer makes pianos. During the German-Korean joint venture, the string scales, bridges, soundboards, rib dimensions, actions, keys, and hammers were redesigned by Ibach to German standards. Models include a 50" vertical and 5'3", 5'10", and 7'2" grands. The pianos have high-quality European components, such as Renner actions, Abel hammers, Delignit pinblocks, Röslau strings, and Ciresa solid spruce soundboards.

Warranty: 10 years, parts and labor, to original purchaser.

Samick Music Corp. (SMC)
1329 Gateway Drive
Gallatin, Tennessee 37066
615-206-0077
800-592-9393
www.smcmusic.com

The Sohmer & Co. piano has traditionally been a higher-quality line with beautiful furniture, and under SMC's distributorship that tradition has continued. The grand piano scales have recently been updated, but the furniture still resembles that of vintage American-made pianos of the past, and the material specifications remain unchanged. The grands have maple outer rims, sand-cast plates, solid white spruce soundboards, Renner hammers, solid brass hardware, American hardrock maple pinblocks, maple or beech action rails, lacquer semigloss wood finishes, and other higher-quality features. The new 6'10" grand uses in its construction computerized manufacturing technology, developed in cooperation with Bechstein. The grands are now made in Indonesia, though Korean-made models may still be on dealers' showroom floors.

The Sohmer & Co. vertical line has also been changed. When SMC began distributing Sohmer pianos, it started with a beautiful 42" console that was nearly an exact replica of the original Sohmer console of old, and with a 45" studio made in Korea. These turned out to be at price points that were too high for consumer demand. The Sohmer vertical line now consists of a 43" model 43

console in Traditional and French-style cabinets, a 46½" model 47S institutional (school) studio in ebony and a variety of wood finishes, and a new 48" model 48P, offered this year in both polished and satin ebony with nickel hardware. All three models feature full-length backposts, a sand-cast plate, spruce veneer-laminated soundboard, American hardrock maple pinblock, horn-beam action parts, hardwood cabinet construction, maple or beech bridge caps, and a slow-close fallboard. These models are all made in Indonesia to specifications that are slightly lower than those for the Sohmer grands, and may be similar to some models sold by SMC under other names, such as Samick and Pramberger.

Warranty: 10 years, parts and labor, transferable to future owners within the warranty period.

STECK, GEO. — See [Sejung](#).

STEINBERG, GERH. — See [Perzina, Gebr.](#)

STEINBERG, WILH.

Thüringer Pianoforte GmbH

Mozartstrasse 3

07607 Eisenberg, Germany

+49-36691-5950

+49-36691-59540 (fax)

WSTPianos@aol.com

www.Wilh-Steinberg.com

Pianos made by: Thüringer Pianoforte GmbH, Eisenberg, Germany

This company, formerly known as Wilhelm Steinberg Pianofortefabrik, was formed by the merger of several East German piano companies following the reunification of Germany. These companies collectively trace their origins back to 1877. Steinberg also makes cabinets for other German piano makers, and makes several European piano brands under OEM agreement. The company also specializes in custom cabinets and finishes. Piano production is about 900 verticals and 50 grands per year.

Steinberg makes four models of vertical piano (46", 48", 48½", and 51") and two sizes of grand (5'8" and 6'4") in its IQ series. These high-quality pianos have beech rims with spruce bracing (grands), solid Bavarian spruce soundboards, maple bridges with maple cap, Renner actions and hammers, and Kluge keys, and are entirely made in Germany.

The company says it plans to introduce two levels of less-expensive piano models. With the IQ as Level 1, the Level 2 pianos would be largely made in China from

mostly German parts, then extensively refined and adjusted at the Wilh. Steinberg factory in Germany before being shipped to dealers. Level 3 pianos would be entirely made in China, though with many German parts.

Warranty: 5 years, parts and labor, to original purchaser.

STEINGRAEBER & SÖHNE

Steingraeber & Söhne

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Bayreuth is famous the world over for its annual summer Wagner festival. But tucked away in the old part of town is a second center of Bayreuth musical excellence and one of the piano world's best-kept secrets: Steingraeber & Söhne. Founded in Bayreuth in 1852, and in its present factory since 1872, Steingraeber is one of the smaller piano manufacturers in the world, producing fewer than 80 grands and 60 verticals per year for the top end of the market. It is owned and operated by sixth-generation family member Udo Steingraeber, who still makes pianos using the traditional methods of his forebears.

Steingraeber makes three sizes of vertical piano: 48", 51", and 54". An interesting option on the vertical pianos is their "twist and change" panels: two-sided top and bottom panels, one side finished in polished ebony, the other in a two-toned combination of a wood veneer and ebony. The panels can be reversed as desired by the piano owner to match room décor, or just for a change of scenery.

The company also makes four sizes of grand piano—5'7", 7', 7'7", and 8'11". The 5'7" model A-170 grand (formerly model 168) has an unusually wide tail, allowing for a larger soundboard area and longer bass strings than are customary for an instrument of its size. The 7' model C-212, known as the Chamber Concert Grand, and redesigned this year from the model 205, was intended to embody the tone quality of the Steingraeber Liszt grand piano of circa 1873, but with more volume to the bass register. The 8'11" model E-272 concert grand was introduced in 2002 for Steingraeber's 150th anniversary. Unique features include a drilled capo bar for more sustain in the treble, unusually shaped rim bracing, and a smaller soundboard resonating area in the treble to better match string length. In 2007 Steingraeber introduced a new 7'7" D-232 concert

grand to provide an additional smaller, concert-size instrument. Its design features many of the innovations of the E-272. I recently experienced the new 7'7" grand, and it is phenomenal!

Steingraeber pianos have a unique sound, with an extensive tonal palette derived from a mixture of clarity and warmth.

Steingraeber is known for its many innovative technical improvements to the piano. One new one is a cylindrical, revolving knuckle (grand piano action part). It acts like a normal knuckle until the hammer reaches the let-off position. After that point, in soft playing, the knuckle revolves, reducing friction and making pianissimo playing easier, smoother, and more accurate. Another innovation is a new action for upright pianos. This SFM action, as it is called, contains no jack spring, instead using magnets to return the jack more quickly under the hammer butt for faster repetition. It is available in all three models of vertical piano. Steingraeber also specializes in so-called ecological or biological finishes, available as an option on most models. This involves the use of only organic materials in the piano, such as natural paints and glues in the case, and white keytops made from cattle bone.

In addition to its regular line of pianos, Steingraeber makes a piano that can be used by physically handicapped players who lack the use of their legs for pedaling. A wireless (bluetooth) pedal actuator in the form of a denture is actuated by biting on the denture.

The Steingraeber engineering department has designed and manufactured prototypes of new piano models for a number of other European piano manufacturers. These designs are not the same as Steingraeber's own current models.

Warranty: 10 years, parts and labor, to original purchaser.

Steingraeber Phoenix System Pianos

Unique Pianos

Brian Gatchell

25 South Wickham Rd.

Melbourne, Florida 32904

888-725-6633

321-725-5690

brianatlantic@bellsouth.net

www.atlanticmusiccenter.com

Pianos made by: Steingraeber & Söhne, Bayreuth, Germany

Steingraeber's most innovative technical improvement is the Steingraeber Phoenix system, introduced in 2008. Phoenix, initially developed by U.K. engineer Richard Dains and further developed by Steingraeber and used

under license, is a system of tonal transmission that includes a soundboard made of a sheet of carbon fiber, and bridge agraffes that hold the strings to the bridge without compressing the soundboard. With the soundboard free of compression, and given the low-density, low-mass nature of the carbon fiber and its resistance to absorbing energy, a great amount of sound energy is conserved—so much that pianos outfitted with this system sound in certain respects like much larger instruments, with both increased sustain and greater volume of sound. A side benefit of the carbon fiber soundboard is that it is resistant to humidity changes, so the piano needs tuning much less often.

The bridge agraffes are quite complex in construction and completely unlike the simple ones sometimes used, with mixed success, in unusual pianos of the past. They provide very efficient transmission of tonal energy from the string to the bridge, with little downward pressure on the soundboard. To minimize downbearing, the precise setting of downbearing is aided by vertical, adjustable hitch pins. One challenge to the development of the Phoenix system has been the much greater production of higher harmonics once the impediments to sound transmission are removed. These harmonics are moderated by voicing.

All Phoenix-system pianos are equipped with a revolutionary new soft pedal that operates both an una corda (shift) mechanism, and a mechanism that allows for hammer blow-distance reduction, for different types of volume-reduction effects.

Steingraeber is now making the Phoenix system available by special order in each of its grand piano models. Both the carbon fiber soundboard (without the bridge agraffes), and the new soft pedal, are also available as options on regular Steingraeber models.

More information about the Phoenix system can be found at www.hurstwoodfarmpianos.co.uk, as well as on the Steingraeber website.

STEINWAY & SONS

Steinway & Sons

One Steinway Place

Long Island City, New York 11105

718-721-2600

800-366-1853

www.steinway.com

Heinrich Engelhardt Steinweg, a cabinetmaker and piano maker from Seesen, Germany, emigrated with his family to the United States in 1850, and established Steinway & Sons in 1853. Within a relatively short time, the Steinways were granted patents that revolutionized

the piano, and which were eventually adopted or imitated by other makers. Many of these patents concerned the quest for a stronger frame, a richer, more powerful sound, and a more sensitive action. By the 1880s, the Steinway piano was in most ways the modern piano we have today, and in the next generation the standards set by the founder were strictly adhered to. (The early history of Steinway & Sons is fascinating, and is intimately connected to the history of New York City and the piano industry in general. You can read a summary of it in *The Piano Book*; there are also several excellent books devoted to the subject.)

In the 1960s, the fourth generation of Steinways, finding themselves without any heirs willing or able to take over the business, and without enough capital to finance much-needed equipment modernization, sold their company to CBS in 1972. CBS left the musical instrument business in 1985, selling Steinway to an investment group. In 1995 the company was sold again, this time to Conn-Selmer, Inc., a major manufacturer of brass and woodwind instruments. The combined company, now known as Steinway Musical Instruments, Inc., is listed on the New York Stock Exchange under the symbol LVB. Steinway also owns a branch factory in Hamburg, Germany, which serves the world market outside of the Americas, and two major suppliers: the Herman Kluge company, Europe's largest maker of piano keys; and the O.S. Kelly company, the only remaining piano plate foundry in the U.S.

Steinway makes two types of vertical piano in three sizes: a 45" model 4510 studio, a 46½" model 1098 studio, and a 52" model K-52 upright. Models 4510 and 1098 are technically identical, with differences only in the cabinets: the former is in a period style for home use, the latter in an institutional cabinet for school use or less furniture-conscious home use. In all three models, the middle pedal operates a sostenuto mechanism. All Steinway verticals use a solid spruce soundboard, have no particleboard, and in many other ways are similar in design, materials, and quality of workmanship to Steinway grands. Actions are made by Renner. Model K-52 in ebony, and model 1098 in ebony, mahogany, and walnut, come with an adjustable artist bench, the others with a regular bench.

Technicians have always liked the performance of Steinway verticals, but used to complain that the studio models in particular were among the most difficult pianos to tune and would unexpectedly jump out of tune. In recent years, Steinway has made small design changes to alleviate this problem. The pianos are now mechanically more normal to tune and are stable, but an excess of false beats (tonal irregularities) still make the pianos at times difficult to tune.

Steinway makes six sizes of grand piano, two of which are new within the last several years. All ebony, mahogany, and walnut grand models come with an adjustable artist bench, the others with a regular bench.

The 5'1" model S is very good for a small grand, but has the usual limitations of any small piano and so is recommended only where space considerations are paramount. The 5'7" model M is a full six inches longer, but costs little more than the S. Historically one of Steinway's more popular models, it is found in living rooms across the country. Its medium size makes the tone in certain areas slightly less than perfect, but it's an excellent home instrument.

The 5'10½" model L has been replaced with the model O of the same size. Model O was first produced in 1902, but discontinued in 1924 in favor of the model L. Changes over time in both engineering and musical taste, as well as a desire to better synchronize the offerings of the New York factory with Hamburg (where the model O was never abandoned), seemed to dictate a return to the O. The main difference between the two models is in the shape of the tail—the L has a squared-off tail, the O a round tail—but this can also affect the soundboard and bridges and therefore the tone.

Reintroduction of the model O followed by one year the reintroduction of the legendary 6'2" model A. First offered in 1878 and discontinued in New York in 1945, the model A revolutionized piano making by featuring, for the first time, the radial rim bracing and one-piece bent rim construction now used in all Steinway grands. Over the years the model A has gone through several makeovers, each of slightly different size and scaling. The version being reintroduced was made in New York from 1896 to 1914 and is the same size as the model A that has been made at the Hamburg factory for more than a century. Models O and A are suitable for larger living rooms, and for many school and teaching situations.

The 6'10½" model B is the favorite of many piano technicians. It is the best choice for the serious pianist, recording or teaching studio, or small recital hall. Small design changes and other refinements to this model in recent years have brought a steady stream of accolades. The 8'11¾" model D, the concert grand, is the flagship of the Steinway line and the piano of choice for the overwhelming majority of concert pianists. It's too large for most places other than the concert stage.

Steinway uses excellent materials and construction techniques in the manufacture of its grands. The rims, both inner and outer, are made in one continuous bend from layers of maple, and the beams are of solid spruce. The keybed is of quartersawn spruce planks freely mortised together, and the keys are of Bavarian spruce. The

pinblock consists of seven laminations of maple with successive grain orientations of 45 and 90 degrees. The soundboard is of solid Sitka spruce, the bridges are vertically laminated of maple with a solid maple cap, and all models have duplex scaling.

It is well known that Steinway's principal competition comes from used and rebuilt Steinways, many of which come in exotic veneers or have elaborately carved or customized "art cases." The company has responded by expanding its product line to include modern-day versions of these collector's items. The Crown Jewel Collection consists of the regular models in natural (non-ebonized) wood veneers, many of them exotic. They are finished in a semigloss finish Steinway calls Satin Lustre. Limited Edition models, issued at irregular intervals, are reproductions of turn-of-the-century designs, available only in models O and B. The newest Limited Edition model is one honoring Henry Z. Steinway who, until his death in 2008, was the oldest living member of the Steinway family. This model has Victorian-style legs and lyre, an intricately carved music desk and period cabinet detailing, and is available in ebony with chrome-plated hardware, or East Indian rosewood.

During the early 1900s, ownership of art-case Steinways became a symbol of wealth and culture. Steinway has resumed this tradition by regularly commissioning noted furniture designers to create new art-case designs, usually around a theme. For example, in 1999 Frank Pollaro designed an art case called Rhapsody to commemorate the 100th anniversary of the birth of George Gershwin. The piano featured a blue-dyed maple veneer adorned with more than 400 hand-cut mother-of-pearl stars and a gilded silver plate. Each year sees new art-case pianos from Steinway, and they are truly stunning. Steinway's Legendary Collection consists of occasional one-of-a-kind reproductions of historical art-case pianos.

As another way of capitalizing on the popularity of older Steinways, the company also operates at its factory the world's largest piano rebuilding facility for the restoration of older Steinways. *The Piano Book* contains a great deal of additional information on the purchase of older or restored Steinways. See also "[Buying a Used or Restored Piano](#)" in this publication.

The underlying excellence of the Steinway musical designs and the integrity of the construction process are the hallmarks of the Steinway piano. Steinway pianos at their best have the quintessential American piano sound: a powerful bass, a resonant midrange, and a singing treble with plenty of tonal color. Although other brands have some of these characteristics, it is perhaps the particular combination of harmonics that comprise

the Steinway's tonal coloration that, more than anything else, distinguishes it from other brands and gives it its richness, depth, and power. The construction process creates a very durable and rigid framework that also contributes to the power of its sound. As with other American-made pianos, musical and cabinet detailing, such as factory voicing and regulation, and plate and cabinet cosmetics, are reasonable but lag somewhat behind the company's European competitors in finesse. Some of this can be finished off by thorough and competent dealer make-ready.

Steinway pianos require more preparation by the dealer than most pianos in their class, but over the last several years the factory preparation has greatly improved, so the work required by the dealer is no longer excessive. Still, some dealers are more conscientious than others, and I occasionally hear of piano buyers who "can't find a good Steinway." How much of this is due to inherent weaknesses in some pianos, how much to lack of dealer preparation, and how much to customer bias or groundless complaining is hard to tell. I suspect it is a little of each. Piano technicians who work on these pianos do sometimes remark that some seem to have more potential than others. Many dealers do just enough regulating and voicing to make the instruments acceptable to the average customer, but reserve the highest level of work for those situations where a fussy customer for one of the larger models is trying to decide between a few particular instruments. Most customers for a Steinway will probably find one they like on the sales floor. However, if you are a discriminating buyer who has had trouble finding a Steinway that suits your preferences, I recommend letting the salesperson know, as precisely as you can, what you're looking for. Give the salesperson some time to have a few instruments prepared for you before making a decision. It may also help to tactfully let the salesperson know that you are aware that other options are available to you in the market for high-end pianos. By the way, customers seeking to purchase a model B or D Steinway who have not found the piano they are looking for at their local dealer can make arrangements with that dealer to visit the Steinway factory in New York, where a selection of the larger models is kept on hand for this purpose.

As mentioned earlier, Steinway owns a branch factory in Hamburg, Germany, established in 1880. The "fit and finish" (detailing) of the pianos at this factory is reputed to be better than at the one in New York, although pianists sometimes prefer the sound of the New York Steinway. Traditionally, the Hamburg factory has operated somewhat autonomously, but more recently the company has been synchronizing the two plants

through technical exchanges, model changes, jointly built models, and materials that are shipped from New York to Hamburg. It's possible to special-order a Hamburg Steinway through an American Steinway dealer; or an enterprising American customer could travel to Europe, buy one there, and have it shipped back home.

In 2008 Steinway underwent a change in management, the first in 23 years. For the first time, the company's top executives have been recruited from its European operations rather than from America. It is speculated that this may signal a subtle change of direction with regard to quality issues, and that we soon may see European quality standards more strictly applied to the American-made instruments.

Warranty: 5 years, parts and labor, to original purchaser.

STORY & CLARK

Story & Clark Piano Co.
269 Quaker Drive
Seneca, Pennsylvania 16346
800-247-6557
814-676-6683
www.qrsmusic.com

Owned by: QRS Music Technologies, Inc.

Pianos made by: Samick Musical Instrument Mfg. Co. Ltd.,
Bogor, West Java, Indonesia

Hampton Story began making pianos in 1857 and was joined by Melville Clark in 1884. The business settled in Grand Rapids, Michigan, in 1901, where it remained, under various owners, until about 1986. Around 1990, a new owner moved the company to its present location in Seneca, Pennsylvania. Over the years, pianos were manufactured under a number of different names, including, in recent years, Story & Clark, Hobart M. Cable, Hampton, and Classic. In 1993 QRS Piano Rolls, Inc., now QRS Music Technologies, Inc., purchased Story & Clark. (Ironically, QRS itself was founded in 1901 by Melville Clark, of the Story & Clark Piano Co. of old.) QRS, historically the nation's major source of music rolls for traditional player pianos, now manufactures electronic player-piano systems that can be retrofitted into any piano (see "[Buying an Electronic Player-Piano System](#)").

In an effort to offer unique and exclusive scales and styles, Story & Clark recently moved its source of manufacturing from China, where the pianos had for some time been made by Dongbei, to Indonesia, where they are now made by Samick.

The company now offers two series of vertical and grand pianos. The Heritage Series is a popularly priced

line of verticals and grands with a Storytone II soundboard—Story & Clark's name for the veneer-laminated soundboard developed by Samick (see [Samick](#)).

The Signature Series also comes in both vertical and grand models. These pianos feature premium Renner hammers, Röslau strings, maple and mahogany rims, solid brass hardware, Bolduc tapered soundboards of solid spruce, sand-cast plates, and advanced low-tension scales. The pianos have cabinet designs that offer lots of detail for the money and coordinate with major furniture trends. In spite of their beauty, the company says, these pianos are also appropriate for school and commercial applications.

In keeping with the tradition begun by Hampton Story of integrating technology into pianos, all Story & Clark pianos are now equipped with an exclusive feature called PNOscan™. PNOscan is an optical sensor strip attached to the key frame directly under the keys. It senses the velocity and up/down movement of each key so that it can precisely re-create every detail of an original performance, including the force, speed, and duration of each note played, without affecting the touch or response of the keyboard. The data captured by PNOscan is then transmitted through either a USB connection or MIDI output to a computer, general MIDI sound module, or other digital device. The addition of PNOscan to every Story & Clark acoustic piano gives customers the potential to have all the features of a digital piano. When combined with various accessories, PNOscan gives users the ability to learn, record, compose, practice in silence, and more.

Warranty: 15 years, parts and labor, to original purchaser. Lifetime limited warranty to original purchaser and 25-year transferable warranty to subsequent purchasers on the Storytone II soundboard.

SUZUKI

Suzuki Corporation
P.O. Box 261030
San Diego, California 92196
800-854-1594
858-566-9710
www.suzukipianos.com

Pianos made by: Possibly Artfield Piano Co., Qingpu,
Shanghai, China

Suzuki Corporation, the world's largest producer of musical instruments for education, has entered the acoustic piano business with a line of vertical and grand pianos made in China. The pianos are sold online at www.suzukipianos.com and through Costco, as well

as through regular piano dealers. The company prefers not to be specific as to the source of its pianos.

Warranty: 10 years, parts and labor, to original purchaser.

TAYLOR — See [Brodmann](#).

VOGEL — See [Schimmel](#).

VOSE & SONS — See [Everett](#).

WALTER, CHARLES R.

Walter Piano Company, Inc.

25416 CR 6

Elkhart, Indiana 46514

574-266-0615

www.walterpiano.com

Charles Walter, an engineer, was head of Piano Design and Developmental Engineering at C.G. Conn in the 1960s, when Conn was doing important research in musical acoustics. In 1969 Walter bought the Janssen piano name from Conn, and continued to make Janssen pianos until 1981. In 1975 he brought out the Charles R. Walter line of consoles and studios, based on his continuing research in piano design. Walter began making grands in 1997.

The Walter Piano Company is fairly unique among U.S. piano manufacturers in that it is a family business, staffed by Charles and his wife, several of their grownup children, and various in-laws, in addition to unrelated production employees. The Walters say that each piano is inspected and signed by a member of their family before being shipped. Dealers and technicians report that doing business with the Walters is a pleasure in itself.

The Charles R. Walter line consists of 43" and 45" studio pianos in various decorator and institutional styles, and 5'9" and 6'4" grands. Note that both vertical models have full-size actions and therefore are studio pianos, not consoles, as I define those terms. In fact, they are identical pianos inside different cabinets. Walter calls the 43" model a console because of its furniture styling, but due to its larger action, it will outplay most real consoles on the market.

Although Mr. Walter is not oblivious to marketing concerns, his vertical piano bears the mark of being designed by an engineer who understands pianos and strives for quality. The pianos are built in a traditional manner, with heavy-duty, full-length spruce backposts; a solid spruce soundboard; and Delignit pinblock. Exceptionally long, thick keys that are individually

lead-weighted provide a very even feel across the keyboard. The scale design is well thought out and the bass sounds good most of the way to the bottom. The cabinetry is substantial, contains no particleboard, and is beautifully finished. Some of the fancy consoles in particular, such as the Queen Anne models, are strikingly beautiful. The pianos are well prepared at the factory and so need minimal preparation by the dealer.

The vertical pianos now use Renner actions, but a Chinese-made action is available as a lower-cost option, reducing the price of the piano by about \$1,000 (list). The Chinese parts are virtually indistinguishable from the Renner parts, but they make the action feel just slightly lighter due to differing spring tensions.

The Walter 5'9" and 6'4" grands were designed by Del Fandrich, one of the nation's most respected piano-design engineers. Both models have high-quality features such as a maple rim, Renner action, Kluge keys, Delignit pinblock, tapered solid spruce soundboard, and Abel hammers (Ronsen hammers in the 5'9" model). The 5'9" grand also has a number of innovative features: A portion of the inner rim and soundboard at the bass end of the piano are separated from the rest of the rim and allowed to "float." Less restricted in its movement, the soundboard can reproduce the fundamental frequencies of the lower bass notes more as a larger piano does. A special extension of the tenor bridge creates a smoother transition from bass to treble. Eight plate nosebolts increase plate stability, helping to reduce energy loss to the plate and thus increase sustain. Inverted half-agraffes embedded in the capo bar maintain string alignment and reduce unwanted string noise. The Walter grands are competently built and play very well.

Warranty: 12 years, parts and labor, transferable to future owners within the warranty period.

WEBER — See [Young Chang](#).

WEINBACH — See [Petrof](#).

WENDL & LUNG

Wendl & Lung USA

P.O. Box 1130

Richland, WA 99354

509-946-8078

info@wendl-lung-usa.com

www.wendl-lung.com

Pianos made by: Ningbo Hailun Musical Instruments Co. Ltd.,
Ningbo, Zhejiang Province, China

Wendl & Lung was founded in Vienna, Austria in 1910 by Johann Wendl and Stefan Lung. Lung's daughter, Stefanie Lung Veletzky, studied piano making and became a master pianomaker, an extraordinary achievement for a woman at that time. Wendl & Lung pianos were sold primarily in Central and Eastern Europe, and the company expanded for a while after World War II before shutting down in 1956. Successive generations of Veletzky's were involved in piano making, and there were a number of attempts to revive the company over the next 45 years. In 2003, Peter Veletzky, great-grandson of the founder, began a cooperative arrangement with Chinese manufacturer Hailun to develop and build pianos for distribution under the Wendl & Lung name. Leading piano designers from around the world also contributed to these new designs (see **Hailun**). These models also eventually became part of the Hailun line of pianos. In 2008, the company introduced a 7'2" model 218 grand designed by French concert pianist and technician Stephen Paulello, who is also working on a concert grand for the company. Wendl & Lung pianos use cold-pressed hammers, which, the company says, contribute to a more "Viennese" sound.

Several technical innovations are proprietary to Wendl & Lung pianos. Denis de la Rochefordiere has invented a fourth pedal, called the Harmonic Pedal, that is essentially the inverse of a sostenuto—instead of holding up the dampers of notes pressed prior to depressing the pedal, it holds up all *but* those notes. The effect, known as "remanence harmony," is to allow the overtones of the depressed notes to sing out in a sustained fashion. This pedal will come with all Wendl & Lung grands starting sometime in 2010. Also coming soon is a double-repetition action for an upright, enabling the upright to play like a grand.

The Wendl & Lung brand is widely distributed in Europe and quite popular there. Distribution in the U.S. is in its early stages.

Warranty: The 10-year parts and labor warranty is transferable once during the first two years of ownership for verticals, or the first three years for grands. The transferability is more liberal if the owner upgrades to a Sauter piano (see warranty terms). Although Sauter and Wendl & Lung are separate companies, this cooperation is possible because the U.S. distributor for both brands is the same.

WURLITZER — See **Baldwin.**

WYMAN

Wyman Piano Company
P.O. Box 506
Colusa, California 95932
513-543-0909
206-350-7912 (fax)
info@wymanpiano.com
www.wymanpiano.com

Pianos made by: Beijing Hsinghai Piano Group, Ltd., Beijing, China

Wyman Piano Company was created by experienced former Baldwin executives with more than 60 years of combined piano industry experience. Although a relatively new company, Wyman distribution has grown to include the U.K., Germany, and Japan, as well as the U.S.

The regular Wyman line consists of six vertical piano sizes and four grand models in a variety of cabinet styles and finishes. All are based on German scale designs and are manufactured in China by the Beijing Hsinghai Piano Group (see **Beijing Hsinghai**) at that company's new 1.2-million-square-foot factory. A new, limited-production premium line of Wyman Pianoforte models, made in a small production facility in the Beijing area, features deluxe cabinets and some upgraded technical features.

Wyman offers the model CD2 player-piano system by Pianoforce, a new entrant in the field of player-piano systems (see **Pianoforce** in the **article on electronic player-piano systems**). The optional CD system features a unique stamped rail designed specifically for these pianos that, according to the company, allows a much lower profile than other player systems that use universal rails to fit any piano. These are installed at the Beijing factory.

Wyman says that its executives make frequent trips to the factory in Beijing to monitor manufacturing and inspect finished instruments.

Warranty: 10 years, parts and labor, transferable to future owners within the warranty period. Lifetime warranty on the soundboard.

XINGHAI — See **Beijing Xinghai.**

YAMAHA

including Cable-Nelson. See separate listing for [Disklavier](#) in "Buying an Electronic Player-Piano System."

Yamaha Corporation of America

P.O. Box 6600

Buena Park, California 90622

714-522-9011

800-854-1569

infostation@yamaha.com

www.yamaha.com

Pianos made by: Yamaha Corporation, Hamamatsu, Japan and other locations (see text)

Torakusu Yamaha, a watchmaker, developed Japan's first reed organ, and founded Yamaha Reed Organ Manufacturing in 1887. In 1899 Yamaha visited the U.S. to learn to build pianos. Within a couple of years he began making grand and vertical pianos under the name Nippon Gakki, Ltd. Beginning in the 1930s, Yamaha expanded its operations, first into other musical instruments, then into other products and services, such as sporting goods and furniture, and finally internationally.

Export of pianos to the U.S. began in earnest about 1960. In 1973 Yamaha acquired the Everett Piano Co., in South Haven, Michigan, and made both Yamaha and Everett pianos there until 1986. In that year, the company moved its piano manufacturing to a plant in Thomaston, Georgia, where it made Yamaha consoles, studios, and some grands until 2007, when a depressed piano market and foreign competition forced it to close its doors. Since then, the company has introduced new models, made in other Yamaha factories, to replace those formerly made in Thomaston.

Yamaha is probably the most international of the piano manufacturers. In addition to its factories in Japan, Yamaha has plants and partnerships with other companies in Germany (with Schimmel), Mexico, China, and Indonesia. Yamaha pianos sold in the U.S. are made in Japan, China, and Indonesia. In 2009, Yamaha closed its factories in England (with Kemble) and Taiwan. Models formerly made in those factories will in the future be produced in Yamaha's other Asian plants.

Yamaha's console line consists of 44" models M460 and M560 in furniture style (freestanding legs) with increasing levels of cabinet sophistication and price. All are internally the same and have a compressed action typical of a console, so the action will not be quite as responsive as with larger models.

The studio line consists of the popular 45" model P22 in institutional style (legs with toe blocks) with school-friendly cabinet; the furniture-style version P660; and the 47" model T118 in a less-expensive, traditional

institutional-style cabinet. All are more or less the same internally, with a full-size action. The institutional-style studios are made in China, the furniture-style consoles and studios in Taiwan.

The uprights are the very popular 48" model U1, the 48" model T121 in a less-expensive cabinet (otherwise the same), and the 52" model U3. Models U1 and U3 now sport a longer music desk—a very welcome addition. Model U3 joins model U5 (now available only as a Super U model—see below) in the use of a "floating" soundboard—the soundboard is not completely attached to the back at the top, allowing it to vibrate a little more freely to enhance tonal performance. A new Super U series of uprights (YUS1, YUS3, and YUS5) have different hammers and get additional tuning and voicing at the factory, including voicing by machine to create a more consistent, more mellow tone. Model YUS5 uses German Rösler music wire instead of Yamaha wire, also for a mellower tone. This top-of-the-line 52" upright also has agraffes, duplex scaling, and a sostenuto pedal (all other Yamaha verticals have a practice/mute pedal). The uprights are made in Japan.

Yamaha vertical pianos are very well made for a mass-produced piano. The taller uprights in particular are considered a "dream" to service by technicians, and are very much enjoyed by musicians. Sometimes the pianos can sound quite bright, though much less so now than in previous years. The current version of the model P22 school studio is said to have been redesigned to sound less bright and have an improved spectrum of tonal color. Double-striking of the hammer in the low tenor on a soft or incomplete stroke of the key is a problem occasionally mentioned in regard to Yamaha verticals by those who play with an especially soft touch. This tendency is a characteristic of the action design, the tradeoff being better-than-normal repetition for a vertical piano. It's possible that a technician can lessen this problem if necessary with careful adjustment, but at the risk of sacrificing some speed of repetition.

Yamaha grands come in four levels of sophistication and size. The Classic Collection consists of the 4'11" model GB1K, the 5'3" model GC1M, and the 5'8" model GC2 (new this year). The GB1K has simplified case construction and cabinetry, no duplex scale, and the middle pedal operates a bass-sustain mechanism. It does have a soft-close fallboard. It is currently the only Yamaha grand sold in the U.S. that is made in Indonesia. The GC1M and GC2 have regular case construction, duplex scale, soft-close fallboards, and sostenuto pedal (the sostenuto was restored this year to the GC1, which was then renamed the GC1M), making them in most respects just like the models C1 and C2 (see below).

The Conservatory Collection consists of the 5'3" model C1, the 5'8" model C2, the 6'1" model C3, and the 6'7" model C5. The Conservatory Concert Collection comprises the 6'11" model C6 and the 7'6" model C7. Both collections have the advanced construction, scaling, and cabinetry mentioned above, including a true sostenuto pedal and a soft-close fallboard. Both now have vertically laminated bridges with maple or boxwood cap. The vertically laminated design is similar to that found in Steinways and other fine pianos, and is considered to give the bridges greater strength and resistance to cracking and better transmission of vibrational energy. The larger grands also have keytops of Ivorite™, Yamaha's ivory alternative.

Finally, the new CF Series Concert Grand Pianos (replacing the current Handcrafted Concert Collection and available in Summer 2010) consist of the 9' model CFX (replacing the model CFIIS), and the 6'3" model CF4 and 7' model CF6 (replacing, in the U.S., the models S4B and S6B, which will remain available by special order only). The pianos in this collection are made in a separate factory to much higher standards and with some different materials. For example, they use maple and mahogany in the rim, which is made more rigid, for greater tonal power, than in the other collections; higher-grade soundboard material; a treble "bell" (as in the larger Steinways) to enhance treble tone; German strings, and hammer and scaling changes, for a more mellow tone; as well as the more advanced features of the other collections. The result is an instrument capable of greater dynamic range, tonal color, and sustain than the regular Yamahas. The new CF-series pianos have a thicker rim and more substantial structure than their predecessors for greater strength and tonal projection, and the method for developing the soundboard crown has been changed to allow the soundboard to vibrate more freely and with greater resonance. The models CF4 and CF6 have an open pinblock design reminiscent of some European pianos, which gives the tuner slightly greater control over the tuning pins. Yamaha says that the CF series represents 19 years of research and development conducted by its craftsmen, designers, and engineers. The Yamaha concert grand is endorsed and used by a number of notable musicians, including Michael Tilson Thomas, Chick Corea, and Elton John.

Other than the special grands just described, historically Yamaha grands have been a little on the percussive side and have been said not to "sing" as well as some more expensive pianos. The tone has been very clear and often bright, especially in the smaller grands, although the excessive brightness that once characterized Yamahas seems to be a thing of the past. The clarity and percussiveness

are very attractive, but are sometimes said to be less well suited for classical music, which tends to require a singing tone and lush harmonic color. On the other hand, Yamaha is the piano of choice for jazz and popular music, which may value clarity and brightness more than the other qualities mentioned. More recently, however, Yamaha has been trying to move away from this image of a "bright" piano whose sound is limited to jazz. First with the larger grands, and more recently with the smaller ones, Yamaha has changed bridge construction and hammer density, and provided more custom voicing at the factory, to bring out a broader spectrum of tonal color in its pianos.

Both Yamaha's quality control and its warranty and technical service are legendary in the piano business. They are the standard against which every other company is measured. For general home and school use, piano technicians probably recommend Yamaha pianos more often than any other brand. Their precision, reliability, and performance make them a very good value for a consumer product.

The Yamaha Servicebond program encourages Yamaha dealers to provide customers with follow-up service during the first six months of ownership by reimbursing the dealers for part of the cost of providing the service. Services for which a dealer can be reimbursed include a tuning and a general maintenance check (tightening screws, among other things). The program is voluntary, however, on the part of the dealer. When negotiating the sale, the customer might wish to inquire as to whether the dealer participates in the program, and if so, to make sure the service is actually provided.

Yamaha now makes a piano under the name Cable-Nelson. It is made in Yamaha's factory in Hangzhou, Zhejiang Province, China, southwest of Shanghai, where the company also makes guitars. The Cable-Nelson 45" model CN116 is identical in musical specifications to Yamaha's former model T116 (no longer available), except that the Cable-Nelson has a laminated soundboard, whereas all Yamaha pianos sold in the U.S. have a solid spruce soundboard. The Cable-Nelson model CN216 is a furniture-style version of the 116.

Cable-Nelson is the name of an old American piano maker whose roots can be traced back to 1903. Yamaha acquired the name when it bought the Everett Piano Company in 1973, and used the name in conjunction with Everett pianos until 1981.

There is a thriving market for used Yamahas. If you're considering buying a used Yamaha, please read "Should I Buy a Used, 'Gray Market' Yamaha or Kawai Piano?" on pages 176–177 of *The Piano Book*, and "**Buying a Used or Restored Piano**" in this publication.

To help its dealers overcome competition from "gray

market” pianos, Yamaha has begun an Heirloom Assurance program that provides a five-year warranty on a used Yamaha piano less than 25 years old purchased from an authorized Yamaha dealer. See a Yamaha dealer for details.

Yamaha also makes electronic player pianos called Disklaviers, as well as a hybrid acoustic/digital instrument called Silent Piano (formerly called MIDI Piano), that account for a substantial percentage of the company’s sales. These products are reviewed separately in the articles “[Buying an Electronic Player-Piano System](#)” and “[Hybrid Pianos](#).”

Warranty: Yamaha and Cable-Nelson—10 years, parts and labor, to original purchaser. Cable-Nelson pianos do not come with the Yamaha Servicebond.

YOUNG CHANG

including Bergmann, Weber, Albert Weber

Young Chang North America, Inc.
19060 South Dominguez Hills Drive
Rancho Dominguez, California 90220
310-637-2000
800-874-2880

www.youngchang.com

Pianos made by: Young Chang Akki Co., Ltd., Incheon, South Korea; and Tianjin, China

In 1956 three brothers—Young-Sup, Chang-Sup, and Jai-Sup Kim—founded Young Chang and began selling Yamaha pianos in Korea under an agreement with that Japanese firm. Korea was recovering from a devastating war, and only the wealthy could afford pianos. But the prospects were bright for economic development, and as a symbol of cultural refinement the piano was much coveted. In 1962 the brothers incorporated as Young Chang Akki Co., Ltd.

In 1964 Yamaha and Young Chang entered into an agreement in which Yamaha helped Young Chang set up a full-fledged manufacturing operation. Yamaha shipped partially completed Yamaha pianos from Japan to the Young Chang factory in Incheon, South Korea, where Young Chang would perform final assembly work such as cabinet assembly, stringing, and action installation. This arrangement reduced high import duties. As time went by, Young Chang built more of the components, to the point where they were making virtually the entire piano. In 1975 the arrangement with Yamaha ended when Young Chang decided to expand domestically and internationally under its own brand name, thus becoming a competitor. Young Chang began exporting to the U.S. in the late 1970s. In addition to making pianos under its own name, it also made pianos for

a time for Baldwin under the Wurlitzer name, for Samsung under the Weber name, and private-label names for large dealer chains and distributors worldwide.

In 1995, in response to rising Korean wages and to supply a growing Chinese domestic market, Young Chang built a 750,000-square-foot factory in Tianjin, China, and gradually began to move manufacturing operations there for some of its models.

In 2004, Young Chang’s Korean rival Samick acquired a controlling interest in the company and began to consolidate the two companies’ administrative and distribution functions in North America. A few months later, however, the Korean Fair Trade Commission ruled that the purchase violated Korean anti-monopoly laws and ordered Samick to sell its interest. Naturally, Samick stopped making payments to creditors on Young Chang’s behalf, forcing Young Chang into bankruptcy. For a couple of years, while these issues wound their way through the courts, there was a question of which of the two companies was entitled to distribute Young Chang pianos in North America, but the courts finally ruled that Young Chang was a separate entity entitled to distribute its own pianos.

Hyundai Development Company purchased Young Chang in 2006 and is in the process of reestablishing Young Chang’s presence in North America. Hyundai Development is a Korean civil-engineering and construction company that helped create Hyundai Motor Company. The company says that Hyundai Development has brought the necessary capital for factory renovations and has instituted new quality-control systems on a par with those in automobile manufacturing. Young Chang also owns Kurzweil Music Systems, a manufacturer of professional keyboards and digital pianos.

In 1995 Young Chang employed the services of Joseph Pramberger, a highly respected piano-design engineer who had spent much of his professional career as an engineer and manufacturing executive at Steinway & Sons, to evaluate its piano designs and make improvements. Two lines of upgraded Young Chang pianos bearing the Pramberger name resulted from this process. After Mr. Pramberger died, in 2003, his estate terminated its relationship with Young Chang and signed up with Samick, which now uses the Pramberger name on a different piano design (see [Samick](#)).

For the past several years, the Young Chang piano line has comprised three levels of quality: Platinum Edition (models beginning with YP) and Professional Artist series (PG), both made in Korea; and Traditional or Gold series (T, AF, GS, or Y), made in China, which at one time bore the name Bergmann, a name no longer used. The Platinum Edition grands have maple rims and

Renner actions, and higher-quality hammer felt, soundboard material, and veneers (on wood-veneer models). The other two series have lauan rims and Young Chang actions. Platinum Edition verticals use slightly better materials than the other verticals for the cabinets, hardware, music wire, and keys, though in general the differences are smaller than with the grands. The difference between the Professional Artist and Traditional series is probably more in design sophistication than material specifications, and perhaps in the somewhat better quality control of Korean manufacturing.


In 2009 Young Chang hired noted American piano designer Del Fandrich to undertake a redesign of the entire Young Chang piano line. Prototypes of the first few models were shown in early 2010. Highlights include all-new cast-iron plate designs, string scales, and soundboard, rib, and bridge systems, with special emphasis on improving freedom of soundboard motion around the bass bridge for better bass tonal response; and a revised hammer-making process, in which the hammers are cold-pressed with less felt compression, for greater resilience and improved tone, with less voicing required. The new designs will be phased in gradually throughout 2010, starting with the Chinese-made models.

Following the demise of the Samsung-owned Weber Piano Company, Young Chang reacquired the Weber name and brought out a line of Weber pianos patterned after existing Young Chang pianos. The Weber Legend series (models beginning with WLE or WLG), now renamed Weber Traditional (W), was exactly the same as the Young Chang Traditional series. The Weber Sovereign series (WSE, WSF, WSG) was the same as the Young Chang Professional Artist series, and the Albert Weber series (AW) was the same as the Young Chang Platinum Edition. Of special note, however, is that Del Fandrich will also be redesigning the Weber piano line, and the Fandrich-redesigned Weber and Young Chang lines will distinctly differ from each other: the Weber line with a low-tension scale, and the greater warmth

and romantic tonal characteristics that often accompany that type of scale; the Young Chang line with a higher-tension scale, and the greater brightness and stronger projection of a more modern sound.

Quality control in Young Chang's Korean factory has improved little by little over the years, and is now nearly as good as that in Japan. Most of the problems currently encountered are minor ones that can be cured by a good dealer make-ready and a little follow-up service, and the pianos hold up well in the field, even in institutions. At one time the tone of Young Chang pianos was bright and sterile, but Joseph Pramberger introduced some tonal color and sustain into the pianos he designed, and the prototypes by Del Fandrich suggest further advances in warmth and musicality. The Platinum Edition and Albert Weber pianos, in particular, have great musical potential and respond well to expert voicing. Pianos from the factory in China, like other pianos from that country, have been uneven in quality, but in recent years have greatly improved. Young Chang says that Hyundai Development has upgraded the factories in both countries, and that the pianos made at the Tianjin factory are now on a par with those made in Korea.

Under contract with Steinway, Young Chang also makes Essex pianos for sale by Steinway dealers. (See [Essex](#) for more information.)

Warranty: New Fandrich-designed models: All Young Chang and Weber pianos—12 years, parts and labor, transferable to future owners (full warranty). *Current models:* Young Chang Platinum Edition and Albert Weber—15 years, parts and labor, transferable to future owners (full warranty). Young Chang Professional Artist series and Weber Sovereign series—15 years, parts and labor, to original owner (limited warranty). Young Chang Gold/Traditional series and Weber Legend series—10 years, parts and labor, to original owner (limited warranty). Parts are further warranted for the lifetime of original owner. 



[*Online Edition readers:* After reading the following introduction, please click below to access the free searchable database of acoustic piano models and prices.]

[Acoustic Piano Database]

This guide contains price information for nearly every brand, model, style, and finish of new piano that has regular distribution in the United States and, for the most part, Canada. Omitted are some marginal, local, or “stencil” brands (brands sold only by a single dealership). Prices are in U.S. dollars and are subject to change. Prices include an allowance for the approximate cost of freight from the U.S. warehouse to the dealer, and for a minimal amount of make-ready by the dealer. The prices cited in this edition were compiled in January 2010.

Note that the prices of European pianos vary with the value of the dollar against the euro. For this edition, the exchange rate used by most manufacturers was approximately €1 = \$1.35–1.45. Prices of European pianos include import duties and estimated costs of airfreight (where applicable) to the dealer. However, actual costs will vary depending on the shipping method used, the port of entry, and other variables. Also keep in mind that the dealer may have purchased the piano at an exchange rate different from the current one.

Unless otherwise indicated, cabinet styles are assumed to be traditional in nature, with minimal embellishment and straight legs. Recognizable furniture styles are noted, and the manufacturer’s own trademarked style name is used when

an appropriate generic name could not be determined. Please see the section on “Furniture Style and Finish” in the article “**Piano-Buying Basics**” for descriptions or definitions of terms relating to style and finish.

“Size” refers to the height of a vertical or the length of a grand. These are the only dimensions that vary significantly and relate to the quality of the instrument. The height of a vertical piano is measured from the floor to the top of the piano. The length of a grand piano is measured from the very front (keyboard end) to the very back (tail end) with the lid closed.

About Prices

The subject of piano pricing is difficult, complicated, and controversial. One of the major problems is that piano dealers tend to prefer that list prices be as high as possible so they can still make a profit while appearing to give very generous discounts. Honesty about pricing is resisted.

But even knowing what is “honest” is a slippery business because many factors can have a dramatic effect on piano pricing. For one thing, different dealerships can pay very different wholesale prices for the same merchandise, depending on:

- the size of the dealership and how many pianos it agrees to

purchase at one time or over a period of time

- whether the dealer pays cash or finances the purchase
- the degree to which the dealer buys manufacturer overstocks at bargain prices
- any special terms the dealership negotiates with the manufacturer or distributor.

In addition to these variations at the wholesale level, retail conditions also vary from dealer to dealer or from one geographic area to another, including:

- the general cost of doing business in the dealer’s area
- the level of pre- and post-sale service the dealer provides
- the level of professionalism of the sales staff and the degree to which they are trained and compensated
- the ease of local comparison shopping by the consumer for a particular type of piano or at a particular price level.

Besides the variations between dealerships, the circumstances of each sale at any particular dealership can vary tremendously due to such things as:

- how long a particular piano has been sitting around unsold, racking up finance charges for the dealer
- the dealer’s financial condition and need for cash at the moment
- competing sales events going on at other dealerships in the area
- whether or not the customer is trading in a used piano.

As difficult as it might be to come up with accurate price information, confusion and ignorance about pricing for such a high-ticket item is intolerable to the consumer, and can cause decision-making paralysis. I strongly believe that a reasonable amount of price information actually greases the wheels of commerce by giving the customer the peace of mind that allows him or her to make a purchase. In this guide I've tried to give a level of information about price that reasonably respects the interests of both buyer and seller, given the range of prices that can exist for any particular model.

Prices include a bench except where noted. (Even where a price doesn't include a bench, the dealer will almost always provide one and quote a price that includes it.) Most dealers will also include delivery and one or two tunings in the home, but these are optional and a matter of agreement between you and the dealer. Prices do not include sales tax.

In this guide, two prices are given for each model: Manufacturer's Suggested Retail Price (MSRP) and Suggested Maximum Price (SMP).

Manufacturer's Suggested Retail Price (MSRP)

The MSRP is a price provided by the manufacturer or distributor and designed as a starting point from which dealers are expected to discount. I include it here for reference purposes—only rarely does a customer pay this price. The MSRP is usually figured as a multiple of the wholesale price, but the specific multiple used differs from company to company. **For that reason, it's fruitless to compare prices of different brands by comparing discounts from the MSRP.** To see why, consider the following scenario:

Manufacturer A sells brand A through its dealer A. The wholesale price to the dealer is \$1,000, but for

the purpose of setting the MSRP, the manufacturer doubles the wholesale price and sets the MSRP at \$2,000. Dealer A offers a 25 percent discount off the MSRP, for a "street price" of \$1,500.

Manufacturer B sells brand B through its dealer B. The wholesale price to the dealer is also \$1,000, but manufacturer B triples the wholesale price and sets the MSRP at \$3,000. Dealer B offers a generous 50 percent discount, for a street price of, again, \$1,500.

Although the street price is the same for both pianos, a customer shopping at both stores and knowing nothing about the wholesale price or how the MSRPs are computed, is likely to come away with the impression that brand B, with a discount of 50 percent off \$3,000, is a more "valuable" piano and a better deal than brand A, with a discount of 25 percent off \$2,000. Other factors aside, which dealer do you think will get the sale? It's important to note that there is nothing about brand B that makes it deserving of a higher MSRP than brand A—how to compute the MSRP is essentially a marketing decision on the part of the manufacturer.

Because of the deceptive manner in which MSRPs are so often used, some manufacturers no longer provide them. In those cases, I've left the MSRP column blank.

Suggested Maximum Price (SMP)

The Suggested Maximum Price (SMP) is a price I've created, based on a profit margin that I've uniformly applied to published wholesale prices. (Where the published wholesale price is believed to be bogus, as is sometimes the case, I've made a reasonable attempt to find out what a typical small dealer actually pays for the piano, and use that price in place of the published one.)

Because in the SMP, unlike in the MSRP, the same profit margin is applied to all brands, the SMP can be used as a "benchmark" price for the purpose of comparing brands and offers. The specific profit margin I've chosen for the SMP is one that dealers often try—but rarely manage—to attain. Also included in the SMP, in most cases, are allowances for duty (where applicable), freight charges, and a minimal amount of make-ready by the dealer. Although the SMP is my creation, it's a reasonable estimate of the **maximum** price you should realistically expect to pay. However, **most sales actually take place at a discount to the SMP**, as discussed below.

Actual Selling or "Street" Price

As you should know by now from reading this publication, most dealers of new pianos are willing—and expect—to negotiate. Only a handful of dealers have non-negotiable prices. For more information on negotiating, please see "**Negotiating Price and Trade-Ins**" in the article "**Piano Buying Basics.**" *The Piano Book* also gives advice about negotiating tactics.

How good a deal you can negotiate will vary, depending on the many factors listed earlier. But in order to make a budget, or to know which pianos are within your budget, or just to feel comfortable enough to actually make a purchase, you need some idea of what is considered normal in the industry. In most cases, discounts from the Suggested Maximum Price range from 10 to 30 percent. For budgeting purposes only, I suggest figuring a discount of about 15 or 20 percent. This will probably bring you within about 10 percent, one way or the other, of the final negotiated price. Important exception: Discounts on Steinway pianos generally range from 0 to 10 percent.

For your convenience in figuring the effects of various discounts, a discount calculator is included in the model and price database, accessible through the electronic edition of this publication.

There is no single “fair” or “right” price that can be applied to every purchase. The only fair price is that which the buyer and seller agree on. It’s understandable that you would

like to pay as little as possible, but remember that piano shopping is not just about chasing the lowest price. Be sure you are getting the instrument that best suits your needs and preferences, and that the dealer is committed to providing the appropriate level of pre- and post-sale service.

For more information about shopping for a new piano and how to

save money, please see pages 60–75 in *The Piano Book, Fourth Edition*.

[*Online Edition readers:* Click below to access the free searchable database of acoustic piano models and prices.]

[\[Acoustic Piano Database\]](#)

Model	Feet	Inches	Description	MSRP*	SMP*
ALTENBURG					
Verticals					
AV108	42.5		Continental Polished Ebony	5,000	3,690
AV108	42.5		Continental Polished Cherry/Mahogany	5,075	3,750
AV110	43		Classic Polished Ebony	5,500	4,090
AV110	43		Classic Polished Cherry/Mahogany	5,575	4,150
AV110	43		American Country Oak/Sable Brown Mahogany	6,300	4,690
AV110	43		French Provincial Cherry/Country French Oak	6,425	4,790
AV115	45		Polished Ebony	5,763	4,290
AV115	45		Polished Cherry/Mahogany	5,735	4,350
AV118	46		Institutional Polished Ebony	6,576	4,890
AV118	46		Institutional Satin Walnut	6,635	5,190
AV120	48		Polished Ebony	6,300	4,890
AV120	48		Polished Mahogany	6,375	4,950
AV132	52		Classic Polished Ebony	7,750	5,990
Grands					
AG145	4	9	Polished Ebony	11,563	8,790
AG145	4	9	Polished Mahogany/Cherry/White	12,088	9,190
AG160	5	3	Polished Ebony	13,975	10,780
AG160	5	3	Polished Mahogany/Cherry/White	14,475	11,180
AG170	5	7	Polished Ebony	15,550	11,990
AG170	5	7	Polished Mahogany/Cherry/White	16,075	12,390
AG185	6	1	Polished Ebony	18,188	13,790
AG185	6	1	Polished Mahogany/Cherry/White	18,725	14,190
			With Round or Curved Legs, add'l	1,000	
			Satin Ebony/Mahogany/Cherry, add'l	800	
ASTIN-WEIGHT					
Verticals					
U-500	50		Oiled Oak	17,180	16,180
U-500	50		Santa Fe Oiled Oak	18,580	17,580
U-500	50		Lacquer Oak	17,580	16,580
U-500	50		Oiled Walnut	17,780	16,780
U-500	50		Lacquer Walnut	18,180	17,180
Grands					
	5	9	Satin Ebony	39,500	38,500

*See pricing explanation on page 213.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
BALDWIN					
Verticals					
B242	42		Polished Ebony	5,985	4,990
B242	42		Satin Cherry/Walnut	5,985	4,990
B242E	42		Polished Ebony Euro Style	5,985	4,990
B342	43		Designer French Satin Cherry	6,585	5,390
B442	43		Designer Satin Mahogany	6,585	5,390
BH110	43		Satin Mahogany/Cherry	2,933	2,933
BH112	44		Continental Polished Ebony/Mahogany	3,036	3,024
BH115	45		Satin Mahogany/Walnut	3,174	3,116
B243	47		Satin Ebony/Walnut (school piano)	7,185	5,390
B247	47		Satin and Polished Ebony	7,185	5,790
B247	47		Satin and Polished Walnut	7,185	5,790
B247E	47		Polished Ebony	7,185	5,790
BH121	48		Polished Ebony/Mahogany	3,278	3,185
B252	52		Satin Ebony	8,985	6,990
B252E	52		Polished Ebony Euro Style	8,985	6,990
China Grands					
BH146	4	8	Satin and Polished Ebony	8,985	6,990
BH146	4	8	Polished Mahogany/White	8,985	6,990
BH152	5		Satin and Polished Ebony	9,885	7,590
BH152	5		Polished Mahogany/White	9,885	7,590
BH165	5	5	Satin and Polished Ebony	10,785	8,190
BH165	5	5	Polished Mahogany/White	10,785	8,190
BH185	6	1	Satin and Polished Ebony	11,985	8,990
BH185	6	1	Polished Mahogany/White	11,985	8,990
BH215	7		Polished Ebony	24,285	17,190
BH215	7		Polished White	25,785	18,190
BH275	9		Polished Ebony/White	89,985	60,990
U.S. Grands					
M1	5	2	Satin Ebony	43,800	30,200
M1	5	2	Polished Ebony	44,100	30,400
M1	5	2	Satin and Polished Mahogany	44,700	30,800
225E	5	2	French Provincial Satin Cherry	43,500	30,000
R1	5	8	Satin Ebony	45,600	31,400
R1	5	8	Polished Ebony	48,300	33,200
R1	5	8	Satin Mahogany	48,600	33,400
R1	5	8	Satin Walnut	45,450	31,300
R1	5	8	Polished Walnut	48,750	33,500
226E	5	8	French Provincial Satin Cherry	49,500	34,000
226E	5	8	French Provincial Polished Cherry	53,400	36,600
L1	6	3	Satin Ebony	48,480	33,320
L1	6	3	Polished Ebony	50,700	34,800
L1	6	3	Satin Mahogany	47,190	32,460
L1	6	3	Satin Walnut	47,640	32,760
SF10E	7		Satin Ebony	67,584	46,056
SF10E	7		Polished Ebony	76,500	52,000

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
BECHSTEIN, (C.)					
Models beginning with "A" say only "Bechstein" on the fallboard. Others say "C. Bechstein.					
Bechstein Verticals					
A112		44	Satin and Polished Ebony	18,100	16,833
A3		45.5	Polished Ebony	18,700	17,391
A3		45.5	Satin Mahogany/Walnut/Cherry	18,700	17,391
A3		45.5	Polished Mahogany/Walnut/Cherry/White	19,900	18,507
A3		45.5	Satin Alder/Beech	18,700	17,391
A2		47.5	Polished Ebony	19,900	18,507
A2		47.5	Satin Mahogany/Walnut/Cherry	19,900	18,507
A2		47.5	Polished Mahogany/Walnut/Cherry/White	21,200	19,716
A2		47.5	Satin Alder	19,900	18,507
A1		49.5	Polished Ebony	21,200	19,716
A1		49.5	Satin Mahogany/Walnut/Cherry	21,200	19,716
A1		49.5	Polished Mahogany/Walnut/Cherry/White	23,000	21,390
C. Bechstein Verticals					
M116		45.5	Polished Ebony	22,800	21,204
M116K		45.5	Polished Ebony	23,400	21,762
Classic 124		49	Polished Ebony	35,000	32,550
Classic 124		49	Satin Walnut/Mahogany/Cherry	35,000	32,550
Classic 124		49	Polished Walnut/Mahogany/Cherry	36,600	34,038
Elegance 124		49	Polished Ebony	37,400	34,782
Elegance 124		49	Satin Walnut/Cherry	37,400	34,782
Elegance 124		49	Polished Walnut/Mahogany/Cherry	41,600	38,688
Concert 8		51.5	Polished Ebony	52,800	49,104
Concert 8		51.5	Satin Walnut/Mahogany/Cherry	52,800	49,104
Concert 8		51.5	Polished Walnut/Mahogany	55,000	51,150
Concert 8		51.5	Special Woods	62,400	58,032
Bechstein Grands					
A160	5	3	Polished Ebony	51,400	47,802
A160	5	3	Polished Mahogany	54,800	50,964
A160	5	3	Polished White	58,200	54,126
A160	5	3	Special Woods	69,600	64,728
A190	6	3	Polished Ebony	61,400	57,102
A190	6	3	Polished Mahogany	64,800	60,264
A190	6	3	Polished White	64,800	60,264
A190	6	3	Special Woods	79,600	74,028
A208	6	8	Polished Ebony	65,800	61,194
A208	6	8	Polished Mahogany	69,000	64,170
A208	6	8	Polished White	72,000	66,960
A228	7	5	Polished Ebony	75,400	70,122
C. Bechstein Grands					
L167	5	6	Satin and Polished Ebony	93,600	87,048
L167	5	6	Satin Mahogany/Walnut/Cherry	93,600	87,048
L167	5	6	Polished Mahogany/Walnut/Cherry/White	100,000	93,000
L167	5	6	Special Woods	112,800	104,904
MP192	6	4	Satin and Polished Ebony	108,600	100,998
MP192	6	4	Satin Mahogany/Walnut/Cherry	108,600	100,998
MP192	6	4	Polished Mahogany/Walnut/Cherry/White	115,000	106,950
MP192	6	4	Special Woods	127,600	118,668
L, MP			Classic style, add'l	16,600	15,438
L, MP			Chippendale, add'l	15,300	14,229
B212	7		Satin and Polished Ebony	130,000	120,900
C234	7	7	Polished Ebony	163,000	151,590
B, C			Classic style, add'l	18,800	17,484
D282	9	2	Polished Ebony	212,600	197,718

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
BLÜTHNER					
Prices do not include bench.					
Verticals					
I		45	Satin and Polished Ebony	26,690	24,822
I		45	Satin and Polished Walnut	28,106	26,139
I		45	Satin and Polished Mahogany	27,958	26,001
I		45	Satin and Polished Cherry	27,958	26,001
I		45	Satin and Polished White	28,106	26,139
C		46	Satin and Polished Ebony	28,222	26,246
C		46	Satin and Polished Walnut	29,854	27,764
C		46	Satin and Polished Mahogany	29,566	27,496
C		46	Satin and Polished Cherry	29,714	27,634
C		46	Satin and Polished White	29,854	27,764
C		46	Satin and Polished Bubinga/Yew/Rosewood/Macassar	31,510	29,304
C		46	Saxony Polished Pyramid Mahogany	37,238	34,631
C		46	Polished Burl Walnut/Camphor	37,594	34,962
A		49	Satin and Polished Ebony	35,948	33,432
A		49	Satin and Polished Walnut	38,020	35,359
A		49	Satin and Polished Mahogany	37,662	35,026
A		49	Satin and Polished Cherry	37,846	35,197
A		49	Satin and Polished White	38,020	35,359
A		49	Satin and Polished Bubinga/Yew/Rosewood/Macassar	40,124	37,315
A		49	Saxony Polished Pyramid Mahogany	47,426	44,106
A		49	Polished Burl Walnut/Camphor	47,886	44,534
B		52	Satin and Polished Ebony	41,044	38,171
B		52	Satin and Polished Walnut	43,412	40,373
B		52	Satin and Polished Mahogany	43,008	39,997
B		52	Satin and Polished Cherry	43,206	40,182
B		52	Satin and Polished White	43,412	40,373
B		52	Satin and Polished Bubinga/Yew/Rosewood/Macassar	45,816	42,609
B		52	Saxony Polished Pyramid Mahogany	54,154	50,363
B		52	Polished Burl Walnut/Camphor	54,670	50,843
			Sostenuto pedal on vertical piano, add'l	2,784	2,589
Grands					
11	5	1	Satin and Polished Ebony	72,784	67,689
11	5	1	Satin and Polished Walnut	76,992	71,603
11	5	1	Satin and Polished Mahogany	76,256	70,918
11	5	1	Satin and Polished Cherry	76,626	71,262
11	5	1	Satin and Polished White	76,992	71,603
11	5	1	Satin and Polished Bubinga/Yew/Rosewood/Macassar	81,258	75,570
11	5	1	Saxony Polished Pyramid Mahogany	96,026	89,304
11	5	1	Polished Burl Walnut/Camphor	96,956	90,169
11	5	1	"President" Polished Ebony	81,258	75,570
11	5	1	"President" Polished Mahogany	84,514	78,598
11	5	1	"President" Polished Walnut	85,318	79,346
11	5	1	"President" Polished Bubinga	86,170	80,138
11	5	1	Louis XVI Satin and Polished Ebony	84,950	79,004
11	5	1	Louis XVI Satin and Polished Mahogany	89,194	82,950
11	5	1	Louis XVI Satin and Polished Walnut	88,342	82,158
11	5	1	"Kaiser Wilhelm II" Polished Ebony	85,686	79,688
11	5	1	"Kaiser Wilhelm II" Polished Mahogany	89,114	82,876
11	5	1	"Kaiser Wilhelm II" Polished Walnut	89,976	83,678
11	5	1	"Kaiser Wilhelm II" Polished Cherry	89,540	83,272
11	5	1	"Ambassador" Satin East Indian Rosewood	99,728	92,747
11	5	1	"Ambassador" Satin Walnut	92,334	85,871
11	5	1	"Nicholas II" Satin Walnut with Burl Inlay	99,728	92,747
11	5	1	Louis XIV Rococo Satin White with Gold	107,120	99,622
11	5	1	"Alexandra" Polished Ebony	82,730	76,939

*See pricing explanation on page 213.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
BLÜTHNER (continued)					
11	5	1	"Alexandra" Polished Mahogany	86,870	80,789
11	5	1	"Alexandra" Polished Walnut	86,042	80,019
11	5	1	Julius Blüthner Edition	99,728	92,747
10	5	5	Satin and Polished Ebony	83,904	78,031
10	5	5	Satin and Polished Walnut	88,756	82,543
10	5	5	Satin and Polished Mahogany	87,906	81,753
10	5	5	Satin and Polished Cherry	88,332	82,149
10	5	5	Satin and Polished White	88,756	82,543
10	5	5	Satin and Polished Bubinga/Yew/Rosewood/Macassar	93,668	87,111
10	5	5	Saxony Polished Pyramid Mahogany	110,698	102,949
10	5	5	Polished Burl Walnut/Camphor	111,768	103,944
10	5	5	"President" Polished Ebony	93,666	87,109
10	5	5	"President" Polished Mahogany	97,416	90,597
10	5	5	"President" Polished Walnut	98,360	91,475
10	5	5	"President" Polished Bubinga	103,040	95,827
10	5	5	"Senator" French Satin Walnut with Leather	102,190	95,037
10	5	5	"Senator" Jacaranda Satin Rosewood w/Leather	109,006	101,376
10	5	5	Louis XVI Satin and Polished Ebony	97,934	91,079
10	5	5	Louis XVI Satin and Polished Mahogany	102,822	95,624
10	5	5	Louis XVI Satin and Polished Walnut	101,844	94,715
10	5	5	"Kaiser Wilhelm II" Polished Ebony	98,784	91,869
10	5	5	"Kaiser Wilhelm II" Polished Mahogany	102,730	95,539
10	5	5	"Kaiser Wilhelm II" Polished Walnut	103,720	96,460
10	5	5	"Kaiser Wilhelm II" Polished Cherry	103,224	95,998
10	5	5	"Ambassador" Satin East Indian Rosewood	114,964	106,917
10	5	5	"Ambassador" Satin Walnut	106,444	98,993
10	5	5	"Nicholas II" Satin Walnut with Burl Inlay	114,964	106,917
10	5	5	Louis XIV Rococo Satin White with Gold	123,476	114,833
10	5	5	"Alexandra" Polished Ebony	95,370	88,694
10	5	5	"Alexandra" Polished Mahogany	100,142	93,132
10	5	5	"Alexandra" Polished Walnut	99,186	92,243
10	5	5	Julius Blüthner Edition	99,728	92,747
6	6	3	Satin and Polished Ebony	91,506	85,101
6	6	3	Satin and Polished Walnut	96,806	90,030
6	6	3	Satin and Polished Mahogany	95,888	89,176
6	6	3	Satin and Polished Cherry	96,346	89,602
6	6	3	Satin and Polished White	96,806	90,030
6	6	3	Satin and Polished Bubinga/Yew/Rosewood/Macassar	102,166	95,014
6	6	3	Saxony Polished Pyramid Mahogany	120,738	112,286
6	6	3	Polished Burl Walnut/Camphor	121,900	113,367
6	6	3	"President" Polished Ebony	102,166	95,014
6	6	3	"President" Polished Mahogany	106,250	98,813
6	6	3	"President" Polished Walnut	107,272	99,763
6	6	3	"President" Polished Bubinga	112,378	104,512
6	6	3	"Senator" French Satin Walnut with Leather	111,446	103,645
6	6	3	"Senator" Jacaranda Satin Rosewood w/Leather	118,886	110,564
6	6	3	Louis XVI Satin and Polished Ebony	106,810	99,333
6	6	3	Louis XVI Satin and Polished Mahogany	112,150	104,300
6	6	3	Louis XVI Satin and Polished Walnut	111,080	103,304
6	6	3	"Kaiser Wilhelm II" Polished Ebony	107,744	100,202
6	6	3	"Kaiser Wilhelm II" Polished Mahogany	112,044	104,201
6	6	3	"Kaiser Wilhelm II" Polished Walnut	113,124	105,205
6	6	3	"Kaiser Wilhelm II" Polished Cherry	112,584	104,703
6	6	3	"Ambassador" Satin East Indian Rosewood	125,384	116,607
6	6	3	"Ambassador" Satin Walnut	116,094	107,967
6	6	3	"Nicholas II" Satin Walnut with Burl Inlay	125,384	116,607
6	6	3	Louis XIV Rococo Satin White with Gold	134,678	125,251
6	6	3	"Alexandra" Polished Ebony	104,018	96,737

*See pricing explanation on page 213.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
BLÜTHNER (continued)					
6	6	3	"Alexandra" Polished Mahogany	109,226	101,580
6	6	3	"Alexandra" Polished Walnut	108,180	100,607
6	6	3	Julius Blüthner Edition	125,384	116,607
6	6	3	Jubilee Edition Plate, add'l	6,234	5,798
6	6	3	"Kaiser Wilhelm II" Polished Mahogany	112,044	104,201
6	6	3	"Kaiser Wilhelm II" Polished Walnut	113,124	105,205
6	6	3	"Kaiser Wilhelm II" Polished Cherry	112,584	104,703
6	6	3	"Ambassador" Satin East Indian Rosewood	125,384	116,607
6	6	3	"Ambassador" Satin Walnut	116,094	107,967
6	6	3	"Nicholas II" Satin Walnut with Burl Inlay	125,384	116,607
6	6	3	Louis XIV Rococo Satin White with Gold	134,678	125,251
6	6	3	"Alexandra" Polished Ebony	104,018	96,737
4	6	10	Satin and Polished Ebony	108,538	100,940
4	6	10	Satin and Polished Walnut	114,816	106,779
4	6	10	Satin and Polished Mahogany	113,722	105,761
4	6	10	Satin and Polished Cherry	114,264	106,266
4	6	10	Satin and Polished White	114,816	106,779
4	6	10	Satin and Polished Bubinga/Yew/Rosewood/Macassar	121,174	112,692
4	6	10	Saxony Polished Pyramid Mahogany	143,198	133,174
4	6	10	Polished Burl Walnut/Camphor	144,590	134,469
4	6	10	"President" Polished Ebony	121,174	112,692
4	6	10	"President" Polished Mahogany	126,016	117,195
4	6	10	"President" Polished Walnut	127,236	118,329
4	6	10	"President" Polished Bubinga	133,286	123,956
4	6	10	"Kaiser Wilhelm II" Polished Ebony	127,778	118,834
4	6	10	"Kaiser Wilhelm II" Polished Mahogany	132,894	123,591
4	6	10	"Kaiser Wilhelm II" Polished Walnut	134,170	124,778
4	6	10	"Kaiser Wilhelm II" Polished Cherry	133,538	124,190
4	6	10	"Ambassador" Satin East Indian Rosewood	148,706	138,297
4	6	10	"Ambassador" Satin Walnut	137,700	128,061
4	6	10	"Alexandra" Polished Ebony	123,374	114,738
4	6	10	"Alexandra" Polished Mahogany	129,548	120,480
4	6	10	"Alexandra" Polished Walnut	128,306	119,325
4	6	10	Julius Blüthner Edition	148,706	138,297
2	7	8	Satin and Polished Ebony	121,302	112,811
2	7	8	Satin and Polished Walnut	128,328	119,345
2	7	8	Satin and Polished Mahogany	127,098	118,201
2	7	8	Satin and Polished Cherry	127,720	118,780
2	7	8	Satin and Polished White	128,328	119,345
2	7	8	Satin and Polished Bubinga/Yew/Rosewood/Macassar	135,424	125,944
2	7	8	Saxony Polished Pyramid Mahogany	160,058	148,854
2	7	8	Polished Burl Walnut/Camphor	161,598	150,286
2	7	8	"President" Polished Ebony	135,424	125,944
2	7	8	"President" Polished Mahogany	140,852	130,992
2	7	8	"President" Polished Walnut	142,210	132,255
2	7	8	"President" Polished Bubinga	148,972	138,544
2	7	8	"Kaiser Wilhelm II" Polished Ebony	142,818	132,821
2	7	8	"Kaiser Wilhelm II" Polished Mahogany	148,534	138,137
2	7	8	"Kaiser Wilhelm II" Polished Walnut	149,960	139,463
2	7	8	"Kaiser Wilhelm II" Polished Cherry	149,246	138,799
2	7	8	"Ambassador" Satin East Indian Rosewood	166,210	154,575
2	7	8	"Ambassador" Satin Walnut	153,894	143,121
2	7	8	Julius Blüthner Edition	166,210	154,575
2	7	8	"Queen Victoria" JB Edition Polished Rosewood	191,934	178,499
1	9	2	Satin and Polished Ebony	156,434	145,484
1	9	2	Satin and Polished Walnut	165,486	153,902
1	9	2	Satin and Polished Mahogany	163,910	152,436
1	9	2	Satin and Polished Cherry	164,714	153,184

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
BLÜTHNER (continued)					
1	9	2	Satin and Polished White	165,486	153,902
1	9	2	"President" Polished Ebony	174,638	162,413
1	9	2	"President" Polished Mahogany	181,644	168,929
1	9	2	"President" Polished Walnut	183,368	170,532
1	9	2	"President" Polished Bubinga	192,106	178,659
1	9	2	Julius Blüthner Edition	198,294	184,413
1	9	2	"Queen Victoria" JB Edition Polished Rosewood	224,468	208,755

BOHEMIA

Adjustable Artist Bench included with all pianos.

Verticals

122A	48		Demi-Chippendale Satin and Polished Ebony	11,660
122A	48		Demi-Chippendale Satin and Polished Walnut/Mahogany	12,700
122A	48		Demi-Chippendale Polished Pomele	13,880
122A	48		Chippendale Satin and Polished Walnut/Mahogany	13,820
122A	48		"Romance" Polished Ebony with Mahogany Oval	13,140
123A	48		"Exclusive" Satin and Polished Ebony	11,120
123A	48		"Exclusive" Open-pore Walnut/Mahogany/Cherry	11,520
123A	48		"Exclusive" Satin and Polished Walnut/Mahogany	12,140
123A	48		"Exclusive" Polished Pomele	13,260
123A	48		"Exclusive" Polished White	12,140
122A-123A	48		With Bohemia/Renner Action, add'l	1,100
122A-123A	48		With Full Renner Action, add'l	2,100
125A	49		"Professional" Satin and Polished Ebony	12,440
125A	49		"Professional" Open-pore Walnut/Mahogany/Cherry	12,840
125A	49		"Professional" Satin and Polished Walnut/Mahogany	13,580
125A	49		"Professional" Polished Pomele	14,840
125A	49		"Professional" Polished White	13,580
125A-BR	49		125A with Bohemia/Renner Action, add'l	1,200
132	52		"Concerto" Satin and Polished Ebony	14,080
132	52		"Concerto" Polished Mahogany	15,380
132BR	52		132 with Bohemia/Renner Action, add'l	1,400

Grands

156A-B	5	2	"Martinu" Satin and Polished Ebony	33,580
156A-B	5	2	"Martinu" Satin and Polished Walnut/Mahogany	36,840
156A-B	5	2	"Martinu" Hand-Rubbed Satin Ebony/Walnut/Mahogany	38,840
156A-B	5	2	"Martinu" Polished Pomele	38,800
156A-B	5	2	"Martinu" Polished White	36,840
156A-B	5	2	Demi-Chip. Satin and Polished Walnut/Mahogany	40,420
156A-B	5	2	Chippendale Satin and Polished Walnut/Mahogany	42,220
173-B	5	8	"Mahler" Satin and Polished Ebony	36,760
173-B	5	8	"Mahler" Satin and Polished Walnut/Mahogany	40,340
173-B	5	8	"Mahler" Hand-Rubbed Satin Ebony/Walnut/Mahogany	42,340
173-B	5	8	Demi-Chippendale Satin and Polished Walnut/Mahogany	44,280
173-B	5	8	Chippendale Satin and Polished Walnut/Mahogany	46,240
185A-B	6	1	"Janacek" Satin and Polished Ebony	39,940
185A-B	6	1	"Janacek" Satin and Polished Walnut/Mahogany	43,840
185A-B	6	1	"Janacek" Hand-Rubbed Satin Ebony/Walnut/Mahogany	47,480
185A-B	6	1	"Janacek" Polished White	43,840
185AE-B	6	1	Empire Satin and Polished Ebony	43,900
156, 173, 185			With Bohemia/Renner Action, add'l	2,000
185AE-B	6	1	Empire Satin and Polished Walnut/Mahogany	48,180
225R	7	4	"Smetana" Satin and Polished Ebony (Renner action)	59,660
272R	8	11	"Dvorak" Satin and Polished Ebony (Renner action)	100,800

*See pricing explanation on page 213.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
BÖSENDORFER					
Verticals					
130		52	Satin and Polished Ebony	55,184	49,666
130		52	Satin and Polished White, other colors	59,882	53,894
130		52	Polished, Satin, Open-pore: Walnut, Cherry, Mahogany, Pomele, Bubinga, Wenge	61,292	55,163
130		52	Polished, Satin, Open-pore: Pyramid Mahogany, Amboyna, Rio Rosewood, Burl Walnut, Birdseye Maple, Yew, Macassar	64,078	57,670
Grands					
170CS	5	8	“Conservatory” Satin Ebony	83,470	75,123
170	5	8	Satin and Polished Ebony	96,337	86,723
170	5	8	Satin and Polished White, other colors	104,538	94,084
170	5	8	Polished, Satin, Open-pore: Walnut, Cherry, Mahogany, Pomele, Bubinga, Wenge	106,999	96,299
170	5	8	Polished, Satin, Open-pore: Pyramid Mahogany, Amboyna, Rio Rosewood, Burl Walnut, Birdseye Maple, Yew, Macassar	111,863	100,677
170	5	8	“Johann Strauss” Satin and Polished Ebony	106,162	95,546
170	5	8	“Johann Strauss,” other finish	125,803	113,223
170	5	8	“Franz Schubert” Satin and Polished Ebony	106,162	95,546
170	5	8	“Franz Schubert,” other finish	125,803	113,223
170	5	8	“Vienna”	156,523	140,871
170	5	8	“Senator”	117,849	106,064
170	5	8	“Chopin”	143,664	129,298
170	5	8	“Liszt”	125,803	113,223
170	5	8	“Yacht”	129,634	116,671
170	5	8	“Artisan,” Satin and Polished	181,683	163,515
170	5	8	“Edge”	104,966	94,469
170	5	8	“Baroque”	133,214	119,893
170	5	8	Louis XVI	133,214	119,893
185	6	1	“Conservatory” Satin Ebony	84,780	76,302
185	6	1	Satin and Polished Ebony	98,797	88,917
185	6	1	Satin and Polished White, other colors	107,208	96,487
185	6	1	Polished, Satin, Open-pore: Walnut, Cherry, Mahogany, Pomele, Bubinga, Wenge	109,732	98,759
185	6	1	Polished, Satin, Open-pore: Pyramid Mahogany, Amboyna, Rio Rosewood, Burl Walnut, Birdseye Maple, Yew, Macassar	114,720	103,248
185	6	1	“Johann Strauss” Satin and Polished Ebony	108,873	97,986
185	6	1	“Johann Strauss,” other finish	129,016	116,114
185	6	1	“Franz Schubert” Satin and Polished Ebony	108,873	97,986
185	6	1	“Franz Schubert,” other finish	129,016	116,114
185	6	1	“Vienna”	156,538	140,884
185	6	1	“Senator”	120,858	108,772
185	6	1	“Chopin”	147,102	132,392
185	6	1	“Porsche Design,” Satin and Polished Ebony	148,270	133,443
185	6	1	“Porsche Design,” Polished Colors	158,524	142,672
185	6	1	“Liszt”	129,016	116,114
185	6	1	“Yacht”	132,944	119,647
185	6	1	“Artisan,” Satin and Polished	186,323	167,691
185	6	1	“Edge”	107,647	96,882
185	6	1	“Baroque”	136,616	122,954
185	6	1	Louis XVI	136,616	122,954
200CS	6	7	“Conservatory” Satin Ebony	89,049	80,144
200	6	7	Satin and Polished Ebony	108,960	98,064
200	6	7	Satin and Polished White, other colors	118,237	106,413
200	6	7	Polished, Satin, Open-pore: Walnut, Cherry, Mahogany, Pomele, Bubinga, Wenge	121,020	108,918
200	6	7	Polished, Satin, Open-pore: Pyramid Mahogany, Amboyna, Rio Rosewood, Burl Walnut, Birdseye Maple, Yew, Macassar	126,521	113,869

*See pricing explanation on page 213.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
BÖSENDORFER (continued)					
200	6	7	"Johann Strauss" Satin and Polished Ebony	120,073	108,066
200	6	7	"Johann Strauss," other finish	142,288	128,059
200	6	7	"Franz Schubert" Satin and Polished Ebony	120,073	108,066
200	6	7	"Franz Schubert," other finish	142,288	128,059
200	6	7	"Vienna"	162,784	146,506
200	6	7	"Senator"	133,291	119,962
200	6	7	"Chopin"	159,627	143,664
200	6	7	"Liszt"	142,288	128,059
200	6	7	"Yacht"	146,620	131,958
200	6	7	"Artisan," Satin and Polished	205,491	184,942
200	6	7	"Edge"	118,721	106,849
200	6	7	"Baroque"	150,670	135,603
200	6	7	Louis XVI	150,670	135,603
214CS	7		"Conservatory" Satin Ebony	97,102	87,392
214	7		Satin and Polished Ebony	128,156	115,340
214	7		Satin and Polished White, other colors	137,729	123,956
214	7		Polished, Satin, Open-pore: Walnut, Cherry, Mahogany, Pomele, Bubinga, Wenge	140,971	126,874
214	7		Polished, Satin, Open-pore: Pyramid Mahogany, Amboyna, Rio Rosewood, Burl Walnut, Birdseye Maple, Yew, Macassar	147,379	132,641
214	7		"Johann Strauss" Satin and Polished Ebony	139,868	125,881
214	7		"Johann Strauss," other finish	165,746	149,171
214	7		"Franz Schubert" Satin and Polished Ebony	139,868	125,881
214	7		"Franz Schubert," other finish	165,746	149,171
214	7		"Vienna"	182,437	164,193
214	7		"Senator"	155,266	139,739
214	7		"Chopin"	181,014	162,913
214	7		"Porsche Design," Satin and Polished Ebony	181,143	163,029
214	7		"Porsche Design," Polished Colors	190,200	171,180
214	7		"Liszt"	165,746	149,171
214	7		"Yacht"	170,792	153,713
214	7		"Artisan," Satin and Polished	239,368	215,431
214	7		"Edge"	138,293	124,464
214	7		"Baroque"	175,509	157,958
214	7		Louis XVI	175,509	157,958
225	7	4	Satin and Polished Ebony	134,361	120,925
225	7	4	Satin and Polished White, other colors	144,397	129,957
225	7	4	Polished, Satin, Open-pore: Walnut, Cherry, Mahogany, Pomele, Bubinga, Wenge	147,797	133,017
225	7	4	Polished, Satin, Open-pore: Pyramid Mahogany, Amboyna, Rio Rosewood, Burl Walnut, Birdseye Maple, Yew, Macassar	154,515	139,064
225	7	4	"Johann Strauss" Satin and Polished Ebony	146,640	131,976
225	7	4	"Johann Strauss," other finish	173,771	156,394
225	7	4	"Franz Schubert" Satin and Polished Ebony	146,640	131,976
225	7	4	"Franz Schubert," other finish	173,771	156,394
225	7	4	"Vienna"	191,270	172,143
225	7	4	"Senator"	162,783	146,505
225	7	4	"Chopin"	189,778	170,800
225	7	4	"Liszt"	173,771	156,394
225	7	4	"Yacht"	179,061	161,155
225	7	4	"Artisan," Satin and Polished	250,957	225,861
225	7	4	"Edge"	144,989	130,490
225	7	4	"Baroque"	184,007	165,606
225	7	4	Louis XVI	184,007	165,606
280	9	2	Satin and Polished Ebony	174,215	156,794
280	9	2	Satin and Polished White, other colors	187,229	168,506
280	9	2	Polished, Satin, Open-pore: Walnut, Cherry, Mahogany, Pomele, Bubinga, Wenge	191,637	172,473

*See pricing explanation on page 213.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
BÖSENDORFER (continued)					
280	9	2	Polished, Satin, Open-pore: Pyramid Mahogany, Amboyna, Rio Rosewood, Burl Walnut, Birdseye Maple, Yew, Macassar	200,348	180,313
280	9	2	“Johann Strauss” Satin and Polished Ebony	190,138	171,124
280	9	2	“Johann Strauss,” other finish	225,316	202,784
280	9	2	“Franz Schubert” Satin and Polished Ebony	190,138	171,124
280	9	2	“Franz Schubert,” other finish	225,316	202,784
280	9	2	“Vienna”	248,006	223,205
280	9	2	“Senator”	211,069	189,962
280	9	2	“Chopin”	246,071	221,464
280	9	2	“Porsche Design,” Satin and Polished	246,247	221,622
280	9	2	“Porsche Design,” Polished Colors	258,559	232,703
280	9	2	“Liszt”	225,316	202,784
280	9	2	“Yacht”	232,175	208,958
280	9	2	“Artisan,” Satin and Polished	278,913	251,022
280	9	2	“Baroque”	238,588	214,729
280	9	2	Louis XVI	238,588	214,729
280	9	2	Polished, Satin, Open-pore: Pyramid Mahogany, Amboyna, Rio Rosewood, Burl Walnut, Birdseye Maple, Yew, Macassar	200,348	180,313
280	9	2	“Johann Strauss” Satin and Polished Ebony	190,138	171,124
280	9	2	“Johann Strauss,” other finish	225,316	202,784
280	9	2	“Franz Schubert” Satin and Polished Ebony	190,138	171,124
280	9	2	“Franz Schubert,” other finish	225,316	202,784
280	9	2	“Vienna”	248,006	223,205
280	9	2	“Senator”	211,069	189,962
280	9	2	“Chopin”	246,071	221,464
280	9	2	“Porsche Design,” Satin and Polished	246,247	221,622
290	9	6	Satin and Polished Ebony	198,080	178,272
290	9	6	Satin and Polished White, other colors	212,877	191,589
290	9	6	Polished, Satin, Open-pore: Walnut, Cherry, Mahogany, Pomele, Bubinga, Wenge	217,888	196,099
290	9	6	Polished, Satin, Open-pore: Pyramid Mahogany, Amboyna, Rio Rosewood, Burl Walnut, Birdseye Maple, Yew, Macassar	227,793	205,014
290	9	6	“Johann Strauss” Satin and Polished Ebony	216,184	194,566
290	9	6	“Johann Strauss,” other finish	256,181	230,563
290	9	6	“Franz Schubert” Satin and Polished Ebony	216,184	194,566
290	9	6	“Franz Schubert,” other finish	256,181	230,563
290	9	6	“Vienna”	281,979	253,781
290	9	6	“Senator”	239,982	215,984
290	9	6	“Chopin”	279,779	251,801
290	9	6	“Liszt”	256,181	230,563
290	9	6	“Yacht”	263,980	237,582
290	9	6	“Artisan,” Satin and Polished	294,539	265,085
290	9	6	“Baroque”	271,271	244,144
290	9	6	Louis XVI	271,271	244,144
170-280			“CEUS” Computer Grand, add'l	65,773	59,196
290			“CEUS” Computer Grand, add'l	72,500	65,250

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
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BOSTON

Boston MSRP is the price at the New York retail store.

Verticals

UP-118E PE	46		Satin and Polished Ebony	10,600	10,600
UP-118E PE	46		Polished Mahogany	12,400	12,400
UP-118E PE	46		Satin and Polished Walnut	12,400	12,400
UP-118S PE	46		Satin Honey Oak/Black Oak	6,700	6,700
UP-118S PE	46		Satin Mahogany	8,200	8,200
UP-126E PE	50		Polished Ebony	12,900	12,900
UP-126E PE	50		Polished Mahogany	14,800	14,800
UP-132E PE	52		Polished Ebony	14,200	14,200

Grands

GP-156 PE	5	1	Satin and Polished Ebony	19,400	19,400
GP-163 PE	5	4	Satin and Polished Ebony	23,800	23,800
GP-163 PE	5	4	Satin and Polished Mahogany	26,100	26,100
GP-163 PE	5	4	Satin and Polished Walnut	26,500	26,500
GP-163 PE	5	4	Polished White	24,500	24,500
GP-178 PE	5	10	Satin and Polished Ebony	27,900	27,900
GP-178 PE	5	10	Satin and Polished Mahogany	30,100	30,100
GP-178 PE	5	10	Satin and Polished Walnut	30,500	30,500
GP-193 PE	6	4	Satin and Polished Ebony	36,300	36,300
GP-215 PE	7	1	Satin and Polished Ebony	47,600	47,600

BRODMANN

Verticals

PE 116	45		Polished Ebony	6,990	5,780
PE 121	47		Polished Ebony	7,690	6,180
PE 123C	48		Italian Provincial Satin Cherry	8,590	6,780
PE 123M	48		French Provincial Satin Mahogany	8,590	6,780
PE 123W	48		Satin Walnut	8,590	6,780
PE 125	49		Polished Ebony	9,390	6,580
PE 128	50		Polished Ebony	9,490	8,580
PE 132	52		Polished Ebony	9,990	8,980

Grands

PE 150	4	11	Polished Ebony	17,970	12,980
PE 162	5	4	Polished Ebony	20,970	14,980
PE 187	6	2	Polished Ebony	24,970	16,980
PE 212	7		Polished Ebony	31,970	26,980
PE 228	7	5	Polished Ebony	39,970	32,980
PE 228R	7	5	Polished Ebony w/Renner action	49,970	40,980

Cable, Hobart M. — see Sejung

CABLE-NELSON

Verticals

CN 116	45		Polished Ebony	3,999	3,999
CN 216	45		Satin and Polished Walnut	3,999	3,999

Grands

CN 151	4	11	Polished Ebony	11,499	10,398
CN 161	5	3	Polished Ebony	16,199	13,888

Chase, A.B. — see Everett

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
Conover Cable — see Samick					
CRISTOFORI					
Verticals					
CRV425	42.5		Continental Satin Ebony	3,399	3,399
CRV425	42.5		Continental Polished Ebony	3,399	3,399
CRV425	42.5		Continental Polished Mahogany	3,599	3,599
CRV430	43		French Provincial Satin Cherry	4,490	4,490
CRV430	43		Mediterranean Satin Oak	4,199	4,199
CRV430	43		Satin Cherry	4,390	4,390
CRV450S	45		Satin Ebony	5,490	4,898
CRV450S	45		Satin Walnut	5,490	4,798
CRV450S	45		Satin Oak	5,490	4,898
CRV480	48		Satin Ebony	6,290	5,998
CRV480	48		Polished Ebony	6,290	5,798
CRV480	48		Polished Mahogany	6,490	5,998
Grands					
CRG48	4	8	Polished Ebony	7,490	7,490
CRG48	4	8	Polished Mahogany	7,990	7,990
CRG410	4	10	Satin Ebony	9,490	8,698
CRG410	4	10	Polished Ebony	9,490	8,398
CRG410	4	10	Polished Mahogany	9,990	8,798
CRG410	4	10	French Provincial Satin Cherry	10,490	9,198
CRG53	5	3	Satin Ebony	11,990	10,498
CRG53	5	3	Polished Ebony	11,990	10,198
CRG53	5	3	Satin Walnut/Mahogany	12,490	10,598
CRG53	5	3	Polished Walnut/Mahogany	12,490	10,598
CRG53	5	3	French Provincial Satin Cherry	13,490	10,998
CRG53	5	3	Polished Bubinga	13,690	10,998
CRG53	5	3	Polished White	12,490	10,598
CRG57	5	7	Satin Ebony	14,490	11,298
CRG57	5	7	Polished Ebony	14,490	10,998
CRG57	5	7	Satin Walnut/Mahogany	14,990	11,398
CRG57	5	7	Polished Walnut/Mahogany	14,990	11,398
CRG57	5	7	French Provincial Satin Cherry	15,990	11,798
CRG57	5	7	Polished Bubinga	16,290	11,798
CRG57	5	7	Polished White	14,990	11,398
CRG62	6	2	Satin Ebony	16,490	12,698
CRG62	6	2	Polished Ebony	16,490	12,398
CRG62	6	2	Polished Mahogany	17,290	12,798

CUNNINGHAM

Verticals

Studio	48		Satin Ebony	5,390	5,390
Studio	48		Polished Ebony	4,890	4,890
Studio	48		Satin Mahogany	5,990	5,990
Studio	48		Polished Mahogany	5,490	5,490
Full Upright	50		Satin Ebony	7,490	7,490
Full Upright	50		Polished Ebony	6,990	6,990
Full Upright	50		Satin Mahogany	7,890	7,890
Full Upright	50		Polished Mahogany	7,390	7,390

Grands

Baby Grand	5		Satin Ebony	12,690	12,690
Baby Grand	5		Polished Ebony	11,890	11,890
Baby Grand	5		Satin Mahogany	13,390	13,390

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
CUNNINGHAM (continued)					
Baby Grand	5		Polished Mahogany	12,590	12,590
Studio Grand	5	4	Satin Ebony	14,090	14,090
Studio Grand	5	4	Polished Ebony	13,290	13,290
Studio Grand	5	4	Satin Mahogany	14,790	14,790
Studio Grand	5	4	Polished Mahogany	13,990	13,990
Parlour Grand	5	10	Satin Ebony	18,290	18,180
Parlour Grand	5	10	Polished Ebony	17,490	17,380
Parlour Grand	5	10	Satin Mahogany	18,990	18,980
Parlour Grand	5	10	Polished Mahogany	18,190	18,180
Chamber Grand	6	6	Satin Ebony	31,590	29,100
Chamber Grand	6	6	Polished Ebony	30,790	28,300
Concert Grand	9		Satin Ebony	60,790	60,790
Concert Grand	9		Polished Ebony	59,990	59,990

Disklavier — see Yamaha

EBEL, CARL

Verticals

115	45		Polished Ebony	5,190	5,190
115	45		Polished Mahogany/Walnut/Oak	5,390	5,390
121	48		Polished Ebony	5,550	5,550
121	48		Polished Mahogany/Walnut	5,780	5,780

Grands

G-151	4	11.5	Polished Ebony	10,990	10,990
G-151	4	11.5	Polished Mahogany/Walnut/Oak/White	11,490	11,490
G-151	4	11.5	Satin Finishes	11,490	11,490
G-151	4	11.5	Polished Ebony (round leg)	11,290	11,290
G-151	4	11.5	Polished Mahogany/Walnut (round leg)	11,790	11,790
G-151	4	11.5	Satin Finishes (round leg)	11,790	11,790
G-151	4	11.5	Queen Anne Polished Ebony	11,290	11,290
G-151	4	11.5	Queen Anne Polished Mahogany/Walnut	11,790	11,790
G-151	4	11.5	Queen Anne Satin Finishes	11,790	11,790
G-151	4	11.5	Ebony w/Sapele Fallboard Front	11,490	11,490
G-151	4	11.5	Ebony w/Bubinga Fallboard & Lid Underside	13,490	13,490
G-151	4	11.5	Ebony w/Sapele Fallboard & Lid Underside	11,790	11,790

ESSEX

Essex MSRP is the price at the New York retail store.

Verticals

EUP-108C	42		Continental Polished Ebony	4,390	4,390
EUP-111E	44		Polished Ebony	5,190	5,190
EUP-111E	44		Polished Sapele Mahogany	5,590	5,590
EUP-116E	45		Polished Ebony	6,090	5,920
EUP-116E	45		Polished Walnut/Sapele Mahogany	6,390	6,020
EUP-116E	45		Polished White	6,590	6,160
EUP-116FC	45		French Country Cherry	6,190	6,020
EUP-116CT	45		Contemporary Sapele Mahogany	6,590	6,260
EUP-116P	45		Italian Provincial Walnut	6,190	6,190
EUP-116QA	45		Queen Anne Cherry	6,190	6,190
EUP-116ST	45		Sheraton Traditional Sapele Mahogany	6,190	6,190
EUP-116EC	45		English Country Walnut	6,590	6,460
EUP-116ET	45		English Traditional Sapele Mahogany	6,590	6,460
EUP-116FF	45		Formal French Brown Cherry	6,590	6,460
EUP-116FF	45		Formal French Red Cherry	6,590	6,460

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
ESSEX (continued)					
EUP-123E	48		Polished Ebony	6,590	6,360
EUP-123E	48		Satin Sapele Mahogany	6,990	6,580
EUP-123E	48		Polished Mahogany	6,990	6,460
EUP-123E	48		Satin Walnut	6,990	6,460
EUP-123CL	48		French Satin Sapele Mahogany	7,490	7,020
EUP-123FL	48		Empire Satin Walnut	7,490	7,020
EUP-123FL	48		Empire Satin Sapele Mahogany	7,490	7,020
EUP-123S	48		Institutional Studio Polished Ebony	6,090	6,090

Grands

EGP-155	5	1	Satin and Polished Ebony	11,990	11,990
EGP-155	5	1	Polished and Satin Lustre Sapele Mahogany	12,790	12,790
EGP-155	5	1	Polished Kewazinga Bubinga	14,190	13,760
EGP-155	5	1	Polished White	15,190	13,760
EGP-155F	5	1	French Provincial Brown Cherry	15,490	15,400
EGP-161	5	3	Satin and Polished Ebony	12,990	12,990
EGP-161F	5	3	French Provincial Brown Cherry	17,290	17,290
EGP-173	5	8	Polished and Satin Lustre Ebony	15,390	15,390
EGP-173	5	8	Polished Sapele Mahogany	16,290	16,290
EGP-173F	5	8	French Provincial Brown Cherry	17,890	17,890
EGP-183	6		Satin and Polished Ebony	18,990	18,990

ESTONIA

The Estonia factory can make custom-designed finishes with exotic veneers; prices upon request. Prices here include Jansen adjustable artist bench.

Grands

L168	5	6	Satin and Polished Ebony	35,280	35,280
L168	5	6	Satin and Polished Mahogany	38,205	38,205
L168	5	6	Satin and Polished Walnut	38,205	38,205
L168	5	6	Satin and Polished Bubinga	41,430	41,430
L168	5	6	"Hidden Beauty" Polished Ebony w/Bubinga	39,085	39,085
L168	5	6	Polished Pyramid Mahogany	45,815	45,815
L168	5	6	"Hidden Beauty" Polished Ebony w/Pyramid Mahogany	41,485	41,485
L168	5	6	Satin and Polished White	38,105	38,105
L190	6	3	Satin and Polished Ebony	42,890	42,890
L190	6	3	Satin and Polished Mahogany	46,200	46,200
L190	6	3	Polished Pyramid Mahogany	55,150	55,150
L190	6	3	Satin and Polished Walnut	46,200	46,200
L190	6	3	Polished Rosewood	55,150	55,150
L190	6	3	Satin and Polished Bubinga	49,737	49,737
L190	6	3	Satin and Polished White	46,200	46,200
L190	6	3	"Hidden Beauty" Polished Ebony w/Bubinga	45,615	45,615
L273	9		Satin and Polished Ebony	102,480	102,480
All models, Ebony and White			Queen Anne, add'l	4,500	4,500
All models, Ebony and White			Victorian, add'l	4,500	4,500

EVERETT

Verticals

EV-112	44		Continental Polished Ebony		4,580
EV-112	44		Continental Polished Mahogany		4,700
EV-113	45		Polished Ebony		4,780
EV-113	45		Polished Mahogany		4,900
EV-115CB	45		Chippendale Polished Mahogany		5,100
EV-121	48		Polished Ebony		5,380
EV-121	48		Polished Mahogany		5,500

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
EVERETT (continued)					
Grands					
EV-146	4	9	Polished Ebony		8,980
EV-146	4	9	Polished Mahogany/White		9,480
EV-152	5		Polished Ebony		9,780
EV-152	5		Polished Mahogany/Sapele		10,280
EV-165	5	5	Polished Ebony		10,780
EV-165	5	5	Polished Mahogany/Walnut		11,280
EV-185	6	1	Polished Ebony		12,980

Falcone — see Sejung

FANDRICH & SONS

These are the prices on the Fandrich & Sons website. Other finishes available at additional cost. See website for details.

Verticals

126V	50		Polished Ebony	17,040	17,040
132V	52		Polished Ebony	18,440	18,440

Grands

165HGS-A	5	5	Polished Ebony w/Mahogany	21,990	21,990
165HGS	5	5	Polished Ebony w/Mahogany	19,475	19,475
165S	5	5	Polished Ebony w/Mahogany	16,960	16,960
185HGS-A	6	1	Polished Ebony w/Mahogany	23,990	23,990
185HGS	6	1	Polished Ebony w/Mahogany	20,975	20,975
185S	6	1	Polished Ebony w/Mahogany	17,960	17,960
203HGS-A	6	8	Polished Ebony	28,840	28,840

FAZIOLI

Fazioli is willing to make custom-designed cases with exotic veneers, marquetry, and other embellishments.

Prices on request to Fazioli.

Grands

F156	5	2	Satin and Polished Ebony	95,800	95,800
F156	5	2	Satin and Polished Traditional Veneers	110,200	110,200
F156	5	2	Satin and Polished Pyramid Mahogany	115,000	115,000
F156	5	2	Satin and Polished Brier Woods	119,800	119,800
F183	6		Satin and Polished Ebony	106,400	106,400
F183	6		Satin and Polished Traditional Veneers	122,400	122,400
F183	6		Satin and Polished Pyramid Mahogany	127,600	127,600
F183	6		Satin and Polished Brier Woods	133,000	133,000
F212	6	11	Satin and Polished Ebony	120,600	120,600
F212	6	11	Satin and Polished Traditional Veneers	138,600	138,600
F212	6	11	Polished Pyramid Mahogany	144,800	144,800
F212	6	11	Satin and Polished Brier Woods	150,800	150,800
F228	7	6	Satin and Polished Ebony	138,400	138,400
F228	7	6	Satin and Polished Traditional Veneers	159,200	159,200
F228	7	6	Polished Pyramid Mahogany	166,000	166,000
F228	7	6	Satin and Polished Brier Woods	173,000	173,000
F278	9	2	Satin and Polished Ebony	179,200	179,200
F278	9	2	Satin and Polished Traditional Veneers	206,000	206,000
F278	9	2	Polished Pyramid Mahogany	215,000	215,000
F278	9	2	Satin and Polished Brier Woods	224,000	224,000
F308	10	2	Satin and Polished Ebony	196,000	196,000
F308	10	2	Satin and Polished Traditional Veneers	225,400	225,400
F308	10	2	Polished Pyramid Mahogany	235,200	235,200
F308	10	2	Satin and Polished Brier Woods	245,000	245,000
			Fourth pedal and two lyres included in price of F308		
All but F308			Fourth pedal, add'l	11,400	11,400

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
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FEURICH

Prices do not include bench. Euro = \$1.40

Verticals

F 123		49	Satin Ebony	26,734	26,734
F 123		49	Polished Ebony	28,432	28,432
F 123		49	Polished Mahogany/Walnut	33,144	33,144
			With Fandrich action, add'l	3,290	3,290

Grands

F 172	5	8	Satin Ebony	72,672	72,672
F 172	5	8	Polished Ebony	78,126	78,126
F 172	5	8	Polished Ebony w/Pyramid Mahogany	86,252	86,252
F 172	5	8	Polished Mahogany	85,340	85,340
F 172	5	8	Polished Sapele Mahogany/Walnut	83,070	83,070
F 172	5	8	Satin Cherry	73,966	73,966
F 172 ADF	5	8	"Old German Style" Satin Ebony	79,736	79,736
F 172 ADF	5	8	"Old German Style" Polished Ebony	89,520	89,520
F 172 ADF	5	8	"Old German Style" Satin Cherry	79,736	79,736
F 172 C	5	8	Classic Polished Ebony	82,252	82,252
F 172 C	5	8	Classic Polished Ebony w/Pyramid Mahogany	86,188	86,188
F 172 R	5	8	Rococco Polished Walnut	112,286	112,286
F 172 S	5	8	Sheraton Polished Mahogany	96,246	96,246
F 227	7	5	Satin Ebony	94,528	94,528
F 227	7	5	Polished Ebony	104,978	104,978
F 227	7	5	Polished Ebony w/Pyramid Mahogany	108,106	108,106
F 227	7	5	Polished Mahogany	112,842	112,842
F 227	7	5	Polished Walnut	112,820	112,820
F 227 ADF	7	5	"Old German Style" Satin Ebony	103,474	103,474
F 227 ADF	7	5	"Old German Style" Polished Ebony	114,514	114,514
F 227 R	7	5	Rococco Polished Walnut	144,658	144,658

FÖRSTER, AUGUST

Prices do not include bench. Euro = \$1.45

Verticals

116 C		46	Chippendale Polished Ebony		31,796
116 C		46	Chippendale Satin Mahogany		30,091
116 C		46	Chippendale Polished Mahogany		31,918
116 C		46	Chippendale Satin Walnut		31,492
116 C		46	Chippendale Polished Walnut		33,319
116 D		46	Continental Polished Ebony		26,102
116 D		46	Continental Satin Mahogany/Beech/Alder		26,224
116 D		46	Continental Polished Mahogany		26,224
116 D		46	Continental Satin and Polished Walnut/Pear/Oak/Cherry		27,685
116 D		46	Continental Polished White		27,685
116 E		46	Polished Ebony		30,182
116 E		46	Satin and Polished Mahogany/Beech/Alder		30,274
116 E		46	Satin and Polished Walnut/Oak/Cherry/Pear		31,705
116 E		46	Polished White		31,766
125 G		49	Polished Ebony		33,456
125 G		49	Satin and Polished Mahogany/Beech/Alder		33,547
125 G		49	Satin and Polished Walnut/Oak/Cherry/Pear		35,572
125 G		49	Polished White		35,069
125 G		49	With Medallion, add'l		1,400

Grands

170	5	8	Polished Ebony		65,317
170	5	8	Satin and Polished Walnut		67,707
170	5	8	Satin and Polished Mahogany		65,438
170	5	8	Polished White		68,940

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
FÖRSTER, AUGUST (continued)					
170	5	8	"Classik" Polished Ebony		72,883
170	5	8	"Classik" Polished Walnut		82,917
170	5	8	"Classik" Polished Mahogany		74,269
170	5	8	"Classik" Polished White		76,888
170	5	8	Chippendale Open-Pore Walnut		79,247
170	5	8	"Antik" Open-Pore Walnut		89,250
190	6	4	Polished Ebony		72,655
190	6	4	Satin and Polished Walnut		75,030
190	6	4	Satin and Polished Mahogany		72,807
190	6	4	Polished White		76,324
190	6	4	"Classik" Polished Ebony		80,207
190	6	4	"Classik" Polished Walnut		90,255
190	6	4	"Classik" Polished Mahogany		81,623
190	6	4	"Classik" Polished White		84,257
190	6	4	Chippendale Open-Pore Walnut		86,571
190	6	4	"Antik" Open-Pore Walnut		96,604
215	7	2	Polished Ebony		81,881
275	9	1	Polished Ebony		151,429
170 or 190			Pyramid Mahogany, add'l		9,805

GROTRIAN

Prices do not include bench. Other woods available on request. Euro = \$1.40

Verticals

Friedrich Grotrian	43.5		Satin Ebony	14,772	14,772
Friedrich Grotrian	43.5		Polished Ebony	17,090	17,090
Friedrich Grotrian	43.5		Open-pore Beech	14,772	14,772
Cristal	44		Continental Satin Ebony	20,117	20,117
Cristal	44		Continental Polished Ebony	20,962	20,962
Cristal	44		Continental Open-pore Oak/Walnut/Beech	20,117	20,117
Cristal	44		Continental Polished Walnut/White	23,028	23,028
Canto	45		Continental Satin Ebony	22,936	22,936
Canto	45		Continental Open-pore Beech	22,936	22,936
Canto	45		Continental Polished Ebony	23,687	23,687
Carat	45.5		Polished Ebony	26,410	26,410
Carat	45.5		Open-pore Oak/Walnut	25,658	25,658
Carat	45.5		Polished Walnut/White	28,854	28,854
College	48		Satin Ebony	29,162	29,162
College	48		Polished Ebony	30,477	30,477
College	48		Open-pore Beech	29,162	29,162
Classic	49		Polished Ebony	35,551	35,551
Classic	49		Open-pore Oak/Walnut	34,236	34,236
Classic	49		Polished Walnut/White	38,933	38,933
Concertino	52		Polished Ebony	43,016	43,016
Uprights			Sostenuto pedal, add'l	1,315	1,315

Grands

Chambre	5	5	Satin Ebony	63,736	63,577
Chambre	5	5	Polished Ebony	70,685	69,745
Chambre	5	5	Open-pore Oak/Walnut	65,988	65,576
Chambre	5	5	Polished Walnut/White	77,262	75,584
Cabinet	6	3	Satin Ebony	74,444	73,082
Cabinet	6	3	Polished Ebony	82,522	80,253
Cabinet	6	3	Open-pore Oak/Walnut	77,262	75,584
Cabinet	6	3	Polished Walnut/White	90,411	87,256
Charis	6	10	Satin Ebony	83,979	81,547
Charis	6	10	Polished Ebony	93,097	89,640
Concert	7	4	Satin Ebony	101,211	96,843
Concert	7	4	Polished Ebony	113,095	107,392

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
GROTRIAN (continued)					
Concert Royal	9	1	Polished Ebony	138,597	130,030
			Chippendale/Empire, add'l	4,250	4,250
			CS Style, add'l	5,120	5,120
			Rococo, add'l	13,560	13,560

GULBRANSEN

Verticals

GB U7	45		"Designer" Satin Cherry/Oak	3,995	3,995
GB U8	47		"Studio" Polished Ebony/Mahogany	4,495	4,495
GB U8	47		"Deluxe" Polished Ebony/Mahogany	4,895	4,895
GB U10	55		"Professional" Polished Ebony	6,995	6,995

Grands

GB U50 TS	4	11	Polished Ebony/Mahogany	8,495	8,495
GB U60 TS	5	2	Polished Ebony/Mahogany	8,995	8,990

HAESSLER

Prices do not include bench.

Verticals

115 K	45		Satin and Polished Ebony	18,294	18,294
115 K	45		Satin Beech/Ash/Waxed Alder	17,996	17,996
115 K	45		Satin and Polished White	18,998	18,998
118 K	47		Satin and Polished Ebony	20,074	20,074
118 K	47		Satin Ebony with Walnut Accent	21,604	21,604
118 K	47		Satin and Polished Mahogany	21,176	21,176
118 K	47		Satin and Polished Walnut	21,176	21,176
118 K	47		Satin and Polished Cherry	22,694	22,694
118 K	47		Cherry with Yew Inlay, Satin and Polish	22,694	22,694
118 K	47		Satin Oak/Beech	19,196	19,196
118 K	47		Polished Bubinga	22,946	22,946
118 K	47		Satin and Polished White	20,922	20,922
118 KM	47		Satin and Polished Ebony	21,088	21,088
118 KM	47		Satin and Polished White	21,868	21,868
118 CH	47		Chippendale Satin and Polished Mahogany	22,638	22,638
118 CH	47		Chippendale Satin and Polished Walnut	22,638	22,638
124 K	49		Satin and Polished Ebony	23,024	23,024
124 K	49		Satin Ebony with Walnut Accent	22,430	22,430
124 K	49		Satin and Polished Mahogany	22,936	22,936
124 K	49		Satin and Polished Walnut	22,936	22,936
124 K	49		Satin and Polished Cherry	23,496	23,496
124 K	49		Cherry with Yew Inlay, Satin and Polish	24,564	24,564
124 K	49		Satin and Polished White	22,132	22,132
124 KM	49		Satin and Polished Ebony	21,814	21,814
124 KM	49		Satin and Polished White	22,606	22,606
132	52		Satin and Polished Ebony	28,996	28,996

Grands

175	5	8	Satin and Polished Ebony	55,254	55,254
175	5	8	Satin and Polished Mahogany	57,464	57,464
175	5	8	Satin and Polished Walnut	58,012	58,012
175	5	8	Satin and Polished Cherry	57,740	57,740
175	5	8	Polished Bubinga	60,776	60,776
175	5	8	Satin and Polished White	65,000	65,000
175	5	8	Saxony Polished Pyramid Mahogany	72,898	72,898
175	5	8	Saxony Polished Burl Walnut	73,602	73,602
175	5	8	"President" Polished Ebony	61,688	61,688
175	5	8	"President" Polished Mahogany	64,152	64,152

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
HAESSLER (continued)					
175	5	8	"President" Polished Walnut	64,768	64,768
175	5	8	"President" Polished Bubinga	67,848	67,848
175	5	8	Louis XVI Ebony, Satin and Polished	64,494	64,494
175	5	8	Louis XVI Mahogany, Satin and Polished	67,714	67,714
175	5	8	Louis XVI Walnut, Satin and Polished	67,068	67,068
175	5	8	"Kaiser Wilhelm II" Polished Ebony	65,044	65,044
175	5	8	"Kaiser Wilhelm II" Polished Mahogany	67,650	67,650
175	5	8	"Kaiser Wilhelm II" Polished Walnut	68,300	68,300
175	5	8	"Kaiser Wilhelm II" Polished Cherry	67,980	67,980
175	5	8	"Ambassador" Satin East Indian Rosewood	75,702	75,702
175	5	8	"Ambassador" Satin Walnut	70,092	70,092
175	5	8	"Nicolas II" Satin Walnut w/Burl Inlay	75,702	75,702
175	5	8	Louis XVI Rococo Satin White w/Gold	81,312	81,312
175	5	8	"Classic Alexandra" Polished Ebony	62,800	62,800
175	5	8	"Classic Alexandra" Polished Mahogany	65,946	65,946
175	5	8	"Classic Alexandra" Polished Walnut	65,316	65,316
186	6	1	Satin and Polished Ebony	62,248	62,248
186	6	1	Satin and Polished Mahogany	64,746	64,746
186	6	1	Satin and Polished Walnut	65,364	65,364
186	6	1	Satin and Polished Cherry	65,054	65,054
186	6	1	Polished Bubinga	68,474	68,474
186	6	1	Satin and Polished White	65,364	65,364
186	6	1	Saxony Polished Pyramid Mahogany	82,136	82,136
186	6	1	Saxony Polished Burl Walnut	82,928	82,928
186	6	1	"President" Polished Ebony	69,498	69,498
186	6	1	"President" Polished Mahogany	72,280	72,280
186	6	1	"President" Polished Walnut	72,974	72,974
186	6	1	"President" Polished Bubinga	76,450	76,450
186	6	1	Louis XVI Ebony, Satin and Polished	72,656	72,656
186	6	1	Louis XVI Mahogany, Satin and Polished	76,286	76,286
186	6	1	Louis XVI Walnut, Satin and Polished	75,570	75,570
186	6	1	"Kaiser Wilhelm II" Polished Ebony	73,282	73,282
186	6	1	"Kaiser Wilhelm II" Polished Mahogany	76,220	76,220
186	6	1	"Kaiser Wilhelm II" Polished Walnut	76,956	76,956
186	6	1	"Kaiser Wilhelm II" Polished Cherry	76,594	76,594
186	6	1	"Ambassador" Satin East Indian Rosewood	85,292	85,292
186	6	1	"Ambassador" Satin Walnut	78,980	78,980
186	6	1	"Nicolas II" Satin Walnut w/Burl Inlay	85,292	85,292
186	6	1	Louis XVI Rococo Satin White w/Gold	91,620	91,620
186	6	1	"Classic Alexandra" Polished Ebony	70,762	70,762
186	6	1	"Classic Alexandra" Polished Mahogany	74,304	74,304
186	6	1	"Classic Alexandra" Polished Walnut	73,590	73,590

HAILUN

Verticals

116	45.5	Satin Ebony/Walnut (school piano)	6,718	6,146
121	48	Polished Ebony	6,570	6,013
121	48	Polished Mahogany/Walnut	6,750	6,175
121	48	Satin and Polished White	6,950	6,355
121C	48	Polished Ebony (curved legs)	6,980	6,382
121C	48	Polished Mahogany/Walnut (curved legs)	7,300	6,670
121TD	48	Polished Ebony w/Detail Trim	7,300	6,670
121TD	48	Polished Mahogany/Walnut w/Detail Trim	7,460	6,814
HU1	48	Polished Ebony	7,100	6,490
HU1	48	Polished Mahogany/Walnut	7,300	6,670
HU1	48	Satin and Polished White	7,300	6,670
125	50	Polished Ebony	7,300	6,670

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
HAILUN (continued)					
125		50	Polished Ebony w/Nickel Trim	7,680	7,012
125		50	Polished Mahogany/Walnut	7,500	6,850
125		50	Satin and Polished White	7,500	6,850
HU5		50	Polished Ebony	7,500	6,850
HU5		50	Polished Mahogany/Walnut	7,700	7,030
HU5		50	Satin and Polished White	7,700	7,030
HU6		51.5	Polished Ebony	8,960	8,164
HU7		52	Polished Ebony	9,230	8,407

Grands

151	4	11.5	Polished Ebony	12,300	11,170
151	4	11.5	Polished Mahogany/Walnut	12,620	11,458
151C	4	11.5	Chippendale Polished Ebony	12,560	11,404
151C	4	11.5	Chippendale Polished Mahogany/Walnut	12,880	11,692
161	5	4	Polished Ebony	13,680	12,412
161	5	4	Polished Mahogany/Walnut	14,000	12,700
161G	5	4	Georgian Polished Ebony	14,360	13,024
161G	5	4	Georgian Polished Mahogany/Walnut	14,680	13,312
178	5	10	Polished Ebony	16,716	15,144
178	5	10	Polished Mahogany/Walnut	17,036	15,432
178	5	10	Baroque Polished Ebony-Bird's Eye Maple	17,460	15,814
198	6	5	Polished Ebony	24,900	22,510
198	6	5	Polished Mahogany/Walnut	25,220	22,798
198	6	5	Baroque Polished Ebony-Bird's Eye Maple	25,470	23,023
218	7	2	Polished Ebony	31,760	28,684
277	9	1	Polished Ebony	85,000	76,600
277	9	1	"Dreams of the East" Carved Rosewood	371,000	334,000

HALLET, DAVIS & CO.

Model numbers ending in "I" use imported veneers from around the world.

Verticals

H-C43R		43	Satin Cherry/Oak (Roung Leg)	4,650	4,100
H-C43F		43	French Provincial Satin Cherry/Oak	4,650	4,100
H-111GD		44	Continental Polished Ebony	4,065	3,710
H-111GD		44	Continental Polished Mahogany/Walnut/White	4,185	3,790
H-111GD I		44	Continental Polished Walnut	4,485	3,990
H-115GC		45	Chippendale Polished Ebony	4,680	4,120
H-115GC		45	Chippendale Polished Mahogany/Walnut/White	4,755	4,170
H-115GC I		45	Chippendale Polished Walnut	5,055	4,370
H-115WH		46	Polished Ebony	4,680	4,120
H-115WH		46	Polished Mahogany/Walnut	4,755	4,170
H-115WH I		46	Polished Walnut	5,055	4,370
H-121WH		48	Polished Ebony	5,010	4,340
H-121WH		48	Polished Mahogany/Walnut	5,175	4,450
H-121WH I		48	Polished Walnut	5,475	4,650
H-126WH		50	Polished Ebony	5,985	4,990
H-126WH		50	Polished Mahogany	6,150	5,100
H-131WH		52	Polished Ebony	7,800	6,200

Grands

H-146C	4	9	Satin Ebony	11,085	8,390
H-146C	4	9	Polished Ebony	10,485	7,990
H-146C	4	9	Polished Mahogany/White	11,085	8,390
H-146C I	4	9	"Metropolitan" Polished Ebony/Silver Plate	11,085	8,390
H-146C I	4	9	Satin Mahogany/Walnut	11,985	8,990
H-146C I	4	9	Polished Walnut	11,685	8,790
H-146S	4	9	Queen Anne Polished Ebony	11,085	8,390
H-146S	4	9	Queen Anne Polished Mahogany	11,685	8,790

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
<i>HALLET, DAVIS & CO. (continued)</i>					
H-146S	4	9	Queen Anne Polished Walnut	11,985	8,990
H-152C	5		Satin Ebony	13,185	9,790
H-152C	5		Polished Ebony	12,585	9,390
H-152C	5		Polished Mahogany/White	13,185	9,790
H-152C	5		Polished Brown Sapele Mahogany	13,185	9,790
H-152C I	5		"Metropolitan" Polished Ebony/Silver Plate	13,485	9,990
H-152C I	5		Satin Mahogany/Walnut	14,085	10,390
H-152C I	5		Polished Mahogany/Walnut	13,785	10,190
H-152D	5		Victorian Polished Ebony	13,785	10,190
H-152D	5		Victorian Polished Mahogany	14,385	10,590
H-152D	5		Victorian Polished Brown Sapele Mahogany	14,385	10,590
H-152D I	5		Victorian Satin Mahogany/Walnut	15,285	11,190
H-152D I	5		Victorian Polished Mahogany/Walnut	14,985	10,990
H-152S	5		Queen Anne Polished Ebony	13,785	10,190
H-152S I	5		Queen Anne Satin Mahogany/Walnut	15,285	11,190
H-152S I	5		Queen Anne Polished Mahogany/Walnut	14,985	10,990
H-165C	5	5	Satin Ebony	14,685	10,790
H-165C	5	5	Polished Ebony	14,085	10,390
H-165C	5	5	Polished Mahogany/White	14,685	10,790
H-165C	5	5	Polished Brown Sapele Mahogany	14,685	10,790
H-165C I	5	5	"Metropolitan" Polished Ebony/Silver Plate	14,985	10,990
H-165C I	5	5	Satin Mahogany/Walnut	15,585	11,390
H-165C I	5	5	Polished Mahogany/Walnut	15,285	11,190
H-165D	5	5	Period Polished Ebony	15,285	11,190
H-165D	5	5	Period Polished Brown Sapele Mahogany	15,585	11,390
H-165D I	5	5	Period Satin Mahogany/Walnut	16,785	12,190
H-165D I	5	5	Period Polished Mahogany/Walnut	16,485	11,990
H-185C	6	1	Satin Ebony	17,385	12,590
H-185C	6	1	Polished Ebony	16,785	12,190
H-185C	6	1	Polished Mahogany/Sapele Mahogany/Walnut	17,385	12,590
H-185C I	6	1	"Metropolitan" Polished Ebony/Silver Plate	17,385	12,590
H-185C I	6	1	Satin Mahogany/Walnut	18,285	13,190
H-185C I	6	1	Polished Mahogany/Walnut	17,985	12,990
H-185D	6	1	Period Polished Ebony	17,685	12,790
H-215C	7	1	Polished Ebony	26,985	18,990

HARDMAN, PECK & CO.

Verticals

R110S	44		Polished Ebony	4,065	3,710
R110S	44		Polished Dark Mahogany	4,225	3,810
R110F	44		French Provincial Satin Mahogany/Oak	4,965	4,290
R110R	44		Satin Mahogany/Oak (round legs)	4,965	4,290
R115LS	45		Polished Ebony	4,395	3,890
R115LS	45		Polished Dark Mahogany	4,495	3,990
R115F	45		French Provincial Satin Mahogany/Oak	5,295	4,490
R115R	45		Satin Mahogany/Oak (round legs)	5,295	4,490
R116	46		School Polished Ebony	4,495	3,990
R116	46		School Satin Cherry	4,645	4,090
R117XK	46		Chippendale Polished Dark Mahogany	4,845	4,190
R120LS	48		Polished Ebony	4,795	4,090
R120LS	48		Polished Dark Mahogany	4,895	4,190
R132HA	52		Polished Ebony	7,295	5,790

Grands

R143S	4	8	Satin Ebony	10,795	8,190
R143S	4	8	Polished Ebony	10,295	7,790
R143S	4	8	Polished Dark Mahogany	10,795	8,190

*See pricing explanation on page 213.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
HARDMAN, PECK & CO. (continued)					
R143S	4	8	Polished White	10,995	8,290
R143F	4	8	French Provincial Polished Dark Mahogany	11,595	8,690
R143F	4	8	French Provincial Satin Cherry	11,595	8,690
R143R	4	8	Polished Ebony/Dark Mahogany (round legs)	11,595	8,690
R150S	5		Satin Ebony	11,595	8,690
R150S	5		Polished Ebony	10,995	8,290
R150S	5		Polished Dark Mahogany	11,595	8,690
R150S	5		Polished White	11,695	8,790
R150F	5		French Provincial Polished Dark Mahogany	11,995	8,990
R150F	5		French Provincial Satin Cherry	11,995	8,990
R150R	5		Polished Ebony/Dark Mahogany (round legs)	11,995	8,990
R158S	5	3	Satin Ebony	12,495	9,190
R158S	5	3	Polished Ebony	11,795	8,790
R158S	5	3	Polished Dark Mahogany	12,495	9,190
R158F	5	3	French Provincial Polished Dark Mahogany	12,895	9,590
R158F	5	3	French Provincial Satin Cherry	12,895	9,590
R158R	5	3	Polished Ebony/Dark Mahogany (round legs)	12,895	9,590
R168S	5	7	Satin Ebony	13,295	9,790
R168S	5	7	Polished Ebony	12,695	9,390
R168S	5	7	Polished Dark Mahogany	13,295	9,790
R168F	5	7	French Provincial Polished Dark Mahogany	13,795	10,190
R168F	5	7	French Provincial Satin Cherry	13,795	10,190
R168R	5	7	Polished Ebony/Dark Mahogany (round legs)	13,795	10,190
R185S	6	1	Satin Ebony	15,595	11,390
R185S	6	1	Polished Ebony	14,995	10,990
R185S	6	1	Polished Dark Mahogany	15,595	11,390

HEINTZMAN & CO.

Heintzman Verticals

121D	48		Polished Ebony/White	6,295	6,295
121D	48		Polished Mahogany/Cherry	6,495	6,495
121DL	48		Satin Mahogany/Cherry	6,495	6,495
123B	48.5		Polished Ebony/White	7,195	7,195
123B	48.5		Polished Mahogany/Cherry	7,395	7,395
123E	48.5		Polished Ebony/White	6,795	6,795
123E	48.5		Polished Mahogany	6,995	6,995
123F	48.5		French Provincial Polished Ebony	6,895	6,895
123F	48.5		French Provincial Polished Mahogany	7,095	7,095
126C	50		Polished Ebony	7,750	7,750
126C	50		Polished Mahogany	7,950	7,950
130A	51		Polished Ebony	8,295	8,295
130A	51		Polished Mahogany	8,495	8,495
132C	52		Polished Ebony	8,995	8,995
132C	52		Polished Mahogany/Cherry	9,195	9,195
132D	52		Hand-Rubbed Satin Ebony, Decorative Panel	9,595	9,496
132D	52		Polished Ebony, Decorative Panel	9,395	9,376
132D	52		Polished Mahogany/Walnut/Cherry, Decorative Panel	9,595	9,496
132E	52		French Provincial Polished Ebony/White	9,395	9,376
132E	52		French Provincial Satin Mahogany/Cherry	9,595	9,496
132E	52		French Provincial Polished Mahogany/Cherry	9,595	9,496
140CK	52		Hand-Rubbed Satin Ebony	10,995	10,995
140CK	55		Polished Ebony	10,795	10,795
140CK	55		Satin and Polished Mahogany/Cherry	11,195	11,195

*See pricing explanation on page 213.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
HEINTZMAN & CO. (continued)					
Heintzman Grands					
168	5	6	Polished Ebony/White	17,350	17,350
168	5	6	Satin and Polished Mahogany	17,700	17,700
186	6	1	Polished Ebony/White	19,980	19,980
186	6	1	Satin and Polished Mahogany	20,380	20,380
203	6	8	Polished Ebony/White	23,200	23,200
203	6	8	Satin and Polished Mahogany	23,650	23,650
274	9		Satin and Polished Ebony	on request	
Gerhard Heintzman Verticals					
G118		46.5	Polished Ebony	4,995	4,995
G118		46.5	Polished Mahogany	5,195	5,195
G120		47	Polished Ebony	5,995	5,400
G120		47	Polished Mahogany	6,195	5,600
G131		51.5	Polished Ebony	7,995	6,600
G131		51.5	Polished Mahogany	8,195	6,800
Gerhard Heintzman Grands					
G152	5		Polished Ebony	11,995	11,400
G152	5		Polished Mahogany	12,195	12,000
G152R	5		Empire Polished Ebony	12,195	11,600
G152R	5		Empire Polished Mahogany	12,295	12,200
HOFFMANN, W.					
Vision Series Verticals					
V112		44	Polished Ebony	10,000	9,500
V112		44	Polished Mahogany/Walnut	10,800	10,300
V112		44	Polished White	11,100	10,600
V120		47	Polished Ebony	10,900	10,400
V120		47	Polished Mahogany/Walnut	11,400	10,900
V120		47	Polished White	11,700	11,200
Tradition Series Verticals					
T122		48	Polished Ebony	12,400	11,900
T122		48	Satin Mahogany/Walnut/Cherry/Alder	13,300	12,800
T122		48	Polished Mahogany/Walnut/Cherry/White	14,100	13,600
T128		50	Polished Ebony	13,900	13,400
T128		50	Satin Mahogany/Walnut/Cherry/Alder	14,700	14,200
T128		50	Polished Mahogany/Walnut/Cherry/Alder	15,600	15,100
Vision Series Grands					
V158	5	2	Polished Ebony	29,300	27,800
V158	5	2	Polished Mahogany/Walnut/White	32,500	31,000
V183	6	1	Polished Ebony/Mahogany/Walnut	35,100	33,600
V183	6	1	Polished White	38,100	36,600
Tradition Series Grands					
T161	5	3	Polished Ebony	35,300	33,800
T161	5	3	Polished Mahogany/Walnut/White	38,300	36,800
T177	5	9	Polished Ebony	39,900	38,400
T177	5	9	Polished Mahogany/Walnut/White	42,900	41,400
T186	6	2	Polished Ebony	41,300	39,800
T186	6	2	Polished Mahogany/Walnut/White	45,100	43,600

*See pricing explanation on page 213.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
IRMLER					
Studio Edition Verticals					
P108	42.5		Polished Ebony	5,822	5,822
P108	42.5		Polished Mahogany/Walnut	5,992	5,992
P108	42.5		Polished White	5,906	5,906
P110	43		Polished Ebony	5,654	5,654
P118I	46.5		"Ren Vindetti" Polished Ebony	6,202	6,202
P118L	46.5		"Ren Vindetti" Polished Mahogany	6,590	6,590
P118	47		Polished Ebony	6,074	6,074
P118	47		Polished Mahogany/Walnut	6,248	6,248
P118	47		Polished White	6,204	6,204
P121B	47.5		"Ren Vindetti" Polished Ebony	6,932	6,932
P121I	47.5		"Ren Vindetti" Polished Mahogany	6,298	6,298
P122	48		Polished Ebony	6,328	6,328
P122	48		Polished Mahogany/Walnut	6,428	6,428
P122	48		Polished White	6,494	6,494
P122	48		Polished Ebony w/Burr Walnut Accents	6,676	6,676
P132	52		Polished Ebony	7,204	7,204
P132	52		Polished Mahogany/Walnut	7,468	7,468
P132	52		Polished White	7,370	7,370
Art Design Verticals					
Mia	47.5		Polished Ebony	6,876	6,876
Gina	48.5		Polished Ebony	6,758	6,758
Monique	49		Polished Ebony	7,432	7,432
Louis	49		Polished Ebony	6,888	6,888
Titus	49		Polished Ebony	8,146	8,146
Alexa	49		Polished Ebony	8,800	8,800
Hugo	49		Polished Ebony	9,304	9,304
Paolo	49		Polished Ebony	9,802	9,802
Professional Edition Verticals					
P116E	46		Polished Ebony	8,388	8,388
P116E	46		Satin Mahogany/Walnut/Cherry	8,388	8,388
P116E	46		Polished Mahogany/Walnut/Cherry	8,522	8,522
P116E	46		Satin and Polished Bubinga	9,452	9,452
P122E	48		Polished Ebony	8,926	8,926
P122E	48		Satin Mahogany/Walnut/Cherry	8,924	8,924
P122E	48		Polished Mahogany/Walnut/Cherry	9,060	9,060
P122E	48		Satin and Polished Bubinga	9,968	9,968
P132E	52		Polished Ebony	9,998	9,998
P132E	52		Satin Mahogany/Walnut/Cherry	10,536	10,536
P132E	52		Polished Mahogany/Walnut/Cherry	11,076	11,076
P132E	52		Satin and Polished Bubinga	11,954	11,954
Studio Edition Grands					
F142	4	8	Polished Ebony	16,060	16,060
F142	4	8	Polished Mahogany/Walnut/White	16,856	16,856
F160	5	3	Polished Ebony	18,900	18,900
F160	5	3	Polished Mahogany/Walnut	19,748	19,748
F160	5	3	Polished White	19,594	19,594
F188	6	2	Polished Ebony	27,026	27,026
F188	6	2	Polished Mahogany/Walnut	27,788	27,788
F188	6	2	Polished White	27,704	27,704
F213	7		Polished Ebony	32,436	32,436
F213	7		Polished White	33,660	33,660

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
IRMLER (continued)					
Professional Edition Grands					
F160E	5	3	Polished Ebony	35,270	35,270
F160E	5	3	Satin Mahogany/Walnut/Cherry	35,270	35,270
F160E	5	3	Polished Mahogany/Walnut/Cherry	36,990	36,990
F160E	5	3	Satin and Polished Bubinga	40,048	40,048
F175E	5	9	Polished Ebony	37,850	37,850
F175E	5	9	Satin Mahogany/Walnut/Cherry	37,850	37,850
F175E	5	9	Polished Mahogany/Walnut/Cherry	39,784	39,784
F175E	5	9	Satin and Polished Bubinga	43,074	43,074
F190E	6	3	Polished Ebony	40,432	40,432
F190E	6	3	Satin Mahogany/Walnut/Cherry	40,432	40,432
F190E	6	3	Polished Mahogany/Walnut/Cherry	42,368	42,368
F190E	6	3	Satin and Polished Bubinga	45,032	45,032
F210E	6	10.5	Polished Ebony	49,892	49,892
F210E	6	10.5	Satin Mahogany/Walnut/Cherry	49,892	49,892
F210E	6	10.5	Polished Mahogany/Walnut/Cherry	52,258	52,258
F210E	6	10.5	Satin and Polished Bubinga	54,922	54,922
F230E	7	6.5	Polished Ebony	59,356	59,356

KAWAI

Verticals

K-15	44		Continental Polished Ebony	4,495	4,495
K-15	44		Continental Polished Mahogany	4,695	4,695
506N	44.5		Satin Ebony/Mahogany/Oak	4,695	4,695
508	44.5		Satin Mahogany	5,495	5,390
607	44.5		Satin American Oak	5,995	5,790
607	44.5		French Provincial Satin Cherry	6,195	5,990
607	44.5		Queen Anne Satin Mahogany	6,195	5,990
K-2	45		Satin and Polished Ebony	5,995	5,790
K-2	45		Satin and Polished Mahogany	6,695	6,390
K-2	45		French Provincial Polished Mahogany	7,195	6,790
SI-15	45		FINO Modern Satin Walnut	11,495	10,190
UST-9	46		Satin Ebony/Oak/Walnut/Cherry	7,495	6,990
907N	46.5		English Regency Satin Mahogany	9,495	8,590
907N	46.5		French Provincial Satin Cherry	9,495	8,590
SI-16	47		FINO Traditional European Polished Cherry	12,195	11,590
SI-17	47		FINO Demi-Chippendale Polished Mahogany	15,195	13,790
K-3	48		Satin and Polished Ebony	8,495	7,790
K-3	48		Satin and Polished Mahogany	9,195	8,390
K-3	48		Polished Snow White	8,995	8,190
K-3	48		French Provincial Polished Mahogany	9,495	8,690
K-5	49		Satin and Polished Ebony	11,195	9,990
K-5	49		Polished Sapele Mahogany	12,695	11,190
K-5	49		French Provincial Polished Mahogany	12,995	11,390
K-6	52		Polished Ebony	15,195	13,190
K-8	52		Satin and Polished Ebony	18,195	15,590

Grands

GM-10K	5		Satin and Polished Ebony	13,695	11,990
GM-10K	5		Satin and Polished Mahogany	14,995	12,990
GM-10K	5		French Provincial Polished Mahogany	16,195	13,990
GM-12	5		Satin and Polished Ebony	16,995	14,590
GM-12	5		Polished Mahogany/Snow White	18,495	15,790
GE-20	5	1	Satin and Polished Ebony	19,995	16,990
GE-20	5	1	Satin Walnut	21,995	18,590
GE-20	5	1	Polished Mahogany/Sapele Mahogany	22,195	18,790
GE-20	5	1	French Provincial Polished Mahogany	24,195	20,390

*See pricing explanation on page 213.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
KAWAI (continued)					
GE-30	5	5	Satin and Polished Ebony	22,195	18,790
GE-30	5	5	Polished Walnut/Sapele Mahogany	24,995	20,990
GE-30	5	5	Satin Walnut	24,495	20,590
GE-30	5	5	Polished Snow White	23,995	20,190
RX-1BLK	5	5	Satin and Polished Ebony	28,995	24,190
RX-1BLK	5	5	Satin Walnut	32,695	27,190
RX-1BLK	5	5	Polished Walnut/Sapele Mahogany	33,695	27,990
RX-1BLK	5	5	Polished Snow White	32,695	27,190
RX-2BLK	5	10	Satin and Polished Ebony	32,995	27,390
RX-2BLK	5	10	Satin Mahogany/Walnut/Cherry/Oak	37,195	30,790
RX-2BLK	5	10	Polished Walnut/Sapele Mahogany	38,495	31,790
RX-2BLK	5	10	Polished Rosewood	42,995	35,390
RX-2BLK	5	10	Polished Snow White	35,695	29,590
RX-2BLK	5	10	French Provincial Polished Mahogany	42,995	35,390
RX-3BLK	6	1	Satin and Polished Ebony	42,995	35,390
CR40N	6	1	Plexiglass	174,495	140,990
RX-5BLK	6	6	Satin and Polished Ebony	48,695	39,990
RX-6BLK	7		Satin and Polished Ebony	54,495	44,590
RX-7BLK	7	6	Satin and Polished Ebony	62,995	51,390
EXG	9	1	Polished Ebony	152,195	122,790

KAWAI, SHIGERU

Grands

SK-2	5	10	Polished Ebony	48,195	39,600
SK-2	5	10	Polished Sapele Mahogany	50,795	41,600
SK-2	5	10	Polished Mahogany	57,495	47,000
SK-2	5	10	"Classic Noblesse" w/Burl Walnut Inlay	74,195	60,400
SK-3	6	1	Polished Ebony	56,295	46,000
SK-3	6	1	Polished Sapele Mahogany	59,595	48,600
SK-5	6	6	Polished Ebony	64,795	52,800
SK-5	6	6	Polished Sapele Mahogany	68,795	56,000
SK-6	7		Polished Ebony	72,995	59,400
SK-7	7	6	Polished Ebony	80,995	65,800
SK-7	7	6	Polished Pyramid Mahogany	122,995	99,000
SK-7	7	6	"Classic Noblesse" w/Burl Walnut Inlay	111,595	90,200
SK-EX	9		Polished Ebony	188,995	152,200

KEMBLE

Verticals

Classic-T	45		Polished Ebony	9,990	9,990
Classic-T	45		Satin Mocha Oak	9,900	9,900
Empire	46.5		Empire Polished Mahogany	12,390	12,390
Prestige	46.5		Satin Cherry with Yew Inlay	12,390	12,390
Empire	48		Empire Polished Mahogany	12,790	12,790
Prestige	48		Satin Cherry with Yew Inlay	12,790	12,790
CT121	48		Polished Ebony	11,890	11,890
CT121	48		Polished Ebony with Chrome	12,190	12,190
K121CL	48		Polished Ebony/Mahogany	11,190	11,190
K121CL	48		Satin American Walnut	10,990	10,990
K121CLM	48		"Mozart" Polished Ebony with Oval	12,590	12,590
K121CLM	48		"Mozart" Polished Mahogany with Inlay	12,590	12,590
Vermont	48		Satin Cherry/Mocha Oak	13,990	13,990
Chopin	48		Polished Ebony w/Burr Walnut Accents	13,590	13,590
Chopin	48		Polished Mahogany/Walnut w/Inlay	13,590	13,590
Conservatoire	49		Polished Ebony	12,190	12,190

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
KEMBLE (continued)					
Conservatoire	49		Satin American Walnut	11,990	11,990
K132SN	52		Polished Ebony/Mahogany	15,990	15,990
Grands					
KC173	5	8	Polished Ebony	30,990	30,990

KIMBALL

Verticals

K44	44		French Provincial Cherry/Oak	7,900	7,590
A49	49		Polished Ebony	11,900	10,990

Grands

K1	5	1	Polished Ebony	14,300	12,990
K1	5	1	Polished Mahogany	14,800	13,790
A2	5	8	Polished Ebony	32,500	30,800
K3	6	2	Polished Ebony	17,300	15,990

KNABE, WM.

Verticals

WKV-118F	46.5		French Provincial Lacquer Semigloss Cherry	8,400	8,550
WKV-118R	46.5		Renaissance Lacquer Polished Ebony	8,800	8,550
WKV-118R	46.5		Renaissance Lacquer Semigloss Walnut	8,800	8,550
WKV-118R	46.5		Renaissance Lacquer Satin American Oak	8,800	8,550
WKV-118T	46.5		Lacquer Semigloss Mahogany	8,800	8,550
WKV-121	48		Satin Ebony	9,300	8,990
WKV-121	48		Polished Ebony	8,700	8,550
WKV-121	48		Polished Mahogany	10,100	9,390
WKV-131	52		Satin Ebony	10,100	9,390
WKV-131	52		Polished Ebony	9,700	8,990
WKV-131	52		Polished Mahogany	11,100	9,790

Grands

WKG-53	5	3	Satin Ebony	21,400	18,120
WKG-53	5	3	Polished Ebony	20,800	17,640
WKG-53	5	3	Lacquer Semigloss Wood Finishes	22,900	19,320
WKG-53	5	3	Polished Mahogany/Ivory/White	22,400	18,920
WKG-53	5	3	Polished Bubinga/Pommele	23,300	19,640
WKG-53B	5	3	Satin Ebony	21,400	18,120
WKG-53B	5	3	Polished Ebony	20,800	17,640
WKG-58 (US)	5	8	Satin Ebony	27,500	23,000
WKG-58 (US)	5	8	Polished Ebony	26,800	22,440
WKG-58	5	8	Satin Ebony	25,000	21,000
WKG-58	5	8	Polished Ebony	24,300	20,440
WKG-58	5	8	Lacquer Semigloss Wood Finishes	26,400	22,120
WKG-58	5	8	Polished Mahogany/Ivory/White	25,800	21,640
WKG-58	5	8	Polished Bubinga/Pommele	27,000	22,600
WKG-58A	5	8	"170th Anniv." Satin Ebony	31,600	26,280
WKG-58A	5	8	"170th Anniv." Lacquer Semigloss Walnut	31,600	26,280
WKG-58F	5	8	French Provincial Satin Ebony	28,400	23,720
WKG-58F	5	8	French Provincial Polished Ebony	27,800	23,240
WKG-58F	5	8	French Provincial Lacquer Semigloss Woods	29,800	24,840
WKG-58F	5	8	French Provincial Polished Mahogany/Ivory/White	29,200	24,360
WKG-58M	5	8	Empire Satin Ebony	25,700	21,560
WKG-58M	5	8	Empire Polished Ebony	25,000	21,000
WKG-58M	5	8	Empire Lacquer Semigloss Wood Finishes	27,200	22,760
WKG-58M	5	8	Empire Polished Mahogany/Ivory/White	26,700	22,360
WKG-58M	5	8	Empire Polished Bubinga/Pommele	27,800	23,240

*See pricing explanation on page 213.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
KNABE, WM. (continued)					
WKG-64 (US)	6	4	Satin Ebony	33,400	27,720
WKG-64 (US)	6	4	Polished Ebony	32,600	27,080
WKG-64	6	4	Lacquer Semigloss Wood Finishes	31,800	26,440
WKG-64	6	4	Polished Mahogany/Ivory/White	31,400	26,120
WKG-70 (US)	7		Satin Ebony	42,400	34,920
WKG-70 (US)	7		Polished Ebony	41,600	34,280
WKG-70	7		Lacquer Semigloss Wood Finishes	43,800	36,040
WKG-76 (US)	7	6	Satin Ebony	43,800	36,040
WKG-76 (US)	7	6	Polished Ebony	42,400	34,920

KOHLER & CAMPBELL

New Yorker Series Verticals

KC-142	42		Continental Polished Ebony	3,490	3,490
KC-142	42		Continental Satin Cherry/Walnut	3,490	3,490
KC-142	42		Continental Polished Mahogany/Walnut/Ivory	3,590	3,590
KC-243F	43		French Provincial Satin Cherry	4,590	4,590
KC-243M	43		Mediterranean Satin Brown Oak	4,590	4,590
KC-243T	43		Satin Mahogany/Walnut	4,590	4,590
KC-118C	46.5		Polished Ebony	4,390	4,390
KC-118C	46.5		Polished Mahogany/Walnut	4,590	4,590

Millenium Series Verticals

KM-245	45		Polished Ebony	4,190	4,190
KM-245	45		Satin Cherry/Walnut	4,190	4,190
KM-245	45		Polished Mahogany/Walnut/Ivory	4,290	4,290
KM-247	46.5		Satin and Polished Ebony	6,290	5,550
KM-247	46.5		Satin Mahogany/Walnut	6,290	5,550
KM-247	46.5		Polished Mahogany/Walnut	6,390	5,670
KM-647F	46.5		French Provincial Satin Cherry	5,690	5,250
KM-647R	46.5		Renaissance Satin Walnut	5,690	5,250
KM-647T	46.5		Satin Mahogany	5,690	5,250
KM-121M/F	48		Satin Ebony	4,950	4,950
KM-121M/F	48		Polished Ebony	4,790	4,790
KM-121M/F	48		Polished Mahogany	4,950	4,950
KMV-48SD	48		Satin Ebony	9,300	8,790
KMV-48SD	48		Polished Ebony	8,900	8,190
KMV-48SD	48		Polished Mahogany	10,400	9,390
KM-131	52		Polished Ebony	5,590	5,590
KM-131	52		Polished Mahogany	5,790	5,790
KMV-52MD	52		Satin Ebony	10,400	9,590
KMV-52MD	52		Polished Ebony	10,000	8,990
KMV-52MD	52		Polished Mahogany	11,800	10,390

New Yorker Series Grands

KIG-48	4	8	Satin Ebony/Mahogany/Walnut	10,490	9,100
KIG-48	4	8	Polished Ebony	9,790	8,550
KIG-48	4	8	Satin and Polished Mahogany/Walnut	10,490	9,100
KCG-450	4	9	Satin Ebony	11,390	9,790
KCG-450	4	9	Polished Ebony	10,490	9,190
KCG-450	4	9	Polished Mahogany/Walnut	11,390	9,790
KCG-450KAF	4	9	Queen Anne Lacquer Semigloss Cherry	13,850	11,900
KCG-450KAF	4	9	Queen Anne Polished Mahogany	13,850	11,900
KCG-450KBF	4	9	French Provincial Lacquer Semigloss Cherry	14,690	12,540
KCG-450KBF	4	9	French Provincial Polished Mahogany	14,690	12,540
KIG-50	5		Satin Ebony/Mahogany/Walnut	11,190	9,860
KIG-50	5		Polished Ebony	10,590	9,190
KIG-50	5		Polished Mahogany/Walnut	11,190	9,860
KCG-500	5	1.5	Satin Ebony	12,590	10,860

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
KOHLER & CAMPBELL (continued)					
KCG-500	5	1.5	Polished Ebony	11,900	10,230
KCG-500	5	1.5	Satin and Polished Mahogany/Walnut	12,590	10,860
KCG-500KAF	5	1.5	Queen Anne Lacquer Semigloss Cherry	15,100	12,850
KCG-500KAF	5	1.5	Queen Anne Polished Mahogany	15,100	12,850
KCG-500KBF	5	1.5	French Provincial Lacquer Semigloss Cherry	15,790	13,390
KCG-500KBF	5	1.5	French Provincial Polished Mahogany	15,790	13,390
KIG-54	5	4	Satin Ebony/Mahogany/Walnut	12,290	10,690
KIG-54	5	4	Polished Ebony	11,690	10,020
KIG-54	5	4	Polished Mahogany/Walnut	12,290	10,690
KIG-54	5	4	Polished Bubinga/Pommele	12,590	10,920
KIG-59	5	9	Satin Ebony	12,990	11,130
KIG-59	5	9	Polished Ebony	12,390	10,660
KIG-59	5	9	Polished Mahogany	12,990	11,130
KIG-600	5	9	Satin Ebony	13,090	12,100
KIG-600	5	9	Polished Ebony	12,390	11,430
KIG-600	5	9	Lacquer Semigloss Mahogany/Walnut	13,090	12,100
KIG-600	5	9	Polished Mahogany/Walnut	13,090	12,100
KIG-600SKAF	5	9	Louis XV Lacquer Semigloss Cherry/Dark Walnut	17,290	15,690
KCG-600	5	9	Satin Ebony	14,590	12,350
KCG-600	5	9	Polished Ebony	13,690	11,700
KCG-600	5	9	Lacquer Semigloss Mahogany/Walnut	14,590	12,350
KCG-600	5	9	Polished Mahogany/Walnut	14,590	12,350
KCG-600KBF	5	9	French Provincial Lacquer Semigloss Cherry	17,100	14,450
KCG-600SKAF	5	9	Louis XV Lacquer Semigloss Cherry/Dark Walnut	18,300	15,700
KCG-600L	5	9	Empire Polished Ebony	15,590	13,390
KIG-650	6	1	Satin Ebony	14,490	13,430
KIG-650	6	1	Polished Ebony	13,590	12,770
KIG-650	6	1	Lacquer Semigloss Mahogany/Walnut	14,490	13,430
KIG-650	6	1	Polished Mahogany/Walnut	14,490	13,430
KCG-650	6	1	Satin Ebony	15,990	13,390
KCG-650	6	1	Polished Ebony	14,990	12,790
KCG-650	6	1	Lacquer Semigloss Mahogany/Walnut	15,990	13,390
KCG-650	6	1	Polished Mahogany/Walnut	15,990	13,390
Millenium Series Grands					
KCM-500	5	1.5	Satin Ebony	14,990	12,550
KCM-500	5	1.5	Polished Ebony	14,190	11,880
KCM-500	5	1.5	Lacquer Semigloss Mahogany/Walnut	15,190	12,700
KCM-500	5	1.5	Polished Mahogany/Walnut	15,190	12,700
KCM-600	5	9	Satin Ebony	16,300	14,000
KCM-600	5	9	Polished Ebony	15,390	13,170
KCM-600	5	9	Lacquer Semigloss Mahogany/Walnut	16,300	14,000
KCM-600	5	9	Polished Mahogany/Walnut	16,300	14,000
KCM-600 KBF	5	9	French Provincial Lacquer Semigloss Cherry	18,700	15,700
KCM-600SKAF	5	9	Louis XV Lacquer Semigloss Cherry/Dark Walnut	19,500	16,330
KCM-650	6	1	Satin Ebony	17,390	15,000
KCM-650	6	1	Polished Ebony	16,500	14,220
KCM-650	6	1	Lacquer Semigloss Mahogany/Walnut	17,390	15,000
KCM-650	6	1	Polished Mahogany/Walnut	17,390	15,000
KFM-700 (Indo)	6	10	Satin Ebony	23,000	19,400
KFM-700 (Indo)	6	10	Polished Ebony	22,000	18,600
KFM-700	6	10	Polished Ebony	34,000	29,630
KFM-850	7	6	Polished Ebony	37,000	32,000

*See pricing explanation on page 213.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
MASON & HAMLIN					
Verticals					
50	50		Satin and Polished Ebony	21,098	17,878
50	50		Satin Mahogany	21,460	18,168
Grands					
B	5	4	Satin Ebony	46,969	38,575
B	5	4	Polished Ebony	49,735	40,788
B	5	4	Satin Mahogany/Walnut	50,198	41,158
B	5	4	Polished Pyramid Mahogany	57,308	46,846
B	5	4	Satin Rosewood	52,675	43,140
B	5	4	Polished Bubinga	54,621	44,697
B	5	4	Satin Macassar Ebony	56,117	45,894
B	5	4	Polished Macassar Ebony	57,308	46,846
A	5	8	Satin Ebony	53,590	43,872
A	5	8	Polished Ebony	57,308	46,846
A	5	8	Satin Mahogany/Walnut	57,621	47,097
A	5	8	Polished Pyramid Mahogany	70,045	57,036
A	5	8	Satin Rosewood	63,957	52,166
A	5	8	Polished Bubinga	66,195	53,956
A	5	8	Satin Macassar Ebony	67,675	55,140
A	5	8	Polished Macassar Ebony	70,045	57,036
A	5	8	"Monticello" Polished Ebony	61,050	49,840
A	5	8	"Monticello" Satin Mahogany	61,341	50,073
A	5	8	"Monticello" Satin Walnut/Rosewood	74,363	60,490
AA	6	4	Satin Ebony	61,832	50,466
AA	6	4	Polished Ebony	64,223	52,378
AA	6	4	Satin Mahogany/Walnut	65,087	53,070
AA	6	4	Polished Pyramid Mahogany	74,770	60,816
AA	6	4	Satin Rosewood	68,682	55,946
AA	6	4	Polished Bubinga	70,920	57,736
AA	6	4	Satin Macassar Ebony	72,400	58,920
AA	6	4	Polished Macassar Ebony	74,770	60,816
AA	6	4	"Monticello" Polished Ebony	68,290	55,632
AA	6	4	"Monticello" Satin Mahogany	68,807	56,046
AA	6	4	"Monticello" Satin Walnut/Rosewood	83,987	68,190
BB	7		Satin Ebony	70,073	57,058
BB	7		Polished Ebony	72,090	58,672
BB	7		Satin Mahogany/Walnut	72,555	59,044
BB	7		Polished Pyramid Mahogany	86,385	70,108
BB	7		Satin Rosewood	81,220	65,976
BB	7		Polished Bubinga	83,235	67,588
BB	7		Satin Macassar Ebony	84,293	68,434
BB	7		Polished Macassar Ebony	86,385	70,108
BB	7		"Monticello" Polished Ebony	75,351	61,281
BB	7		"Monticello" Satin Mahogany	76,275	62,020
BB	7		"Monticello" Satin Walnut/Rosewood	93,608	75,886
CC	9	4	Satin Ebony	104,185	84,348
CC	9	4	Polished Ebony	108,910	88,128
CC	9	4	Satin Mahogany/Walnut	111,518	90,214
CC	9	4	Polished Pyramid Mahogany	126,960	102,568
CC	9	4	Satin Rosewood	117,857	95,286
CC	9	4	Polished Bubinga	121,806	98,445
CC	9	4	Satin Macassar Ebony	124,935	100,948
CC	9	4	Polished Macassar Ebony	126,960	102,568
All Models			Chrome Art Case, add'l	4,000	
All Models			Composite Action, add'l	1,200	

*See pricing explanation on page 213.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
MAY BERLIN					
Verticals					
M 114 T	45		Polished Ebony	5,490	5,490
M 121 M	47.5		Continental Polished Ebony	5,890	5,890
M 121 T	47.5		Polished Ebony	5,690	5,690
M 121 T	47.5		Satin Beech/Cherry/Walnut	5,690	6,180
M 121 T	47.5		Polished White	5,690	6,180
M 126 N	49.5		"Noblesse" Polished Ebony	6,190	6,190
Grands					
M 162 T	5	4	Polished Ebony	16,490	15,980
M 187 T	6	2	Polished Ebony	18,890	18,180

MILLER, HENRY F.

Verticals					
HMV-043	42.5		Continental Polished Ebony	3,698	3,698
HMV-043	42.5		Continental Polished Mahogany	3,749	3,749
HMV-046	45.5		Satin Ebony/Walnut	4,799	4,799
HMV-047	46.5		Satin Ebony	4,399	4,399
HMV-047	46.5		Polished Ebony	4,099	4,099
HMV-047	46.5		Polished Mahogany	4,599	4,599
HMV-048	48		Satin Cherry	5,049	5,049
HMV-048	48		French Provincial Satin Cherry	5,049	5,049
HMV-52	52		Polished Ebony	6,499	6,499
Grands					
HMG-058S	4	10	Satin Ebony	10,349	10,349
HMG-058S	4	10	Polished Ebony	9,949	9,949
HMG-058S	4	10	Polished Mahogany	10,349	10,349
HMG-058S	4	10	French Provincial Satin Cherry	11,049	11,049
HMG-064S	5	4	Satin Ebony	12,499	12,499
HMG-064S	5	4	Polished Ebony	12,099	12,099
HMG-064S	5	4	Polished Mahogany	12,499	12,499
HMG-067S	5	7	Satin Ebony	14,999	14,999
HMG-067S	5	7	Polished Ebony	14,699	14,699
HMG-067S	5	7	Polished Mahogany	14,999	14,999
HMG-074S	6	2	Polished Ebony	16,749	16,749

PALATINO

Verticals					
PUP-110TS	43.5		Polished Ebony	4,990	4,990
PUP-115T/F	45		Polished Ebony	5,180	5,180
PUP-123C-JH/SXH	48.5		French Satin Ebony/Brown Mahogany/White	6,380	6,380
PUP-123F	48.5		French Polished Ebony	6,100	6,100
PUP-123F	48.5		French Polished Mahogany/White	6,300	6,300
PUP-123T	48.5		Satin Ebony	6,300	6,300
PUP-123T	48.5		Polished Ebony	6,100	6,100
PUP-123T	48.5		Satin Brown Mahogany	6,300	6,300
PUP-123T	48.5		Polished Mahogany/Walnut/White	6,300	6,300
PUP-123TU-A/AR	48.5		Polished Ebony w/Decorated Wood Panel	7,190	7,190
PUP-123Y	48.5		Polished Ebony	6,100	6,100
PUP-123Y	48.5		Polished Mahogany/White	6,300	6,300
PUP-124	49		Polished Ebony (w/Butterfly Lid)	7,190	7,190
PUP-124T1	49		Polished Ebony	6,450	6,450
PUP-124T2	49		Polished Ebony	6,450	6,450
PUP-126C	50		Polished Ebony	6,560	6,560
PUP-126T	50		Polished Ebony	6,760	6,760

*See pricing explanation on page 213.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
PALATINO (continued)					
PUP-126TU	50		Polished Ebony	6,800	6,800
PUP-132TU	52		Polished Ebony	8,950	8,950
Grands					
PGD-46T	4	6	Satin Ebony	11,780	11,780
PGD-46T	4	6	Polished Ebony	11,380	11,380
PGD-46T	4	6	Polished Brown Mahogany/White	11,780	11,780
PGD-50T	5		Satin Ebony	12,100	12,100
PGD-50T	5		Polished Ebony	11,700	11,700
PGD-50T	5		Polished Brown Mahogany/White	12,100	12,100
PGD-59T	5	9	Satin Ebony	15,380	15,380
PGD-59T	5	9	Polished Ebony	14,980	14,980
PGD-59T	5	9	Polished Brown Mahogany	15,380	15,380
PGD-62T	6	2	Polished Ebony	20,800	20,800
PGD-62TR	6	2	Polished Ebony (w/Renner action)	30,500	30,500
PGD-72T	7	2	Polished Ebony	26,000	26,000
PGD-90T	9		Polished Ebony	98,980	98,980

PEARL RIVER

Verticals

UP-108D3	42.5		Continental Polished Ebony	3,697	3,340
UP-108D3	42.5		Continental Polished Mahogany/Walnut	3,896	3,540
UP-108D3	42.5		Continental Polished White	3,896	3,540
UP-108M2	42.5		Chippendale Polished Ebony	4,147	3,680
UP-108M2	42.5		Chippendale Polished Mahogany	4,412	3,880
UP-108T2	42.5		Satin and Polished Ebony	3,797	3,416
UP-108T2	42.5		Polished Mahogany/Walnut	4,062	3,616
UP-108T2	42.5		Polished White	4,062	3,616
UP-110P1	43		Satin Walnut	3,829	3,440
UP-110P2	43		French Provincial Satin Cherry	4,518	4,160
UP-110P5	43		American Traditional Satin Walnut/Cherry	4,518	4,160
UP-110P6	43		French Provincial Satin Cherry	4,942	4,480
UP-110P8	43		French Provincial Satin Cherry	4,490	4,390
UP-110P9	43		Satin Walnut (fluted round leg)	4,490	4,390
UP-115E	45		Satin Ebony/Oak/Walnut	4,508	4,152
UP-115M	45		Polished Ebony	4,235	3,946
UP-115M	45		Polished Dark Mahogany	4,700	4,346
UP-115M2	45		Polished Ebony	4,235	4,235
UP-115M2	45		Polished Dark Mahogany	4,500	4,146
UP-115P1	45		Satin Walnut	5,340	4,780
UP-115P1	45		Satin Cherry	4,758	4,340
T1	46		Polished Ebony	4,755	4,590
T1	46		Polished Mahogany	4,945	4,730
UP-118E	46.5		Polished Ebony	4,546	4,180
UP-118E	46.5		Polished Mahogany/Walnut	4,810	4,380
T2	47.25		Polished Ebony	5,125	4,870
T2	47.25		Polished Walnut	5,285	4,990
UP-120S	48		Polished Ebony	5,154	4,640
UP-120S	48		Polished Mahogany	5,419	4,840
T3	48		Polished Ebony	5,495	5,150
UP-130T	51.5		Polished Ebony	5,893	5,198
UP-130T2	51.5		Polished Mahogany w/Burl Oval Inlay	6,928	5,980

*See pricing explanation on page 213.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
PEARL RIVER (continued)					
Grands					
GP-142	4	7	Polished Ebony	8,997	7,390
GP-142	4	7	Polished Mahogany	9,526	7,790
GP-142D	4	7	French Provincial Satin Cherry	10,322	8,390
GP-142P1	4	7	Satin Walnut	10,852	8,790
GP-150	4	11	Hand-rubbed Satin Ebony	11,117	8,190
GP-150	4	11	Polished Ebony	10,321	7,790
GP-150	4	11	Polished Mahogany/Walnut/White	11,117	8,190
GP-150	4	11	Satin Cherry	11,117	8,190
GP-150D	4	11	French Provincial Satin Walnut	11,912	8,790
GP-159	5	3	Hand-rubbed Satin Ebony	12,309	9,290
GP-159	5	3	Polished Ebony	11,912	8,990
GP-159	5	3	Polished Mahogany	12,309	9,390
GP-159H	5	3	French Provincial Satin Walnut	13,833	10,440
GP-160A	5	3	European Renaissance Polished Ebony	11,910	9,990
GP-170	5	7	Hand-rubbed Satin Ebony	14,429	11,290
GP-170	5	7	Polished Ebony	14,031	10,990
GP-170	5	7	Polished Mahogany	14,561	11,390
GP-170D	5	7	French Provincial Satin Cherry	14,827	11,590
GP-183	6		Polished Ebony	15,357	11,990
GP-186	6	1	Eurostyle Polished Ebony w/Silver Plate & Trim	15,992	12,990
GP-188	6	2	Polished Ebony	20,921	15,990
GP-198	6	5	Butterfly Lid Satin Blue & Pink/Silver	35,762	26,990
GP-213	7		Polished Ebony	23,055	17,400
GP-275	9		Polished Ebony	75,246	56,990
GP-275F	9		Polished Ebony	76,996	58,110

PERZINA, GEBR.

Verticals

GP-112	44		Polished Ebony	6,120	6,120
GP-112	44		Polished Mahogany/Walnut/Oak/White	6,350	6,350
GP-112	44		Satin Finishes	6,350	6,350
GP-112	44		Queen Anne Polished Ebony	6,220	6,220
GP-112	44		Queen Anne Polished Mahogany/Walnut	6,450	6,450
GP-112	44		Queen Anne Satin Walnut	6,450	6,450
GP-112	44		Queen Anne Polished Ebony (with molding)	6,320	6,320
GP-112	44		Queen Anne Polished Mahogany/Walnut (with molding)	6,550	6,550
GP-112	44		Queen Anne Satin Walnut (with molding)	6,550	6,550
GP-122	48		Polished Ebony	7,330	7,330
GP-122	48		Polished Ebony with Pommele Center	7,490	7,490
GP-122	48		Polished Mahogany/Walnut/Oak/White	7,660	7,660
GP-122	48		Satin Finishes	7,660	7,660
GP-122	48		Deco Leg Polished Ebony	7,460	7,460
GP-122	48		Deco Leg Polished "two-tone" Ebony w/Oak Trim	7,730	7,730
GP-122	48		Deco Leg Polished Mahogany/Oak/White	7,890	7,890
GP-122	48		Deco Leg Polished "two-tone" Ebony w/Bubinga or Pommele Front	8,020	8,020
GP-122	48		Deco Leg Polished Bubinga	8,220	8,220
GP-122	48		Queen Anne Polished Ebony	7,460	7,460
GP-122	48		Queen Anne Polished Mahogany/Walnut	7,890	7,890
GP-122	48		Queen Anne Satin Walnut	7,890	7,890
GP-122	48		Queen Anne Polished Ebony w/Molding	7,660	7,660
GP-122	48		Queen Anne Polished Mahogany/Walnut w/Molding	8,020	8,020
GP-122	48		Queen Anne Satin Walnut w/Molding	8,020	8,020
GP-122R	48		GP-122 with Renner AA Hammers, add	600	600
GP-129	51		Polished Ebony	8,260	8,260
GP-129	51		Polished Ebony w/Pommele Center	8,420	8,420

*See pricing explanation on page 213.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
PERZINA, GEBR. (continued)					
GP-129	51		Polished Mahogany/Walnut/Oak/White	8,590	8,590
GP-129	51		Satin Finishes	8,590	8,590
GP-129	51		Deco Leg Polished Ebony	8,420	8,420
GP-129	51		Deco Leg Polished "two-tone" Ebony w/Oak Trim	8,690	8,690
GP-129	51		Deco Leg Polished Mahogany/Oak/White	8,860	8,860
GP-129	51		Deco Leg Polished "two-tone" Ebony w/Bubinga or Pommele Front	8,990	8,990
GP-129	51		Queen Anne Polished Ebony	8,420	8,420
GP-129	51		Queen Anne Polished Mahogany/Walnut	8,860	8,860
GP-129	51		Queen Anne Satin Walnut	8,860	8,860
GP-129	51		Queen Anne Polished Mahogany/Walnut w/Molding	8,990	8,990
GP-129	51		Queen Anne Satin Walnut w/Molding	8,990	8,990
GP-129R	51		GP-129 with Renner AA Hammers, add	550	550
GP-130R	51		Satin Ebony	10,090	10,090
GP-130R	51		Polished Ebony	9,730	9,730
GP-130R	51		Polished Mahogany/Walnut	10,090	10,090
Grands					
GX-152	5		Polished Ebony	13,300	13,300
GX-152	5		Polished Mahogany/Walnut/Oak/White	13,990	13,990
GX-152	5		Satin Finishes	13,990	13,990
GX-152	5		Polished Ebony (round leg)	13,690	13,690
GX-152	5		Satin and Polished Mahogany/Walnut (round leg)	14,360	14,360
GX-152	5		Queen Anne Polished Ebony	13,690	13,690
GX-152	5		Queen Anne Satin and Polished Mahogany/Walnut	14,360	14,360
GX-152	5		Designer Polished Ebony w/Bubinga Fallboard/Lid	14,790	14,790
GX-152	5		Designer Polished Ebony w/Sapele Fallboard/Lid	14,790	14,790
GX-152	5		Designer Polished Ebony w/Bubinga Legs/Fallboard/Desk	15,690	15,690
GX-160	5	3	Polished Ebony	18,260	18,260
GX-160	5	3	Polished Mahogany/Walnut/Oak/White	18,890	18,890
GX-160	5	3	Satin Finishes	18,890	18,890
GX-160	5	3	Polished Ebony (round leg)	18,590	18,590
GX-160	5	3	Satin and Polished Mahogany/Walnut (round leg)	19,190	19,190
GX-160	5	3	Queen Anne Polished Ebony	18,590	18,590
GX-160	5	3	Queen Anne Satin and Polished Mahogany/Walnut	19,190	19,190
GX-160	5	3	Designer Polished Ebony w/Sapele Fallboard/Lid	19,660	19,660
GX-160	5	3	Designer Polished Ebony w/Bubinga Fallboard/Lid	19,660	19,660
GX-160	5	3	Designer Polished Ebony w/Bubinga Legs/Fallboard/Desk	20,690	20,690
GX-160	5	3	Designer Satin Bubinga	20,950	20,950
GT-160	5	3	Premium Series, add to GX-160 approx.	2,000	2,000
DT-160	5	3	Premium Series, add to GX-160 approx.	3,500	3,500
ET-160	5	3	Ultimate Series, add to GX-160 approx.	9,000	9,000
GX-187	6	1	Polished Ebony	20,240	20,240
GX-187	6	1	Polished Mahogany/Walnut/Oak/White	21,150	21,150
GX-187	6	1	Satin Finishes	21,150	21,150
GX-187	6	1	Polished Ebony (round leg)	20,520	20,520
GX-187	6	1	Satin and Polished Mahogany/Walnut (round leg)	21,480	21,480
GX-187	6	1	Queen Anne Polished Ebony	20,520	20,520
GX-187	6	1	Queen Anne Satin and Polished Mahogany/Walnut	21,480	21,480
GX-187	6	1	Designer Polished Ebony w/Sapele Fallboard/Lid	21,790	21,790
GX-187	6	1	Designer Polished Ebony w/Bubinga Fallboard/Lid	21,790	21,790
GX-187	6	1	Designer Polished Ebony w/Bubinga Legs/Fallboard/Desk	22,920	22,920
GX-187	6	1	Designer Satin Bubinga	23,550	23,550
GT-187	6	1	Premium Series, add to GX-187 approx.	2,000	2,000
DT-187	6	1	Premium Series, add to GX-187 approx.	4,000	4,000
ET-187	6	1	Ultimate Series, add to GX-187 approx.	10,000	10,000

*See pricing explanation on page 213.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
PETROF					
Verticals					
P 116 E1	45.75		Continental Polished Ebony	15,438	13,350
P 118 C1	46.25		Chippendale Satin/Polished Ebony/Mahogany/Walnut	19,063	16,250
P 118 D1	46.25		Demi-Chippendale Satin/Polished Ebony/Mahogany/Walnut/Cherry	18,850	16,080
P 118 G1	46.25		Satin/Polished Ebony/Mahogany/Walnut	18,263	15,610
P 118 M1	46.25		Satin/Polished Ebony/Mahogany/Walnut	17,275	14,820
P 118 P1	46.25		Satin/Polished Ebony/Mahogany/Walnut/Cherry	16,738	14,390
P 118 R1	46.25		Rococo Satin White w/Gold Trim	20,238	17,190
P 123 K3	48.5		"Cabinet" Continental Modern	41,913	34,530
P 125 F1	49.25		Satin/Polished Ebony/Mahogany/Walnut	19,863	16,890
P 125 G1	49.25		Satin/Polished Ebony/Mahogany/Walnut	20,575	17,460
P 125 M1	49.25		Satin/Polished Ebony/Mahogany/Walnut	20,138	17,110
P 127 NB	49.25		Satin Ebony with Chrome Legs	35,038	29,030
P 127 NC	49.25		Satin Ebony/Anthracite with Chrome Legs	35,038	29,030
P 131 M1	51		Polished Ebony	25,750	21,600
P 131 E1	51		Polished Ebony	25,750	21,600
P 135 K1	53		Polished Ebony	31,425	26,140
Grands					
P V	5	2	Polished Ebony/Mahogany/Walnut	51,075	41,860
P V	5	2	Demi-Chippendale Polished Ebony/Mahogany/Walnut	54,738	44,790
P 159	5	2	"Bora" Polished Ebony/Mahogany/Walnut	52,075	42,660
P 173	5	6	"Breeze" Polished Ebony/Mahogany/Walnut	55,675	45,540
P IV	5	7	Polished Ebony/Mahogany/Walnut	55,000	45,000
P IV	5	7	"Klasik" Polished Ebony/Mahogany/Walnut	64,438	52,550
P IV	5	7	Chippendale Polished Ebony/Mahogany/Walnut	72,825	59,260
P IV	5	7	Demi-Chippendale Polished Ebony/Mahogany/Walnut	62,600	51,080
P IV	5	7	Rococo Satin White w/Gold Trim	70,725	57,580
P III	6	3	Polished Ebony/Mahogany/Walnut	57,525	47,020
P III	6	3	"Majestic" Polished Ebony/Mahogany/Walnut	64,950	52,960
P 194	6	3	"Storm" Polished Ebony/Mahogany/Walnut	62,850	51,280
P 210	6	10	"Pasat" Polished Ebony	94,313	76,450
P II	7	9	Polished Ebony	116,950	94,560
P 237	7	9	"Monsoon" Polished Ebony	138,300	111,640
P 284 - I	9	2	"Mistral" Polished Ebony	163,700	131,960

PRAMBERGER

Legacy Series Verticals

LV-108	42		Continental Polished Ebony	3,490	3,490
LV-108	42		Continental Polished Mahogany/Ivory	3,590	3,590
LV-43F	43		French Provincial Satin Cherry/Brown Oak	4,190	4,190
LV-43T	43		Satin Mahogany/Walnut	4,190	4,190
LV-118	46.5		Satin Ebony	4,390	4,390
LV-118	46.5		Polished Ebony	4,190	4,190
LV-118	46.5		Polished Mahogany	4,390	4,390

Signature Series Verticals

PV-118F	46.5		French Provincial Satin Cherry	5,900	5,620
PV-118R	46.5		Renaissance Satin Walnut	5,900	5,620
PV-118T	46.5		Satin Mahogany	5,900	5,620
PV-118S	46.5		Satin and Polished Ebony	6,290	5,780
PV-118S	46.5		Satin Mahogany/Walnut	6,290	5,780
PV-118S	46.5		Polished Mahogany/Walnut	6,390	5,980
PV-121	48		Satin Ebony	6,090	5,720
PV-121	48		Polished Ebony	5,990	5,610
PV-121	48		Polished Mahogany	6,090	5,720
PV-131	52		Satin Ebony	6,390	6,050

*See pricing explanation on page 213.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
PRAMBERGER (continued)					
PV-131		52	Polished Ebony	6,190	5,830
PV-131		52	Polished Mahogany	6,390	6,050
J.P. Pramberger Platinum Series Verticals					
JP-116		45	Satin Ebony	10,400	8,990
JP-116		45	Polished Ebony	10,100	8,790
JP-116		45	Lacquer Semigloss Mahogany/Walnut	11,300	9,700
JP-118F		46.5	French Provincial Lacquer Semigloss Cherry	8,500	7,700
JP-118T		46.5	Lacquer Semigloss Mahogany	8,500	7,700
JP-125		49	Satin Ebony	10,800	9,290
JP-125		49	Polished Ebony	10,400	9,090
JP-125		49	Lacquer Semigloss Mahogany/Walnut	11,700	10,050
JP-125		49	Lacquer Polished Bubinga/Rosewood	12,000	10,390
JP-131		52	Satin Ebony	12,000	9,500
JP-131		52	Polished Ebony	11,600	9,190
JP-131		52	Lacquer Semigloss Mahogany/Walnut	13,000	10,190
JP-131		52	Lacquer Polished Bubinga/Rosewood	13,400	10,490
Legacy Series Grands					
LG-145	4	8	Polished Ebony	9,790	8,550
LG-145	4	8	Polished Mahogany/Walnut	10,490	9,190
LG-150	4	11.5	Satin Ebony	11,590	9,850
LG-150	4	11.5	Polished Ebony	10,790	9,190
LG-150	4	11.5	Polished Mahogany	11,590	9,850
LG-157	5	2	Satin Ebony	12,390	10,550
LG-157	5	2	Polished Ebony	11,790	9,880
LG-157	5	2	Polished Mahogany	12,390	10,550
LG-175	5	9	Satin Ebony	13,990	11,630
LG-175	5	9	Polished Ebony	12,990	10,870
LG-175	5	9	Polished Mahogany	13,990	11,630
Signature Series Grands					
PS-157	5	2	Satin Ebony	14,900	12,550
PS-157	5	2	Polished Ebony	14,390	11,880
PS-157	5	2	Lacquer Satin Mahogany/Walnut	14,900	12,550
PS-157	5	2	Polished Mahogany/Walnut	14,900	12,550
PS-175	5	9	Satin Ebony	15,990	13,330
PS-175	5	9	Polished Ebony	14,990	12,670
PS-175	5	9	Lacquer Satin Mahogany/Walnut	16,290	13,590
PS-175	5	9	Polished Mahogany/Walnut	15,990	13,330
PS-175KBF	5	9	French Provincial Lacquer Semigloss Cherry	18,090	15,090
PS-175SKAF	5	9	Louis XVI Lacquer Semigloss Cherry/Dark Walnut	18,900	15,690
PS-185	6	1	Satin Ebony	16,990	14,050
PS-185	6	1	Polished Ebony	16,190	13,390
PS-185	6	1	Lacquer Satin Mahogany/Walnut	16,990	14,050
PS-185	6	1	Polished Mahogany/Walnut	16,990	14,050
PS-208	6	10	Satin Ebony	23,000	18,700
PS-208	6	10	Polished Ebony	22,000	17,940
J.P. Pramberger Platinum Series Grands					
JP-160S	5	3	Satin Ebony	24,700	19,590
JP-160S	5	3	Polished Ebony	24,000	18,990
JP-160S	5	3	Lacquer Semigloss Mahogany/Walnut	26,000	20,590
JP-179F	5	10	French Provincial Lacquer Semigloss Mahogany/Walnut/Cherry	33,200	26,950
JP-179L	5	10	Satin Ebony	28,200	23,200
JP-179L	5	10	Polished Ebony	27,500	22,670
JP-179L	5	10	Lacquer Semigloss Mahogany/Walnut	29,600	24,240
JP-179L	5	10	Polished Bubinga/Pommele	29,600	24,240
JP-190A	6	3	Satin Ebony	32,700	26,800
JP-190A	6	3	Polished Ebony	32,000	26,090

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
PRAMBERGER (continued)					
JP-190A	6	3	Lacquer Semigloss Mahogany/Walnut	34,000	27,730
JP-190A	6	3	Polished Bubinga/Pommele	34,400	28,120
JP-208B	6	10	Satin Ebony	35,400	29,680
JP-208B	6	10	Polished Ebony	34,600	29,230
JP-208B	6	10	Lacquer Semigloss Mahogany/Walnut	36,800	30,510
JP-228C (US)	7	6	Satin Ebony	43,800	35,800
JP-228C (US)	7	6	Polished Ebony	42,400	34,800
JP-228C (KO)	7	6	Satin Ebony	39,600	32,680
JP-228C (KO)	7	6	Polished Ebony	38,400	31,720
JP-280E	9	2	Polished Ebony	94,500	76,600

RITMÜLLER

New Series Verticals

UH-118R	46.5		Polished Ebony	8,995	7,790
UH-121R	48		Chippendale Polished Ebony	9,525	8,190
UH-121R	48		Chippendale Polished Sapele	9,925	8,490
UH-132R	52		Polished Ebony	11,525	9,700

Old Series Verticals

UP-110R2	43.5		Polished Ebony	4,253	3,960
UP-110R2	43.5		Polished Mahogany	4,280	3,980
UP-110R4	43.5		French Provincial Satin Cherry	4,518	4,160
UP-110R5	43.5		Satin Walnut (round leg)	4,518	4,160
UP-110R6	43.5		Satin Oak	4,518	4,160
UP-118R2	46.5		Polished Ebony w/Grand-type Lid	4,969	4,500
UP-118R2	46.5		Polished Mahogany w/Grand-type Lid	5,048	4,560
UP-118R3	46.5		Satin Cherry (round leg)	6,029	5,300
UP-120R	48		Polished Ebony	5,631	5,000
UP-120R	48		Polished Mahogany	5,684	5,040
UP-120R1	48		Polished Ebony w/Mahogany Trim	5,764	5,100
UP-120R2	48		Chippendale Satin Walnut/Cherry	5,908	5,220
UP-120R3	48		Polished Ebony w/Silver Trim	6,294	5,600
UP-120R4	48		French Provincial Satin Cherry	6,135	5,380
UP-120R6	48		French Provincial Satin Cherry	6,479	5,640
UP-120R7	48		Satin Walnut (square leg)	6,479	5,640
UP-120R8	48		Satin Walnut (round leg)	6,479	5,640
UP-123R	48		Polished Ebony w/double leg	6,930	5,980
UP-123R	48		Polished Mahogany w/double leg	6,982	6,020
UP-123R1	48		Polished Ebony w/Silver Trim	6,930	5,980
UP-125R	49		Polished Ebony w/Burl Walnut Panel	7,433	6,360
UP-125R2	49		Polished Ebony w/Mahogany Sides	7,645	6,520
UP-126R	49		Polished Ebony w/Mahogany Trim	7,460	6,380
UP-130R	51		Polished Ebony	7,645	6,520
UP-130R	51		Polished Walnut	7,725	6,580
UP-130R	51		Polished Mahogany	7,725	6,580
UP-130R1	51		Polished Ebony	7,592	6,480
UP-130R2	51		Polished Ebony	7,990	6,780
UP-132R	52		Polished Ebony	7,990	6,780

New Series Grands

GH-148R	4	10	Polished Ebony (spade leg)	16,415	13,390
GH-148R	4	10	Polished Sapele Mahogany (spade leg)	17,215	13,990
GH-148R2	4	10	Polished Ebony (spade leg)	16,945	13,790
GH-148R2	4	10	Polished Sapele Mahogany (spade leg)	17,745	14,390
GH-160R	5	3	Hand-rubbed Polished Ebony	20,140	16,200
GH-160R	5	3	Polished Ebony	19,725	15,900
GH-160R	5	3	Polished Sapele Mahogany	20,535	16,500
GH-170R	5	7	Polished Ebony	23,185	18,500

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
RITMÜLLER (continued)					
GH-188R	6	2	Polished Ebony	30,345	23,900
GH-213R	7		Polished Ebony	32,250	25,340
GH-275R	9		Polished Ebony	95,000	72,161
Old Series Grands					
GP-148R	4	10	Hand-rubbed Satin Ebony (round leg)	11,381	8,990
GP-148R	4	10	Polished Ebony (round leg)	11,117	8,790
GP-148R	4	10	Polished Mahogany (round leg)	13,118	9,190
GP-148R1	4	10	Polished Ebony (square leg)	10,587	8,390
GP-148R1	4	10	Polished Mahogany/Walnut (square leg)	11,117	8,790
GP-159R	5	3	Hand-rubbed Satin Ebony (round leg)	14,032	10,990
GP-159R	5	3	Polished Ebony (round leg)	13,767	10,790
GP-159R	5	3	Polished Mahogany/Walnut (round leg)	14,297	11,190
GP-159R1	5	3	Hand-rubbed Satin Ebony (square leg)	13,502	10,590
GP-159R1	5	3	Polished Ebony (square leg)	13,236	10,390
GP-159R1	5	3	Polished Dark Mahogany (square leg)	13,767	10,790
GP-159R2	5	3	French Provincial Satin Cherry	14,829	11,590
GP-183R	6		Hand-rubbed Satin Ebony (round leg)	19,802	14,590
GP-183R	6		Polished Ebony (round leg)	18,537	14,390
GP-183R1	6		Hand-rubbed Satin Ebony (square leg)	18,534	14,390
GP-183R1	6		Polished Ebony (square leg)	17,477	14,190
GP-213R1	7		Polished Ebony	24,632	18,990
GP-275R1	9		Polished Ebony	85,582	64,990

SAMICK

Prices also apply to Conover Cable.

Verticals

JS-042	42		Continental Polished Ebony	3,490	3,490
JS-042	42		Continental Polished Mahogany/Walnut/Ivory	3,590	3,590
JS-042	42		Continental Satin Cherry/Walnut	3,490	3,490
JS-143F	43		French Provincial Satin Cherry	4,500	4,500
JS-143M	43		Mediterranean Satin Brown Oak	4,500	4,500
JS-143T	43		Satin Mahogany	4,500	4,500
JS-115	45		Satin Ebony	3,890	3,890
JS-115	45		Polished Ebony	3,890	3,890
JS-115	45		Satin Mahogany/Walnut/Cherry	3,890	3,890
JS-115	45		Polished Mahogany/Walnut	3,990	3,990
JS-247	46.5		Satin Ebony/Mahogany/Walnut	6,290	5,850
JS-247	46.5		Polished Ebony	6,290	5,850
JS-247	46.5		Polished Mahogany/Walnut	6,390	5,980
JS-121M	48		Satin Ebony	4,790	4,790
JS-121M	48		Polished Ebony	4,590	4,590
JS-121M	48		Polished Mahogany	4,790	4,790
JS-131	52		Satin Ebony	5,590	5,590
JS-131	52		Polished Ebony	5,390	5,390
JS-131	52		Polished Mahogany	5,590	5,590
Grands					
SIG-48	4	8	Polished Ebony	10,890	9,850
SIG-48	4	8	Polished Mahogany/Walnut	10,890	9,850
SIG-50	4	11.5	Satin Ebony	11,590	9,860
SIG-50	4	11.5	Polished Ebony	10,890	9,190
SIG-50	4	11.5	Lacquer Satin Mahogany/Walnut	11,590	9,860
SIG-50	4	11.5	Polished Mahogany/Walnut	11,590	9,860
SIG-54	5	4	Satin Ebony	12,290	10,690
SIG-54	5	4	Polished Ebony	11,690	10,020
SIG-54	5	4	Lacquer Satin Mahogany/Walnut	12,290	10,690
SIG-54	5	4	Polished Mahogany/Walnut	12,290	10,690

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
SAMICK (continued)					
SIG-54 KBF	5	4	French Provincial Satin Mahogany/Walnut/Cherry	15,590	13,390
SIG-57	5	7	Satin Ebony	14,090	11,880
SIG-57	5	7	Polished Ebony	13,190	11,210
SIG-57	5	7	Lacquer Satin Mahogany/Walnut	14,090	11,880
SIG-57	5	7	Polished Mahogany/Walnut	14,090	11,880
SIG-57L	5	7	Empire Polished Ebony	14,990	12,590
SIG-57L	5	7	Empire Lacquer Satin Mahogany and Polished Mahogany	15,690	13,190
SIG-61	6	1	Satin Ebony	15,390	13,430
SIG-61	6	1	Polished Ebony	14,390	12,770
SIG-61	6	1	Lacquer Satin Mahogany/Walnut	15,390	13,430
SIG-61	6	1	Polished Mahogany/Walnut	15,390	13,430

SAUTER

Standard wood veneers are walnut, mahogany, oak, ash, and alder.

Verticals

122	48	"Ragazza" Polished Ebony	32,347	32,347
122	48	"Ragazza" Satin Cherry	32,017	32,017
122	48	"Ragazza" Polished Cherry/Yew	37,970	37,970
122	48	"Vista" Polished Ebony	35,434	35,434
122	48	"Vista" Satin Maple	33,781	33,781
122	48	"Vista" Satin Cherry	35,258	35,258
122	48	"Master Class" Polished Ebony	41,652	41,652
122	48	Peter Maly "Artes" Polished Ebony	46,437	46,437
122	48	Peter Maly "Artes" Polished Palisander/Macassar	47,893	47,893
122	48	Peter Maly "Artes" Polished White	47,319	47,319
122	48	Peter Maly "Pure Noble" Polished Ebony/Veneers	43,416	43,416
122	48	Peter Maly "Pure Noble" Polished White/Red	44,607	44,607
122	48	Peter Maly "Pure Basic" Satin Ebony/Walnut	35,192	35,192
122	48	Peter Maly "Pure Basic" Satin White/Maple	35,192	35,192
122	48	Peter Maly "Rondo" Polished Ebony	38,610	38,610
122	48	Peter Maly "Rondo" Satin Wenge	35,655	35,655
122	48	Peter Maly "Vitrea" Colored Ebony with Glass	36,140	36,140
122	48	"Schulpiano" Satin Beech/Black Ash	28,202	28,202
130	51	"Master Class" Polished Ebony	47,209	47,209
130	51	"Competence" Polished Ebony	40,219	40,219
130	51	"Competence" Satin Walnut	38,169	38,169
130	51	Peter Maly "Cura" Satin Walnut	45,136	45,136
130	51	Peter Maly "Cura" Satin Cherry	46,614	46,614

Grands

160	5	3	"Alpha" Polished Ebony	84,650	84,650
160	5	3	"Alpha" Satin Standard Wood Veneers	78,123	78,123
160	5	3	Chippendale Satin Cherry	87,781	87,781
160	5	3	Chippendale Satin Standard Wood Veneers	84,518	84,518
160	5	3	"Noblesse" Satin Cherry	94,176	94,176
160	5	3	"Noblesse" Polished Cherry	104,671	104,671
160	5	3	"Noblesse" Satin Burl Walnut	98,387	98,387
160	5	3	"Noblesse" Satin Standard Wood Veneers	90,934	90,934
160	5	3	"Noblesse" Polished Standard Wood Veneers	101,276	101,276
185	6	1	"Delta" Polished Ebony	94,284	94,284
185	6	1	"Delta" Polished Ebony w/Burl Walnut	96,666	96,666
185	6	1	"Delta" Polished Pyramid Mahogany	104,126	104,126
185	6	1	"Delta" Polished Bubinga	103,340	103,340
185	6	1	"Delta" Polished Rio Palisander	104,126	104,126
185	6	1	"Delta" Satin Maple with Silver	88,667	88,667
185	6	1	"Delta" Polished White	97,228	97,228
185	6	1	"Delta" Satin Standard Wood Veneers	86,689	86,689
185	6	1	Chippendale Satin Cherry	96,396	96,396

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
SAUTER (continued)					
185	6	1	Chippendale Satin Standard Wood Veneers	93,093	93,093
185	6	1	"Noblesse" Satin Cherry	103,070	103,070
185	6	1	"Noblesse" Polished Cherry	114,799	114,799
185	6	1	"Noblesse" Satin Burl Walnut	107,204	107,204
185	6	1	"Noblesse" Satin Standard Wood Veneers	99,902	99,902
185	6	1	"Noblesse" Polished Standard Wood Veneers	111,990	111,990
210	6	11	Peter Maly "Vivace" Polished Ebony	131,089	131,089
210	6	11	Peter Maly "Vivace" Satin Wood Veneers	122,363	122,363
210	6	11	Peter Maly "Vivace" Polished White	133,048	133,048
220	7	3	"Omega" Polished Ebony	118,980	118,980
220	7	3	"Omega" Polished Burl Walnut	132,625	132,625
220	7	3	"Omega" Polished Pyramid Mahogany	131,423	131,423
220	7	3	"Omega" Satin Standard Wood Veneers	114,172	114,172
230	7	7	Peter Maly "Ambiente" Polished Ebony	150,656	150,656
230	7	7	Peter Maly "Ambiente" Polished Ebony w/Crystals	172,359	172,359
275	9		Concert Polished Ebony	204,227	204,227

SCHIMMEL

When not mentioned, satin finish available on special order at same price as high-polish finish.

Classic Series Verticals

C 112 S	45		Open-Pore Ebony/Oak/Walnut	20,390	19,580
C 116 T	46		Polished Ebony	18,690	17,980
C 116 T	46		Open-Pore Alder	19,390	18,580
C 116 T	46		Open-Pore Beech	17,990	17,380
C 116 T	46		Open-Pore Walnut	18,690	17,980
C 116 T	46		Satin Cherry	19,790	18,980
C 116 T	46		Polished Mahogany	19,790	18,980
C 116 T	46		Polished White	19,590	18,780
C 120 I	47		"International" Polished Ebony	19,290	18,580
C 120 I	47		"International" Polished Mahogany	21,790	20,780
C 120 I	47		"International" Polished White	20,190	19,380
C 120 S	47		Open-Pore Ebony/Oak (school studio)	20,890	19,980
C 120 T	47		Polished Ebony	20,190	19,380
C 120 T	47		Open-Pore Alder/Beech	20,190	19,380
C 120 T	47		Open-Pore Walnut	20,890	19,980
C 120 T	47		Satin Cherry	23,290	22,180
C 120 T	47		Polished Mahogany	22,390	21,380
C 120 T	47		Polished White	21,790	20,780
C 120 TA	47		"Akademie" Polished Ebony	21,790	20,780
C 124 R	49		"Royal" Polished Ebony	26,390	24,980
C 124 R	49		"Royal" Polished Mahogany	29,890	28,180
C 124 RI	49		"Royale Intarsia" Flora Polished Mahogany	30,790	28,980
C 124 T	49		Polished Ebony	23,990	22,780
C 124 T	49		Polished Ebony w/Oval Decoration	24,990	23,780
C 124 T	49		Polished Mahogany	26,190	24,780
C 124 T	49		Polished Mahogany w/Oval Decoration	27,290	25,780
C 124 T	49		Open-Pore Walnut Antique w/Oval Decoration	26,190	24,780
C 130 T	51		Polished Ebony	28,990	27,380
C 130 T	51		Polished Ebony w/Oval Decoration	29,490	27,780
C 130 T	51		Open-Pore Walnut	26,990	25,580
C 130 T	51		Polished Mahogany/Walnut	31,190	29,380

Konzert Series Verticals

K 122 E	48		"Elegance" Polished Ebony	28,990	27,380
K 122 MC	48		"Modern Cubus" Polished Ebony	30,790	28,980
K 122 MC	48		"Modern Cubus" Satin Swiss Pear	30,790	28,980
K 122 MC	48		"Modern Cubus" Polished White	30,790	28,980
K 122 TA	48		"Akademie" Polished Ebony	28,990	27,380

*See pricing explanation on page 213.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
SCHIMMEL (continued)					
K 125 N		49	"Noblesse" Polished Ebony	31,990	30,180
K 125 N		49	"Noblesse" Polished Mahogany	33,990	31,980
K 125 P		49	"Prestige" Polished Ebony	33,190	30,980
K 125 P		49	"Prestige" Polished Mahogany	35,190	32,980
K 132 T		52	Polished Ebony	34,290	32,180
K 132 T		52	Polished Mahogany	38,690	36,180
K 132 W		52	"Wilhelmina" Satin Mahogany/Walnut	45,990	42,780
Classic Series Grands					
C 182 AN		6	"Art Nouveau" Polished Ebony	45,290	42,180
C 182 AN		6	"Art Nouveau" Polished Mahogany	46,190	42,980
C 182 T		6	Polished Ebony	41,790	38,980
C 182 T		6	Polished Mahogany	42,990	40,180
C 208 AN		6 8	"Art Nouveau" Polished Ebony	52,790	48,980
C 208 AN		6 8	"Art Nouveau" Polished Mahogany	53,890	49,980
C 208 T		6 8	Polished Ebony	48,990	45,580
C 208 T		6 8	Polished Mahogany	50,590	46,980
Konzert Series Grands					
K 169 AN		5 7	"Art Nouveau" Polished Ebony	72,590	66,980
K 169 AN		5 7	"Art Nouveau" Polished Mahogany/White	75,190	69,380
K 169 BE		5 7	"Belle Epoque" Polished Ebony	68,990	63,780
K 169 E		5 7	Empire Satin and Polished Mahogany	80,490	74,180
K 169 R		5 7	"Royal" Polished Ebony	65,290	60,380
K 169 R		5 7	"Royal" Polished Mahogany/White	67,690	62,580
K 169 RIF		5 7	"Royal Intarsie" Flora Polished Mahogany	70,390	64,980
K 169 T		5 7	Polished Ebony	62,690	57,980
K 169 T		5 7	Polished Mahogany/White/Burl Walnut/Ash	65,290	60,380
K 169 T		5 7	Polished Flame Mahogany/Macassar	73,990	68,380
K 169 T		5 7	Polished Bubinga/Bird's-Eye Maple	72,590	66,980
K 169 TIH		5 7	"Intarsie Harp" Polished Ebony	70,390	64,980
K 169 TIV		5 7	"Intarsie Vase" Polished Mahogany	70,390	64,980
K 189 AN		6 3	"Art Nouveau" Polished Ebony	75,690	69,780
K 189 AN		6 3	"Art Nouveau" Polished Mahogany/White	77,990	71,980
K 189 BE		6 3	"Belle Epoque" Polished Ebony	71,890	66,380
K 189 EP		6 3	Empire Satin and Polished Mahogany	80,490	74,180
K 189 NWS		6 3	Nikolaus W. Schimmel Special Edition	77,990	71,980
K 189 R		6 3	"Royal" Polished Ebony	68,190	62,980
K 189 R		6 3	"Royal" Polished Mahogany/White	70,790	65,380
K 189 RIF		6 3	"Royal Intarsie" Flora Polished Mahogany	73,190	67,580
K 189 T		6 3	Polished Ebony	65,990	60,980
K 189 T		6 3	Polished Walnut/Mahogany/White	68,190	62,980
K 189 T		6 3	Polished Burl Walnut/Brown Ash	75,390	69,580
K 189 T		6 3	Polished Flame Mahogany/Macassar	76,990	70,980
K 189 T		6 3	Polished Bubinga/Bird's-Eye Maple	75,390	69,580
K 189 T		6 3	Open-Pore Walnut Antique	65,990	60,980
K 189 T		6 3	"Red Diamond"	75,690	69,780
K 189 TA		6 3	"Akademie" Polished Ebony	65,990	60,980
K 189 TIH		6 3	"Intarsie Harp" Polished Ebony	73,190	67,580
K 189 TIV		6 3	"Intarsie Vase" Polished Mahogany	73,190	67,580
K 213 AN		7	"Art Nouveau" Polished Ebony	77,990	71,980
K 213 AN		7	"Art Nouveau" Polished Mahogany/White	80,490	74,180
K 213 G		7	"Glas" Clear Acrylic and White	158,390	144,980
K 213 NWS		7	Nikolaus W. Schimmel Special Edition	82,890	76,380
K 213 OA		7	"Otmar Alt" Polished Ebony w/Color Motifs	181,490	165,980
K 213 R		7	"Royal" Polished Ebony	71,890	66,380
K 213 R		7	"Royal" Polished Mahogany/White	74,590	68,780
K 213 T		7	Polished Ebony	69,490	64,180
K 213 T		7	Polished Mahogany/Walnut/White	71,890	66,380

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
SCHIMMEL (continued)					
K 213 T	7		Polished Flame Mahogany/Macassar	80,490	74,180
K 213 T	7		Polished Burl Walnut/Brown Ash	79,190	72,980
K 213 T	7		Polished Bubinga/Bird's-Eye Maple	79,190	72,980
K 213 T	7		"Red" Diamond	79,190	72,980
K 213 TA	7		"Akademie" Polished Ebony	69,490	64,180
K 230 T	7	5	Polished Ebony	84,690	77,980
K 256 T	8	4	Polished Ebony	94,390	86,780
K 280 T	9	2	Polished Ebony	117,690	107,980

SCHULZE POLLMANN

Verticals

118/P8	46		Polished Ebony	14,190	14,190
118/P8	46		Polished Briar Walnut/Mahogany	14,790	14,790
118/P8	46		Polished Feather and Peacock Mahogany	14,790	14,790
126/P6	50		Polished Ebony	15,590	15,590
126/P6	50		Polished Peacock Ebony/Mahogany/Walnut/Cherry	16,590	16,590
126/P6	50		Polished Briar Mahogany/Walnut	16,590	16,590
126/P6	50		Polished Feather Mahogany	16,590	16,590

Grands

160/GK	5	3	Polished Ebony (spade leg)	40,990	40,990
160/GK	5	3	Polished Ebony (round leg)	42,590	42,590
160/GK	5	3	Polished Briar Mahogany (spade leg)	43,990	43,990
160/GK	5	3	Polished Briar Mahogany (round leg)	45,990	45,990
160/GK	5	3	Polished Feather Mahogany (spade leg)	48,990	48,990
197/G5	6	7	Polished Ebony (spade leg)	56,190	56,190
197/G5	6	7	Polished Briar Mahogany (spade leg)	58,990	58,990
197/G5	6	7	Polished Feather Mahogany (spade leg)	60,990	60,990

SEILER

Veneers I, II, III, and IV are traditional and exotic veneers grouped by price.

Seiler Trend Line Verticals

116 Impuls	46		Polished Ebony	21,780	20,800
116 Impuls	46		Satin Veneers	22,220	21,200
116 Focus	46		Polished Ebony	22,660	21,600
116 Clou	46		Polished Ebony	22,660	21,600
116 Accent	46		Polished Ebony	22,880	21,800
116 Pulsar	46		Ash Silver	27,720	26,200
126 Impuls	50		Polished Ebony	28,160	26,600
126 Impuls	50		Satin Veneers	28,600	27,000
126 Focus	50		Polished Ebony	27,720	26,200
126 Focus	50		Satin Veneers	29,260	27,600
126 Attraction	50		Ebony Pilaster Strips Metal	33,000	31,000
126 Attraction	50		Satin Veneer Wood Paneling	34,980	32,800
126 Pulsar	50		Ash Silver	39,600	37,000

Eduard Seiler Trend Line Verticals

116 Impuls	46		Polished Ebony	20,020	19,200
116 Impuls	46		Satin Veneers	20,240	19,400
116 Focus	46		Polished Ebony	20,680	19,800
116 Clou	46		Polished Ebony	20,680	19,800
116 Accent	46		Polished Ebony	21,120	20,200
126 Impuls	50		Polished Ebony	25,520	24,200
126 Impuls	50		Satin Veneers	26,180	24,800
126 Focus	50		Polished Ebony	25,960	24,600
126 Focus	50		Satin Veneers	26,400	25,000
126 Attraction	50		Ebony Pilaster Strips Metal	30,360	28,600
126 Attraction	50		Satin Veneer Wood Paneling	32,120	30,200

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
SEILER (continued)					
Seiler Classic Line Verticals					
116 Primus	46		Polished Ebony	19,789	18,990
116 Primus	46		Satin Veneer I	20,449	19,590
116 Primus	46		Satin Veneer II	21,549	20,590
116 Favorit	46		Polished Veneer I	21,010	20,100
116 Favorit	46		Satin Veneer I	21,450	20,500
116 Mondial	46		Polished Ebony	22,440	21,400
116 Mondial	46		Polished Veneer I	28,380	26,800
116 Mondial	46		Satin Veneer I	22,880	21,800
116 Mondial	46		Polished Veneer II	29,700	28,000
116 Mondial	46		Satin Veneer II	23,540	22,400
116 Escorial	46		Satin Cherry Ribbon Intaria	26,400	25,000
116 Jubilee	46		Polished Ebony	21,989	20,990
122 Primus	48		Polished Ebony	24,640	23,400
122 Primus	48		Satin Veneer I	25,080	23,800
122 Konsole	48		Polished Ebony	27,720	26,200
122 Konsole	48		Polished Veneer I	31,240	29,400
122 Konsole	48		Satin Veneer I	25,300	24,000
122 Konsole	48		Polished Veneer II	32,780	30,800
122 Konsole	48		Satin Veneer II	26,180	24,800
122 Konsole Vienna	48		Mahogany with Flower Inlay	31,020	29,200
122 Konsole Vienna	48		Oval Paneling, Rootwood Pilaster Strips	29,920	28,200
126 Primus	50		Polished Ebony	27,280	25,800
126 Primus	50		Polished Veneer I	33,440	31,400
126 Primus	50		Satin Veneer I	27,940	26,400
126 Konsole	50		Polished Ebony	27,720	26,200
126 Konsole	50		Polished Veneer I	33,880	31,800
126 Konsole	50		Satin Veneer I	28,380	26,800
132 Konzert	52		Polished Ebony	30,800	29,000
132 Konzert	52		Polished Veneer I	37,730	35,300
132 Konzert	52		Satin Veneer I	32,120	30,200
132 Konzert	52		Polished Veneer II	39,600	37,000
132 Konzert	52		Satin Veneer II	33,000	31,000
Eduard Seiler Classic Line Verticals					
116 Primus	46		Polished Ebony	17,369	16,790
116 Primus	46		Satin Veneer I	18,029	17,390
116 Primus	46		Satin Veneer II	18,810	18,100
122 Primus	48		Polished Ebony	22,770	21,700
122 Primus	48		Satin Veneer I	23,100	22,000
126 Primus	50		Polished Ebony	24,750	23,500
126 Primus	50		Satin Veneer I	24,970	23,700
Grands					
<i>Prices for Seiler grands are for the "Classic" case shape. For the "Modern" shape, add about \$3,000.</i>					
168 Virtuoso	5	6	Polished Ebony	64,680	59,800
168 Virtuoso	5	6	Polished White	71,500	66,000
168 Virtuoso	5	6	Polished Veneer I	72,160	66,600
168 Virtuoso	5	6	Satin Veneer I	64,680	59,800
168 Virtuoso	5	6	Polished Veneer II	73,260	67,600
168 Virtuoso	5	6	Polished Veneer III	74,140	68,400
168 Virtuoso	5	6	Polished Veneer IV	76,340	70,400
186 Maestro	6	1	Polished Ebony	67,980	62,800
186 Maestro	6	1	Polished White	74,800	69,000
186 Maestro	6	1	Polished Veneer I	75,460	69,600
186 Maestro	6	1	Satin Veneer I	68,200	63,000
186 Maestro	6	1	Polished Veneer II	76,560	70,600
186 Maestro	6	1	Polished Veneer III	77,440	71,400
186 Maestro	6	1	Polished Veneer IV	79,200	73,000

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
SEILER (continued)					
186 Vision	6	1	Polished Ebony (Trend Line)	58,300	54,000
186	6	1	Chippendale Open-Pore Walnut	83,600	77,000
186	6	1	“Westminster” Polished Mahogany, Intarsia	102,520	94,200
186	6	1	“Florenz” Polished Mahogany/Walnut/Myrtle, Intarsia	102,520	94,200
186	6	1	“Louvre” Polished Ebony	83,600	77,000
186	6	1	“Louvre” Polished Cherry, Intarsia	102,520	94,200
186	6	1	“Prado” Polished Burl Rosewood	102,520	94,200
186	6	1	“Prado” Polished Brown Ash	109,780	100,800
186	6	1	“Stella” Polished Flame Maple w/Marquetry	109,780	100,800
208	6	10	Polished Ebony	74,800	69,000
208	6	10	Polished White	83,380	76,800
242	8		Polished Ebony	98,560	90,600
242	8		Polished White	108,900	100,000
278	9		Polished Ebony	169,400	155,000

SEJUNG

Sejung makes pianos under the names Falcone, Hobart M. Cable, and Geo. Steck. The large variety of styles and finishes offered under the three brand names are very similar from one brand to the next, and in most cases the prices are the same. To save space, I have compiled one master list of models for all three brands. Although I have used the generic model prefixes “U” and “C” for the verticals and “G” for grands, each brand actually has its own prefixes: UF, CF, and GF for Falcone; FV and FG for the Falcone Georgian series; UH, CH, and GH for Hobart M. Cable; and US, CS, and GS for Geo. Steck. All the vertical piano prices shown are for models without a slow-close fallboard. Models with a slow-close fallboard, where available, have model numbers ending with “D” and cost \$120 more than shown. All the grand piano prices shown are for models with a slow-close fallboard. Models without a slow-close fallboard, where available, have model numbers omitting the final “D” and cost \$120 less than shown. The Falcone Georgian series has upgraded cosmetic and technical features. The Falcone Georgian verticals cost the same as the other-named verticals, but the Falcone Georgian grands cost from \$140 to \$400 more, depending on size. Not all models, styles, and finishes shown are available under all names. See Brand Profile for Sejung for more information on Sejung prices.

Verticals

U 09	43	Continental Polished Ebony	3,990	3,990
U 09	43	Continental Polished Other Finishes	4,110	4,110
U 09	43	Continental Satin Finishes	4,050	4,050
U 09A	43	Continental Polished Ebony (no back posts)	3,790	3,790
U 09A	43	Continental Polished Other Finishes (no back posts)	3,910	3,910
U 09L	43	Polished Ebony	4,050	4,050
U 09L	43	Polished Other Finishes	4,170	4,170
C 12F	44	French Provincial Satin Cherry/Brown Oak	4,390	4,390
C 12F1	44	French Provincial Satin Cherry/Brown Oak	4,290	4,290
C 12IP	44	Italian Provincial Satin Walnut/Mahogany/Cherry/Oak	4,690	4,690
C 12M	44	Mediterranean Satin Cherry/Brown Oak	4,390	4,390
C 12M1	44	Mediterranean Satin Cherry/Brown Oak/Sapele	4,290	4,290
U 12F	44	French Provincial Polished Ebony	4,310	4,310
U 12F	44	French Provincial Other Polished Finishes	4,430	4,430
U 12F	44	French Provincial Satin Finishes	4,370	4,370
U 12FC	44	12F Satin with Decorated Front Panel	4,410	4,410
U 12T	44	Polished Ebony	4,190	4,190
U 12T	44	Polished Other Finishes	4,310	4,310
U 12T	44	Satin Finishes	4,250	4,250
C 13F	44.5	French Provincial Satin Cherry/Mahogany	4,690	4,690
C 13F1	44.5	French Provincial Satin Cherry/Brown Oak/Mahogany	4,890	4,890
C 13M	44.5	Designer Satin Cherry/Dark Cherry/Mahogany	4,690	4,690
C 13M1	44.5	Designer Satin Cherry/Brown Oak/Mahogany	4,890	4,890
C 16AT	45.5	Satin Cherry/Brown Oak	4,890	4,890
C 16F	45.5	French Provincial Satin Cherry/Brown Oak/Walnut	4,590	4,590
C 16FP	45.5	French Provincial Satin Cherry/Brown Oak	4,650	4,650
C 16IP	45.5	Italian Provincial Satin Cherry/Walnut	4,650	4,650
C 16QA	45.5	Queen Anne Satin Cherry/Brown Oak/Mahogany	4,990	4,990
U 16IC	46	Italian Provincial Polished Ebony	4,250	4,250

*See pricing explanation on page 213.

<i>Model</i>	<i>Feet Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
SEJUNG (continued)				
U 16IC	46	Italian Provincial Other Polished Finishes	4,370	4,370
U 16ST	46	Satin Finishes (school)	4,310	4,310
U 16STL	46	Polished Ebony (school with lock)	4,310	4,310
U 16STL	46	Polished Other Finishes (school with lock)	4,450	4,450
U 16STL	46	Satin Finishes (school with lock)	4,390	4,390
U 16TC	46	Polished Ebony w/Decorated Front Panel	4,330	4,330
U 16TC	46	Polished Other Finishes w/Decorated Front Panel	4,450	4,450
U 18MS	46.5	Designer Other Polished Finishes w/Front Inlay	4,430	4,430
C 19F	47	Country French Satin Cherry/Brown Oak/Mahogany	4,790	4,790
C 19F1	47	Country French Satin Cherry/Brown Oak	4,790	4,790
C 19M	47	Mediterranean Satin Brown Oak/Cherry/Mahog.	4,790	4,790
C 19M1	47	Mediterranean Satin Cherry/Oak/Brown Oak	4,790	4,790
C 19QA	47	Queen Anne Satin Cherry/Brown Oak	5,190	5,190
C 47CI	47	Modern Designer C Polished Ebony	5,690	5,690
C 47CI	47	Modern Designer C Other Polished Finishes	5,810	5,810
C 47F	47	French Provincial Satin Cherry/Mahogany	5,990	5,990
C 47M	47	Mediterranean Satin Mahogany	5,990	5,990
C 47R	47	Modern Designer R Other Polished Finishes	5,910	5,910
C 47V	47	Modern Designer V Polished Ebony	6,190	6,190
U 19F	47	French Provincial Polished Ebony	4,390	4,390
U 19F	47	French Provincial Polished Other Finishes	4,510	4,510
U 19F	47	French Provincial Satin Finishes	4,450	4,450
U 19FC	47	Polished Other Finishes w/Decorated Front Panel	4,590	4,590
U 19P	47	Designer Polished Bubinga	4,570	4,570
U 19P	47	Designer Other Polished Finishes	4,450	4,450
U 19ST	47	Polished Ebony	4,290	4,290
U 19ST	47	Polished Other Finishes	4,410	4,410
U 19ST	47	Satin Finishes	4,350	4,350
U 19T	47	Polished Ebony	4,290	4,290
U 19T	47	Polished Other Finishes	4,410	4,410
U 19T	47	Satin Finishes	4,350	4,350
U 20T	47	Designer Polished Ebony	4,590	4,590
U 20T	47	Designer Other Polished Finishes	4,710	4,710
U 210M	47.5	Designer Special Other Polished Finishes	4,590	4,590
U 22F	48	French Provincial Polished Ebony	4,610	4,610
U 22F	48	French Provincial Polished Other Finishes	4,730	4,730
U 22IT	48	Italian Designer Polished Ebony	4,690	4,690
U 22T	48	Polished Ebony	4,490	4,490
U 22T	48	Polished Other Finishes	4,610	4,610
U 22T	48	Satin Finishes	4,550	4,550
U 22WT	48	Metropolitan Designer Polished Ebony	4,690	4,690
U 23F	48	French Provincial Polished Ebony	4,790	4,790
U 23F	48	French Provincial Polished Other Finishes	4,910	4,910
U 23F	48	French Provincial Satin Finishes	4,850	4,850
U 23T	48	Designer Polished Ebony	4,670	4,670
U 23T	48	Designer Polished Other Finishes	4,790	4,790
U 23T	48	Designer Satin Finishes	4,730	4,730
U 26T	48	Designer Polished Ebony	4,500	4,500
U 26T	48	Designer Satin Finishes	4,610	4,610
U 28	48	Designer Special Polished Bubinga	5,430	5,430
U 28S	48	Designer Special Polished Bubinga w/Inlay	5,570	5,570
U 230C	48.5	Designer Medieval Special Satin Finishes	5,270	5,270
U 25B	49.5	Designer w/HM on Front Panel Polished Ebony	4,870	4,870
U 25S	49.5	Designer w/BLK Oval Polished Ebony	4,810	4,810
U 25SM	49.5	Designer w/BSP Oval Polished Ebony	4,730	4,730
U 32E	52	Professional Designer LHM Polished Ebony	6,190	6,190
U 32F	52	French Provincial Polished Ebony	4,810	4,810
U 32F	52	French Provincial Polished Other Finishes	4,930	4,930

*See pricing explanation on page 213.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
SEJUNG (continued)					
U 32H		52	Professional Designer Polished Bubinga	5,570	5,570
U 32T		52	Polished Ebony	4,690	4,690
U 32T		52	Polished Other Finishes	4,810	4,810
U 32T		52	Satin Finishes	4,750	4,750
Grands					
G 42D	4	8	Satin Ebony	10,310	10,310
G 42D	4	8	Polished Ebony	10,110	10,110
G 42D	4	8	Satin Wood Finishes	10,710	10,710
G 42D	4	8	Polished Wood Finishes	10,510	10,510
G 42D	4	8	Polished Bubinga	11,110	11,110
G 42D	4	8	Polished Ivory/White	10,310	10,310
G 42FD	4	8	French Provincial Polished Ebony	10,590	10,590
G 42FD	4	8	French Provincial Satin Wood Finishes	11,190	11,190
G 42FD	4	8	French Provincial Polished Wood Finishes	10,990	10,990
G 42LD	4	8	Louis XVI Polished Ebony	10,430	10,430
G 52D	5		Satin Ebony	11,310	11,310
G 52D	5		Polished Ebony	11,110	11,110
G 52D	5		Satin Wood Finishes	11,710	11,710
G 52D	5		Polished Wood Finishes	11,510	11,510
G 52D	5		Polished Bubinga	12,110	12,110
G 52FD	5		French Provincial Polished Ebony	11,590	11,590
G 52FD	5		French Provincial Satin Wood Finishes	12,190	12,190
G 52FD	5		French Provincial Polished Wood Finishes	11,990	11,990
G 52FD	5		French Provincial Polished Ivory/White	11,790	11,790
G 52FAD	5		FrenchAnn Polished Wood Finishes	12,310	12,310
G 52LD	5		Louis XVI Polished Ebony	11,430	11,430
G 52LD	5		Louis XVI Polished Wood Finishes	11,830	11,830
G 62D	5	4	Satin Ebony	12,310	12,310
G 62D	5	4	Polished Ebony	12,110	12,110
G 62D	5	4	Satin Wood Finishes	12,710	12,710
G 62D	5	4	Polished Wood Finishes	12,510	12,510
G 62D	5	4	Polished Bubinga	13,110	13,110
G 62D	5	4	Polished Ivory/White	12,310	12,310
G 62FD	5	4	French Provincial Satin Ebony	12,790	12,790
G 62FD	5	4	French Provincial Satin Wood Finishes	13,190	13,190
G 62FD	5	4	French Provincial Polished Wood Finishes	12,990	12,990
G 62FD	5	4	French Provincial Polished Ivory/White	12,790	12,790
G 62HLED	5	4	Louis XVI Polished Ebony (Hexagonal)	12,830	12,830
G 62HLED	5	4	Louis XVI Polished Sapele (Hexagonal)	13,830	13,830
G 62HLED	5	4	Louis XVI Polished Wood Finishes (Hexagonal)	13,830	13,830
G 62PLBD	5	4	Louis XVI Polished Bubinga (Octagonal)	13,830	13,830
G 62QAD	5	4	Queen Anne Polished Wood Finishes	13,310	13,310
G 72D	5	8	Satin Ebony	13,310	13,310
G 72D	5	8	Polished Ebony	13,110	13,110
G 72D	5	8	Satin Wood Finishes	13,710	13,710
G 72D	5	8	Polished Wood Finishes	13,510	13,510
G 72D	5	8	Polished Bubinga	14,110	14,110
G 72D	5	8	Polished Ivory/White	13,310	13,310
G 72FD	5	8	French Provincial Polished Ebony	13,590	13,590
G 72FD	5	8	French Provincial Satin Wood Finishes	14,190	14,190
G 72FD	5	8	French Provincial Polished Wood Finishes	13,990	13,990
G 72FD	5	8	French Provincial Polished Ivory/White	13,790	13,790
G 72FFD	5	8	Rococo Polished Ivory/White	14,110	14,110
G 72HLD	5	8	Louis XVI Satin Wood Finish (Hexagonal)	14,310	14,310
G 72HLD	5	8	Louis XVI Polished Bubinga (Hexagonal)	15,910	15,910
G 72LD	5	8	Louis XVI Polished Ebony	13,430	13,430
G 72LD	5	8	Louis XVI Satin Wood Finishes	14,030	14,030

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
SEJUNG (continued)					
G 72LD	5	8	Louis XVI Polished Wood Finishes	13,830	13,830
G 72PLD	5	8	Louis XVI Polished Wood Finishes (Octagonal)	14,110	14,110
G 72PLSD	5	8	Louis XVI Polished Wood Finishes (Octagonal)	14,610	14,610
G 72PLSD	5	8	Louis XVI Polished Sapele (Octagonal)	15,210	15,210
G 72QAD	5	8	Queen Anne Satin Wood Finishes	14,430	14,430
G 87BCD	6	2	Polished Bubinga w/Rim Band/Beveled Lid	15,430	15,430
G 87D	6	2	Satin Ebony	14,310	14,310
G 87D	6	2	Polished Ebony	14,110	14,110
G 87D	6	2	Polished Wood Finishes	14,510	14,510
G 87D	6	2	Polished Bubinga	15,110	15,110
G 87FD	6	2	French Provincial Polished Ebony	14,590	14,590
G 87FD	6	2	French Provincial Satin Wood Finishes	15,190	15,190
G 87FD	6	2	French Provincial Polished Wood Finishes	14,990	14,990
G 87FFBD	6	2	Rococo Polished Wood Finishes	15,430	15,430
G 87HLBCD	6	2	Louis XVI Polished Beech Ebony (Hexagonal)	16,830	16,830
G 87HLD	6	2	Louis XVI Satin Wood Finish (Hexagonal)	15,310	15,310
G 87LD	6	2	Louis XVI Satin Ebony	14,630	14,630
G 87LD	6	2	Louis XVI Polished Ebony	14,430	14,430
G 87LD	6	2	Louis XVI Satin Wood Finishes	15,030	15,030
G 87LD	6	2	Louis XVI Polished Wood Finishes	14,830	14,830
G 87LD	6	2	Louis XVI Polished Ivory/White	14,630	14,630
G 87PLD	6	2	Louis XVI Satin Wood Finishes (Octagonal)	15,310	15,310
G 87PLSD	6	2	Louis XVI Polished Wood Finishes (Octagonal)	15,710	15,710
G 208D	6	10	Satin Ebony	17,210	17,210
G 208D	6	10	Polished Ebony	16,990	16,990
G 208D	6	10	Satin Wood Finishes	17,590	17,590
G 208D	6	10	Polished Wood Finishes	16,990	16,990
G 208HLD	6	10	Louis XVI Satin Wood Finish (Hexagonal)	18,190	18,190
G 208HLBCD	6	10	Louis XVI Satin Wood Finish (Hexagonal)	18,510	18,510
G 208HLBCD	6	10	Louis XVI Polished Wood Finish (Hexagonal)	18,310	18,310
G 228D	7	6	Polished Ebony	20,990	20,990
G 278D	9	2	Polished Ebony	44,990	44,990

SOHMER (Persis International)

Verticals

S-126	50	Polished Ebony	10,800
S-126	50	Polished Mahogany	11,200

Grands

S-160	5	3	Polished Ebony	20,190
S-160	5	3	Polished Mahogany	20,990
S-180	5	10	Polished Ebony	22,190
S-180	5	10	Polished Mahogany	22,990
S-218	7	2	Polished Ebony	31,980

SOHMER (SMC)

Verticals

43F	43	French Provincial Satin Cherry	4,190	4,190
43T	43	Satin Mahogany/Walnut	4,190	4,190
47S	46.5	Satin Ebony	6,190	5,700
47S	46.5	Polished Ebony	5,990	5,550
47S	46.5	Satin Mahogany/Walnut	5,990	5,550
47S	46.5	Polished Mahogany/Walnut	5,990	5,650
48P	48	Polished Ebony	4,590	4,590

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
SOHMER (SMC) (continued)					
Grands					
50F	5		French Provincial Semi-Gloss Mahogany/Cherry	21,000	19,890
50T	5		Polished Ebony	13,790	12,120
50T	5		Satin Mahogany/Walnut/Cherry	15,190	12,750
63E	5	4	Empire Semi-Gloss Mahogany/Walnut/Cherry	23,300	21,150
63F	5	4	French Provincial Semi-Gloss Cherry	19,500	17,160
63F	5	4	French Provincial Semi-Gloss Mahogany/Walnut/Cherry	21,790	20,390
63H	5	4	Hepplewhite Semi-Gloss Mahogany/Walnut/Cherry	20,190	18,630
63T	5	4	Satin Ebony	17,490	16,320
63T	5	4	Polished Ebony	14,490	12,750
63T	5	4	Semi-Gloss Mahogany/Walnut/Cherry	19,100	17,370
77E	5	9	Empire Semi-Gloss Mahogany/Walnut/Cherry	23,850	21,570
77E (Ind.)	5	9	Empire Semi-Gloss Cherry	21,800	18,840
77F	5	9	French Provincial Semi-Gloss Mahogany/Walnut/Cherry	22,390	21,150
77F (Ind.)	5	9	French Provincial Semi-Gloss Cherry	20,390	17,790
77H	5	9	Hepplewhite Semi-Gloss Mahogany/Walnut/Cherry	20,590	19,050
77H (Ind.)	5	9	Hepplewhite Semi-Gloss Cherry	18,890	16,320
77T	5	9	Satin Ebony	18,190	16,950
77T	5	9	Polished Ebony	17,430	16,320
77T	5	9	Semi-Gloss Mahogany/Walnut/Cherry	19,650	17,790
90H	6	2	Hepplewhite Semi-Gloss Mahogany/Walnut/Cherry	21,100	19,680
90T	6	2	Satin Ebony	18,690	17,580
90T	6	2	Polished Ebony	17,850	16,950
90T	6	2	Semi-Gloss Mahogany	20,190	18,420
95T	6	10	Satin Ebony	21,100	17,990
95T	6	10	Polished Ebony	20,000	16,990
95T	6	10	Semi-Gloss Mahogany/Walnut/Cherry	30,450	27,450

Steck, Geo. — see Sejung

STEINBERG, GERH.

Verticals

HM-109	43		Continental Polished Ebony	4,790	4,790
HM-109	43		Continental Polished Mahogany/Walnut/Oak/White	4,990	4,990
HM-109	43		Continental Satin Finish	4,990	4,990
HM-109	43		Polished Ebony	4,990	4,990
HM-109	43		Polished Mahogany/Walnut/Oak/White	5,190	5,190
HM-109	43		Satin Finish	5,190	5,190
HM-109	43		Queen Anne Polished Ebony	5,190	5,190
HM-109	43		Queen Anne Polished Mahogany/Walnut	5,390	5,390
HM-109	43		Queen Anne Satin Walnut	5,390	5,390
HM-116	46		Deco (Oval) Leg Polished Ebony	5,390	5,390
HM-116	46		Deco (Oval) Leg Polished Ebony w/Walnut Trim	5,550	5,550
HM-116	46		Deco (Oval) Leg Polished Mahogany/Oak/White	5,790	5,790
HM-116	46		Queen Anne Polished Ebony	5,550	5,550
HM-116	46		Queen Anne Polished Mahogany/Walnut	5,850	5,850
HM-117	46		Decorator Cabinet (square leg) Satin Mahogany	7,050	7,050
EV-123	48		Polished Ebony	5,780	5,780
EV-123	48		Polished Ebony w/Pommele Center	5,850	5,850
EV-123	48		Polished Mahogany/Walnut/Oak/White	5,930	5,930
EV-123	48		Satin Finish	5,930	5,930
EV-123	48		Queen Anne Polished Ebony	5,930	5,930
EV-123	48		Queen Anne Polished Mahogany/Walnut	6,150	6,150
EV-125	49		Polished Ebony	6,150	6,150
EV-125	49		Polished Ebony w/Pommele Center	6,290	6,290
EV-125	49		Polished Mahogany/Walnut/White	6,480	6,480

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
STEINBERG, GERH. (continued)					
EV-125		49	Queen Anne Polished Ebony	6,380	6,380
EV-125		49	Queen Anne Polished Mahogany/Walnut	6,570	6,570
EV-125		49	Queen Anne Polished Mahogany/Walnut w/molding	6,780	6,780

Grands

S-159	5	3	Polished Ebony	17,520	17,520
S-159	5	3	Polished Mahogany/Walnut/Oak/White	18,200	18,200
S-159	5	3	Satin Finish	18,200	18,200
S-159	5	3	Polished Ebony (round leg)	17,850	17,850
S-159	5	3	Polished Mahogany/Walnut (round leg)	18,540	18,540
S-159	5	3	Satin Finish (round leg)	18,540	18,540
S-159	5	3	Queen Anne Polished Ebony	17,850	17,850
S-159	5	3	Queen Anne Polished Mahogany/Walnut	18,540	18,540
S-159	5	3	Queen Anne Satin Finish	18,540	18,540
S-159	5	3	Designer Satin Ebony w/Bubinga Fallboard/Lid	18,890	18,890
S-186	6	1	Polished Ebony	19,580	19,580
S-186	6	1	Polished Mahogany/Walnut/Oak/White	20,460	20,460
S-186	6	1	Satin Finish	20,460	20,460
S-186	6	1	Polished Ebony (round leg)	19,920	19,920
S-186	6	1	Polished Mahogany/Walnut (round leg)	20,790	20,790
S-186	6	1	Satin Finish (round leg)	20,790	20,790
S-186	6	1	Queen Anne Polished Ebony	19,920	19,920
S-186	6	1	Queen Anne Polished Mahogany/Walnut	20,790	20,790
S-186	6	1	Queen Anne Satin Finish	20,790	20,790
S-186	6	1	Designer Satin Ebony w/Bubinga Fallboard/Lid	20,960	20,960

STEINBERG, WILH.

Verticals

IQ 16		46	Polished Ebony	15,390	15,390
IQ 16		46	Satin Beech/Oak/Alder	15,390	15,390
IQ 16		46	Satin Walnut/Mahogany	15,590	15,590
IQ 16		46	Satin Cherry	15,790	15,790
IQ 16		46	Satin Cherry with Yew	17,190	17,190
IQ 24		48.5	Polished Ebony	17,190	17,190
IQ 24		48.5	Satin Beech/Oak/Alder	17,190	17,190
IQ 24		48.5	Satin Walnut/Mahogany	17,790	17,790
IQ 24		48.5	Satin Cherry	18,190	18,190
IQ 24		48.5	Satin Cherry with Yew	18,990	18,990
IQ 24		48.5	"Amadeus" Polished Ebony	18,390	18,390
IQ 24		48.5	"Amadeus" Satin Walnut/Mahogany	18,790	18,790
IQ 28		51	Polished Ebony	20,590	20,590
IQ 28		51	Satin Walnut/Mahogany	20,990	20,990
IQ 28		51	Satin Cherry	21,990	21,990
IQ 28		51	Satin Cherry with Yew	22,590	22,590
IQ 28		51	"Amadeus" Polished Ebony	22,990	22,990
IQ 28		51	"Amadeus" Satin Cherry	22,990	22,990
IQ 28		51	"Passione" Polished Ebony	24,590	24,590
IQ 28		51	"Passione" Satin Walnut/Mahogany	24,990	24,990

Grands

IQ 77	5	8	Polished Ebony	50,990	50,990
IQ 77	5	8	Satin Walnut/Mahogany	54,990	54,990
IQ 77	5	8	Satin Cherry	55,590	55,590
IQ 99	6	4	Polished Ebony	60,790	60,790
IQ 99	6	4	Satin Walnut/Mahogany	68,990	68,990
IQ 99	6	4	Satin Cherry	69,990	69,990

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
STEINGRAEBER & SÖHNE					
<i>This list includes only those models most likely to be offered to U.S. customers. Other models, styles, and finishes are available.</i>					
<i>For pricing information on Steingraeber-Phoenix pianos, please contact the distributor.</i>					
Euro = \$1.40					
Verticals					
122 T	48		Satin Ebony	37,810	37,810
122 T	48		Polished Ebony	38,460	38,460
122 T	48		Polished Sapele Mahogany	43,410	43,410
130 PS/S	51		Satin and Polished Ebony	48,880	48,880
130 PS/S	51		Polished Ebony w/Twist & Change Panels	52,810	52,810
130 PS/S	51		Polished Sapele Mahogany	50,910	50,910
130 PS/S	51		Satin Special Veneers	50,780	50,780
130 PS/S	51		Polished Special Veneers	57,240	57,240
130	51		With SFM action, add'l	1,370	1,370
130 K	51		"Classic" Satin and Polished Ebony	48,880	48,880
130 K	51		"Classic" Polished Ebony w/Twist & Change	52,810	52,810
130 K	51		"Classic" Polished Sapele Mahogany	50,910	50,910
130 K	51		"Classic" Satin Special Veneers	50,780	50,780
130 K	51		"Classic" Polished Special Veneers	57,240	57,240
138 K	54		"Classic" Satin and Polished Ebony	59,930	59,930
138 K	54		"Classic" Polished Ebony w/Twist & Change	57,900	57,900
138 K	54		"Classic" Polished Sapele Mahogany	58,530	58,530
138 K	54		"Classic" Satin Special Veneers	58,410	58,410
138 K	54		"Classic" Polished Special Veneers	64,960	64,960
Grands					
A170 N	5	7	Satin and Polished Ebony	88,960	88,960
A170 N	5	7	Studio Anti-Scratch Lacquer Polished Ebony	86,880	86,880
A170 N	5	7	Satin Mahogany	88,960	88,960
A170 N	5	7	Polished Mahogany	101,360	101,360
A170 N	5	7	Satin Special Veneers	117,850	117,850
A170 N	5	7	Polished Special Veneers	129,530	129,530
A170 K	5	7	"Classicism" Satin and Polished Ebony	101,250	101,250
A170 K	5	7	"Classicism" Studio Anti-Scratch Lacquer Polished Ebony	98,970	98,970
A170 K	5	7	"Classicism" Satin Mahogany	101,250	101,250
A170 K	5	7	"Classicism" Polished Mahogany	113,650	113,650
A170 K	5	7	"Classicism" Satin Special Veneers	130,680	130,680
A170 K	5	7	"Classicism" Polished Special Veneers	143,090	143,090
A170 S	5	7	"Studio" Satin and Polished Ebony	83,080	83,080
A170 S	5	7	"Studio" Studio Anti-Scratch Lacquer Polished Ebony	80,800	80,800
C212 N	7		Satin and Polished Ebony	124,760	124,760
C212 N	7		Studio Anti-Scratch Lacquer Polished Ebony	122,090	122,090
C212 N	7		Polished Ebony w/Burl Walnut or Pyramid Mahogany	135,860	135,860
C212 N	7		Satin Mahogany	124,760	124,760
C212 N	7		Polished Mahogany	137,240	137,240
C212 N	7		Satin Special Veneers	153,890	153,890
C212 N	7		Polished Special Veneers	166,040	166,040
C212 K	7		"Classicism" Satin and Polished Ebony	138,400	138,400
C212 K	7		"Classicism" Polished Ebony w/Burl Walnut or Pyramid Mahogany	149,470	149,470
C212 S	7		"Studio" Satin and Polished Ebony	121,080	121,080
C212 S	7		"Studio" Studio Anti-Scratch Lacquer Polished Ebony	117,760	117,760
D-232	7	7	"Semi-Concert" Polished Ebony	153,630	153,630
E-272	8	11	"Concert" Polished Ebony	211,180	211,180
E-272	8	11	Polished Special Veneers	251,920	251,920

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
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STEINWAY & SONS

These are the prices at the Steinway retail store in New York City, often used as a "benchmark" for Steinway prices throughout the country. Model K-52 in ebony; model 1098 in ebony, mahogany, and walnut; and grand models in ebony, mahogany, and walnut include adjustable artist bench. Other models include regular wood bench. Ebony models are in a satin finish; all other models are in a semigloss finish called "satin lustre."

Verticals

4510	45		Sheraton Satin Ebony	23,800	23,800
4510	45		Sheraton Mahogany	26,500	26,500
4510	45		Sheraton Walnut	27,500	27,500
1098	46.5		Satin Ebony	22,300	22,300
1098	46.5		Mahogany	24,500	24,500
1098	46.5		Walnut	25,300	25,300
K-52	52		Satin Ebony	29,200	29,200
K-52	52		Mahogany	33,100	33,100
K-52	52		Walnut	34,100	34,100

Grands

S	5	1	Satin Ebony	48,900	48,900
S	5	1	Mahogany	54,800	54,800
S	5	1	Walnut	57,100	57,100
S	5	1	Figured Sapele	59,700	59,700
S	5	1	Dark Cherry	60,700	60,700
S	5	1	Kewazinga Bubinga	62,300	62,300
S	5	1	Santos Rosewood	69,100	69,100
S	5	1	East Indian Rosewood	69,900	69,900
S	5	1	African Pommele	70,400	70,400
S	5	1	Macassar Ebony	76,900	76,900
S	5	1	Chinoiserie	67,100	67,100
S	5	1	Hepplewhite Dark Cherry	63,500	63,500
M	5	7	Satin Ebony	55,800	55,800
M	5	7	Mahogany	62,400	62,400
M	5	7	Walnut	64,800	64,800
M	5	7	Figured Sapele	67,500	67,500
M	5	7	Dark Cherry	68,600	67,940
M	5	7	Kewazinga Bubinga	70,300	70,300
M	5	7	Santos Rosewood	77,300	77,300
M	5	7	East Indian Rosewood	78,500	78,500
M	5	7	African Pommele	79,000	79,000
M	5	7	Macassar Ebony	86,100	86,100
M	5	7	Chinoiserie	73,700	73,700
M	5	7	Hepplewhite Dark Cherry	71,700	71,020
M 1014A	5	7	Chippendale Mahogany	78,200	76,980
M 1014A	5	7	Chippendale Walnut	80,200	78,760
M 501A	5	7	Louis XV Walnut	100,700	100,120
M 501A	5	7	Louis XV East Indian Rosewood	117,400	116,000
O	5	10.5	Satin Ebony	62,600	62,600
O	5	10.5	Mahogany	69,900	69,900
O	5	10.5	Walnut	72,500	71,900
O	5	10.5	Figured Sapele	75,300	74,740
O	5	10.5	Dark Cherry	76,500	76,060
O	5	10.5	Kewazinga Bubinga	78,400	78,400
O	5	10.5	Santos Rosewood	85,900	85,900
O	5	10.5	East Indian Rosewood	87,300	87,300
O	5	10.5	African Pommele	87,900	87,900
O	5	10.5	Macassar Ebony	96,900	96,820
O	5	10.5	Chinoiserie	80,700	80,700
O	5	10.5	Hepplewhite Dark Cherry	80,100	75,960
A	6	2	Satin Ebony	72,100	70,980
A	6	2	Mahogany	79,800	79,700

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
STEINWAY & SONS (continued)					
A	6	2	Walnut	82,400	81,320
A	6	2	Figured Sapele	85,600	84,840
A	6	2	Dark Cherry	86,900	86,280
A	6	2	Kewazinga Bubinga	89,300	88,920
A	6	2	Santos Rosewood	97,900	97,900
A	6	2	East Indian Rosewood	99,400	99,400
A	6	2	African Pommele	100,100	100,100
A	6	2	Macassar Ebony	110,100	109,200
A	6	2	Chinoiserie	93,200	93,200
A	6	2	William Steinway Limited Edition Satin Ebony	93,900	93,900
A	6	2	William Steinway Limited Edition East Indian Rosewood	116,900	116,900
B	6	10.5	Satin Ebony	81,200	79,180
B	6	10.5	Mahogany	89,500	88,680
B	6	10.5	Walnut	92,200	90,680
B	6	10.5	Figured Sapele	95,900	94,720
B	6	10.5	Dark Cherry	97,300	96,480
B	6	10.5	Kewazinga Bubinga	100,100	99,220
B	6	10.5	Santos Rosewood	109,700	109,700
B	6	10.5	East Indian Rosewood	111,400	111,400
B	6	10.5	African Pommele	112,400	111,940
B	6	10.5	Macassar Ebony	122,900	121,600
B	6	10.5	Chinoiserie	102,100	102,100
B	6	10.5	Hepplewhite Dark Cherry	102,800	100,100
B	6	10.5	William Steinway Limited Edition Satin Ebony	108,900	108,900
B	6	10.5	William Steinway Limited Edition East Indian Rosewood	142,900	142,900
D	8	11.75	Satin Ebony	123,800	118,780
D	8	11.75	Mahogany	137,900	129,200
D	8	11.75	Walnut	141,300	131,320
D	8	11.75	Figured Sapele	148,600	137,160
D	8	11.75	Dark Cherry	152,500	139,820
D	8	11.75	Kewazinga Bubinga	154,700	142,700
D	8	11.75	Santos Rosewood	169,500	158,500
D	8	11.75	East Indian Rosewood	171,700	159,940
D	8	11.75	African Pommele	173,200	160,380
D	8	11.75	Macassar Ebony	189,300	174,960
D	8	11.75	Chinoiserie	147,900	146,780
D	8	11.75	Hepplewhite Dark Cherry	158,900	145,220

Steinway (Hamburg) Grands

I frequently get requests for prices of pianos made in Steinway's branch factory in Hamburg, Germany. Officially, these pianos are not sold in North America, but it is possible to order one through an American Steinway dealer, or to go to Europe and purchase one there. The following list shows approximately how much it would cost to purchase a Hamburg Steinway in Europe and have it shipped to the United States. The list was derived by taking the published retail price in Europe, subtracting the value-added tax not applicable to foreign purchasers, converting to U.S. dollars (the rate used here is 1 Euro = \$1.40, but is obviously subject to change), and adding approximate charges for duty, air freight, crating, insurance, brokerage fees, and delivery. Only prices for grands in polished ebony are shown here. Caution: This list is published for general informational purposes only. The price that Steinway would charge for a piano ordered through an American Steinway dealer may be different. (Also, the cost of a trip to Europe to purchase the piano is not included!)

S-155	5	1	Polished Ebony	83,900
M-170	5	7	Polished Ebony	91,900
O-180	5	10.5	Polished Ebony	97,500
A-188	6	2	Polished Ebony	104,000
B-211	6	11	Polished Ebony	121,000
C-227	7	5.5	Polished Ebony	142,000
D-274	8	11.75	Polished Ebony	182,700

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
STORY & CLARK					
<i>All Story & Clark pianos include PNOscan, and USB and MIDI connectivity.</i>					
Heritage Series Verticals					
H6		44	Continental Polished Ebony	4,495	4,495
H6		44	Continental Polished Mahogany	4,495	4,495
H6		44	"Huntington" Satin Lacquer Oak/Mahogany	4,895	4,895
H6		44	"Calais" Satin Lacquer Cherry	4,895	4,895
H7		46	"Academy" Satin Lacquer or Polished Ebony	5,795	5,795
H7		46	"Academy" Satin Lacquer Oak	5,795	5,795
Signature Series Verticals					
S8		47	"Cosmopolitan" Polished Ebony	8,295	8,295
Heritage Series Grands					
H50	4	9	"Prelude" Polished Ebony	10,295	9,590
H50	4	9	"Prelude" Polished Mahogany	10,295	10,190
H60	5	1	"Academy" Satin Ebony	11,495	11,190
H60	5	1	"Academy" Polished Ebony	11,495	10,590
H60	5	1	"Academy" Polished Mahogany	11,495	11,190
H60	5	1	"Academy" Polished White	11,495	10,990
H60 QA	5	1	French Provincial Polished Ebony	13,695	11,790
H60 QA	5	1	French Provincial Polished and Satin Mahogany	13,695	13,190
H70	5	7	"Artist Conservatory" Polished Ebony	12,795	11,190
H70	5	7	"Artist Conservatory" Polished Mahogany	12,795	12,390
H80	6	1	"Artist Professional" Polished Ebony	13,495	12,990
H90	6	8	"Artist Semi-Concert" Polished Ebony	17,495	16,590
Signature Series Grands					
S500	4	11	"Manhattan" Semigloss Ebony w/Birdseye Maple Accents	15,995	15,190
S500	4	11	"Manhattan" Semigloss Teak w/Birdseye Maple Accents	15,995	15,190
S500	4	11	"Manhattan" Semigloss Ebony, No Accents	16,195	15,390
S600	5	4	"Cosmopolitan" Polished Ebony	18,895	15,190
S600	5	4	"Melrose" Polished Ebony	18,895	17,190
S600	5	4	"Melrose" Polished Mahogany	18,895	17,790
S600	5	4	"Park West" Satin Ebony	18,895	15,990
S600	5	4	"Park West" Polished Ebony	18,895	15,190
S600	5	4	"Fairfax" Polished Ebony	17,295	16,390
S700	5	9	"Fairfax" Polished Ebony	21,395	17,190
S700	5	9	"Versailles" Satin Lacquer Cherry	21,395	19,990
S700	5	9	"Versailles" Satin Antique Ivory	21,395	20,790
S700	5	9	"Park West" Satin Ebony	21,395	16,390
S800	6	2	"Islander" British Colonial Satin Walnut	22,295	20,790
S800	6	2	"Park West" Polished Ebony	22,295	17,190
S900	7		"Park West" Satin Ebony	24,495	19,590

SUZUKI

The models and prices shown are those listed on Suzuki's website or on Costco.com, through which the pianos are sold.

Verticals

T-43C		43	Continental Polished Ebony	2,800	2,800
T-43C		43	Continental Polished Mahogany	2,900	2,900
T-43		43	Polished Ebony	2,900	2,900
T-43		43	Polished Mahogany	3,000	3,000
T-45		45	Polished Ebony	3,000	3,000
T-45		45	Polished Mahogany	3,100	3,100
T-48		48	Polished Ebony	3,200	3,200
T-48		48	Polished Mahogany	3,300	3,300

*See pricing explanation on page 213.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
SUZUKI (continued)					
Grands					
F-410	4	10	Polished Ebony	5,900	5,900
F-410	4	10	Polished Mahogany	6,000	6,000
F-50	5		Polished Ebony	6,800	6,800
F-50	5		Polished Mahogany	6,900	6,900
F-52	5	2	Polished Ebony	6,600	6,600
F-52	5	2	Polished Mahogany	6,700	6,700
F-55	5	5	Polished Ebony	7,700	7,700
F-55	5	5	Polished Mahogany	7,800	7,800
F-58	5	8	Polished Mahogany	7,700	7,700
F-61	6	1	Polished Ebony	8,500	8,500
F-61	6	1	Polished Mahogany	8,600	8,600

TAYLOR

Verticals

TU 110		44	Satin and Polished Ebony	4,290	4,290
TU 110		44	Satin and Polished Mahogany/Walnut	4,490	4,490
TU 123		48	Satin and Polished Ebony	4,990	4,990
TU 123		48	Satin and Polished Mahogany/Walnut	5,290	5,190
TU 133		52	French Satin and Polished Ebony	5,790	5,590
TU 133		52	French Polished Mahogany/Walnut	5,990	5,790

Grands

TG 145	4	9	Satin and Polished Ebony	9,490	8,590
TG 145	4	9	Satin and Polished Mahogany/Walnut	10,490	9,390
TG 145	4	9	Chippendale Satin and Polished Mahogany/Walnut/Cherry	11,390	10,090
TG 166	5	5	Satin and Polished Ebony	10,790	9,590
TG 166	5	5	Satin and Polished Mahogany/Walnut	11,290	9,990
TG 166	5	5	Chippendale Satin and Polished Mahogany/Walnut/Cherry	12,190	10,690
TG 185	6	1	Satin and Polished Ebony	15,790	13,590
TG 185	6	1	Satin and Polished Mahogany/Walnut	16,490	14,190
TG 185	6	1	Chippendale Satin and Polished Mahogany/Walnut/Cherry	17,290	14,790

VOGEL

Verticals

V-115 M		45	Continental Polished Ebony	13,590	13,380
V-115 M		45	Continental Wood Finish	14,690	14,380
V-115 T		45	Polished Ebony	13,590	13,380
V-115 T		45	Polished Mahogany/White	14,690	14,380
V-121 T		48	Polished Ebony	15,390	14,980
V-121 T		48	Polished Mahogany	16,890	16,380

Grands

V-160 C	5	3	Chippendale Polished Ebony	38,490	35,980
V-160 C	5	3	Chippendale Polished Mahogany/Walnut/White	38,490	35,980
V-160 R	5	3	"Royal" Polished Ebony	36,690	34,380
V-160 R	5	3	"Royal" Polished Mahogany/Walnut/White	38,490	35,980
V-160 RIO	5	3	"Royal" Polished Mahogany Intarsia Oval	43,990	40,980
V-160 RM	5	3	"Royal Marketerie" Polished Flame Mahogany Coffe	41,790	38,980
V-160 T	5	3	Polished Ebony	32,290	30,380
V-160 T	5	3	Polished Mahogany/Walnut/White	33,890	31,780
V-160 TI	5	3	Polished Mahogany Intarsia	43,990	40,980
V-177 C	5	11	Chippendale Polished Ebony	39,590	36,980
V-177 C	5	11	Chippendale Polished Mahogany/Walnut/White	39,590	36,980
V-177 R	5	11	"Royal" Polished Ebony	37,790	35,380
V-177 R	5	11	"Royal" Polished Mahogany/Walnut/White	41,790	38,980
V-177 RI	5	11	"Royal" Polished Mahogany Intarsia	45,490	42,380

*See pricing explanation on page 213.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
VOGEL (continued)					
V-177 RM	5	11	“Royal Marketerie” Polished Flame Mahogany Coffe	42,890	39,980
V-177 T	5	11	Polished Ebony	33,390	31,380
V-177 T	5	11	Polished Mahogany/Walnut/White	35,190	32,980
V-177 TI	5	11	Polished Mahogany Intarsia	45,490	42,380

Vose & Sons — see Everett

WALTER, CHARLES R.

Verticals

1520	43	Satin Ebony	14,902	11,374
1520	43	Semi-Gloss Ebony	15,052	11,478
1520	43	Polished Ebony	15,241	11,610
1520	43	Satin and Polished Walnut	14,464	11,070
1520	43	Satin and Polished Cherry	14,432	11,042
1520	43	Satin and Polished Oak	13,976	10,728
1520	43	Satin and Polished Mahogany	14,705	11,242
1520	43	Italian Provincial Satin Ebony	14,902	11,374
1520	43	Italian Provincial Semi-Gloss Ebony	15,052	11,478
1520	43	Italian Provincial Polished Ebony	15,241	11,610
1520	43	Italian Provincial Satin and Polished Walnut	14,495	11,090
1520	43	Italian Provincial Satin and Polished Mahogany	14,737	11,260
1520	43	Italian Provincial Satin and Polished Oak	13,986	10,738
1520	43	Country Classic Satin and Polished Cherry	14,312	10,956
1520	43	Country Classic Satin and Polished Oak	14,065	10,786
1520	43	French Provincial Satin and Polished Oak	14,490	11,090
1520	43	French Provincial Satin and Polished Cherry/Walnut/Mahogany	14,905	11,374
1520	43	Riviera Satin and Polished Oak	13,944	10,700
1520	43	Queen Anne Satin and Polished Oak	14,600	11,166
1520	43	Queen Anne Satin and Polished Mahogany/Cherry	14,905	11,374
1500	45	Satin Ebony	13,514	10,406
1500	45	Semi-Gloss Ebony	13,760	10,576
1500	45	Polished Ebony (Lacquer)	13,913	10,680
1500	45	Polished Ebony (Polyester)	14,186	10,870
1500	45	Satin and Polished Oak	12,905	9,978
1500	45	Satin and Polished Walnut	13,650	10,500
1500	45	Satin and Polished Mahogany	13,834	10,634
1500	45	Gothic Satin and Polished Oak	13,719	10,510
1500	45	Satin and Polished Cherry	13,808	10,604
All		Chinese-made action instead of Renner, less	1,000	1,000

Grands

W-175	5	9	Satin Ebony	57,893	41,100
W-175	5	9	Semi-Polished and Polished Ebony (Lacquer)	59,418	42,154
W-175	5	9	Polished Ebony (Polyester)	60,031	42,582
W-175	5	9	Satin Mahogany/Walnut/Cherry	60,520	42,924
W-175	5	9	Semi-Polished & Polished Mahogany/Walnut/Cherry	62,087	44,006
W-175	5	9	Open-Pore Walnut	59,048	41,898
W-175	5	9	Chippendale Satin Mahogany/Cherry	62,456	44,264
W-175	5	9	Chippendale Semi-Polished & Polished Mahogany/Cherry	63,965	45,308
W-190	6	4	Satin Ebony	59,428	42,164
W-190	6	4	Semi-Polished and Polished Ebony (Lacquer)	60,953	43,218
W-190	6	4	Polished Ebony (Polyester)	61,498	43,598
W-190	6	4	Satin Mahogany/Walnut/Cherry	62,055	43,988
W-190	6	4	Semi-Polished & Polished Mahogany/Walnut/Cherry	63,627	45,070
W-190	6	4	Open-Pore Walnut	60,583	42,962
W-190	6	4	Satin Oak	57,144	40,578
W-190	6	4	Chippendale Satin Mahogany/Cherry	63,991	45,328
W-190	6	4	Chippendale Semi-Polished & Polished Mahogany/Cherry	65,500	46,372

*See pricing explanation on page 213.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
WEBER					
Traditional/Legend Series Verticals					
WLE 410	43		Continental Polished Ebony		3,467
WLE 410	43		Continental Polished Mahogany/Ivory		3,567
WLE 410L	43		Polished Ebony		3,867
WLE 410L	43		Polished Mahogany/Ivory		3,967
WLE 430	43		French Provincial Satin Cherry		4,794
WLE 430	43		Mediterranean Satin Oak		4,794
WLE 430	43		Queen Anne Satin Cherry/Oak		4,794
WLE 430	43		Satin Mahogany		4,794
WLE 430	43		Satin Oak		5,590
W112	44		Continental Polished Ebony		4,590
W112	44		Continental Polished Mahogany/White		4,790
W112F	44		French Provincial Satin Cherry		4,990
W112F	44		Satin Mahogany		4,990
W114	45		Polished Ebony		4,990
W114	45		Polished Mahogany/White		5,190
W116S	46.5		Satin Ebony		5,590
W116S	46.5		Satin Oak/Walnut		5,590
W121	48		Satin Ebony		5,590
W121	48		Polished Ebony		5,390
W121	48		Polished Mahogany		5,590
WLE 480	48		Polished Ebony		4,794
WLE 480	48		Polished Mahogany/Walnut		4,994
W131	52		Satin Ebony		5,990
W131	52		Polished Ebony		5,790
W131	52		Polished Mahogany		5,990
WLE 520	52		Polished Ebony		5,394
WLE 520	52		Polished Mahogany/Walnut		5,514
Sovereign Series Verticals					
WSF 44	44		French Provincial Satin Cherry		7,994
WSF 44	44		Mediterranean Satin Oak		7,794
WSF 44	44		Satin Mahogany		7,794
WSF 44	44		Queen Anne Satin Cherry/Oak		8,194
WSE 46S	46		Satin Ebony		7,394
WSE 46S	46		Satin Oak/Walnut		7,594
WSE 47	47		Satin and Polished Ebony		7,394
WSE 47	47		Polished Mahogany		7,594
WSE 48	48		Satin and Polished Ebony		7,594
WSE 48	48		Polished Mahogany		7,794
WSE 52	52		Satin and Polished Ebony		8,594
Albert Weber Verticals					
AW 48	48		Polished Ebony		8,794
AW 48	48		Satin Mahogany		9,194
AW 48	48		Satin Bubinga/Rosewood		9,394
AW 52	52		Polished Ebony		10,794
AW 52	52		Satin Bubinga/Rosewood		11,394
Traditional/Legend Series Grands					
W150	4	11	Polished Ebony		10,110
W150	4	11	Polished Mahogany/Walnut/White		10,310
WLG 50S	4	11	Polished Ebony/Ivory		9,814
WLG 50S	4	11	Polished Mahogany		10,014
WLG 50CS	4	11	French Provincial Satin Walnut		10,394
WLG 50L	4	11	Polished Ebony		10,020
WLG 50L	4	11	Polished Mahogany		10,220
WLG 50L	4	11	Satin Cherry		10,394
W157	5	2	Polished Ebony		11,190

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
WEBER (continued)					
W157	5	2	Polished Mahogany/Walnut/White		11,490
WLG 51S	5	2	Polished Ebony		10,874
WLG 51S	5	2	Polished Mahogany/Walnut		10,994
W175	5	9	Polished Ebony		12,390
W175	5	9	Polished Mahogany/Walnut/White		12,890
WLG 57S	5	9	Polished Ebony		12,134
WLG 57S	5	9	Polished Mahogany		12,334
W185	6	1	Polished Ebony		14,190
W185	6	1	Polished Mahogany/Walnut/White		14,790
WLG 60S	6	1	Polished Ebony		12,974

Sovereign Series Grands

WSG 50	4	11	Polished Ebony		14,390
WSG 51	5	2	Satin Ebony		16,594
WSG 51	5	2	Polished Ebony		16,394
WSG 51	5	2	Polished Mahogany/Walnut		16,994
WSG 51	5	2	Satin Walnut		17,194
WSG 51	5	2	Polished Ivory		16,594
WSG 51D	5	2	Queen Anne Satin Mahogany		20,194
WSG 51D	5	2	Queen Anne or Country French Satin Cherry		20,394
WSG 57	5	9	Satin and Polished Ebony		17,594
WSG 57	5	9	Polished Mahogany/Walnut		18,194
WSG 57	5	9	Polished Ivory		17,794
WSG 60	6	1	Satin and Polished Ebony		19,194
WSG 60	6	1	Polished Mahogany/Walnut		20,194
WSG 60	6	1	Satin Walnut		20,394
WSG 60	6	1	Polished Ivory		19,394

Albert Weber Grands

AW 57	5	9	Satin Ebony		23,594
AW 57	5	9	Polished Ebony		23,394
AW 57	5	9	Polished Ebony with Pommele Accents		23,994
AW 57	5	9	Polished Mahogany		23,994
AW 60	6	1	Satin Ebony		24,994
AW 60	6	1	Polished Ebony		24,794
AW 60	6	1	Polished Ebony with Pommele Accents		25,594
AW 60	6	1	Polished Mahogany		25,594
AW 60	6	1	Polished Pommele		28,794
AW 60	6	1	Polished Bubinga		27,594
AW 69	6	10	Satin Ebony		29,794
AW 69	6	10	Polished Ebony		29,594
AW 69	6	10	Polished Pommele		35,994
AW 76	7	6	Satin Ebony		40,994
AW 76	7	6	Polished Ebony		40,794
AW 90	9		Satin and Polished Ebony		58,994

WENDL & LUNG

Verticals

110	43.5	"Stereo" Polished Ebony	6,352	6,352
115	45.5	"Transparent" Satin and Polished Ebony	6,480	6,480
115	45.5	"Transparent" Polished White	6,620	6,620
115	45.5	"Transparent" Satin and Polished Mahogany/Walnut/Bordeaux	6,790	6,790
115	45.5	"Transparent" Satin Cherry/Beech/Maple	6,790	6,790
122	48	"Universal" Satin Ebony	9,900	9,900
122	48	"Universal" Polished Ebony	9,700	9,700
122	48	"Universal" Polished White	9,900	9,900
122	48	"Universal" Satin and Polished Mahogany/Walnut/Bordeaux	10,100	10,100
122	48	"Universal" Satin Cherry/Beech/Maple	10,100	10,100

*See pricing explanation on page 213.

Model	Feet	Inches	Description	MSRP*	SMP*
WENDL & LUNG (continued)					
Grands					
161	5	3.5	“Professional I” Polished Ebony	18,320	18,320
161	5	3.5	“Professional I” Polished Mahogany/White	18,950	18,950
178	5	10	“Professional II” Polished Ebony	21,400	21,400
178	5	10	“Professional II” Polished Mahogany/White	21,700	21,700
218	7	2	“Concert I” Polished Ebony	40,700	40,700
218	7	2	“Concert I” Polished Mahogany/White	41,700	41,700

WYMAN

Verticals

WV108	42.5		Continental Polished Ebony	4,500	3,779
WV108	42.5		Continental Polished Mahogany/Cherry	4,575	3,840
WV110	43		Polished Ebony	5,000	4,057
WV110	43		Polished Mahogany/Cherry	5,075	4,118
WV110	43		Satin Oak	5,800	4,581
WV110	43		Satin Brown Mahogany	5,800	4,581
WV110	43		French Provincial Satin Cherry	5,925	4,647
WV110	43		Country French Satin Oak	5,925	4,647
WV115	45		Polished Ebony	5,263	4,225
WV115	45		Polished Mahogany/Cherry	5,325	4,281
WV118	46		Polished Ebony	6,075	4,754
WV118	46		Satin Walnut	6,138	4,811
WV118DL	46		Polished Ebony w/Chrome Hardware (double leg)	6,190	4,778
WV120	48		Polished Ebony	5,800	4,539
WV120	48		Polished Mahogany	5,875	4,601
WV127	50		Polished Ebony w/Mahogany Trim (straight leg)	8,575	6,585
WV127	50		Polished Ebony w/Mahogany Trim (curved leg)	8,665	6,650
WV132	52		Polished Ebony	7,250	5,713

Grands

WG145	4	9	Polished Ebony	10,963	8,483
WG145	4	9	Polished Mahogany	11,488	8,903
WG160	5	3	Polished Ebony	13,375	9,973
WG160	5	3	Polished Mahogany	13,875	10,383
WG160S	5	3	Polished Ebony (indiv. strung)	14,988	10,780
WG160S	5	3	Polished Mahogany (indiv. strung)	15,513	11,200
WG170	5	7	Polished Ebony	14,950	10,813
WG170	5	7	Polished Mahogany	15,475	11,233
WG170S	5	7	Polished Ebony (indiv. strung)	15,538	11,220
WG170S	5	7	Polished Mahogany (indiv. strung)	16,063	11,640
WG185	6	1	Polished Ebony	17,588	12,825
WG185	6	1	Polished Mahogany	18,125	13,250
All			Satin Finishes, add'l	300	

YAMAHA

Including Disklavier and Silent Piano (formerly MIDIPiano)

Verticals

M460	44		Satin Cherry/Brown Cherry	5,499	5,398
M560	44		Hancock Satin Brown Cherry	6,199	5,998
M560	44		Sheraton Satin Mahogany	6,199	5,998
M560	44		Queen Anne Satin Cherry	6,199	5,998
P22	45		Satin Ebony/Walnut/Oak	6,799	6,498
P660	45		Sheraton Satin Brown Mahogany	7,499	6,998
P660	45		Queen Anne Satin Brown Cherry	7,499	6,998
T118	47		Polished Ebony	5,499	5,499

*See pricing explanation on page 213.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
YAMAHA (continued)					
T118	47		Polished Mahogany/Walnut	5,999	5,998
T121	48		Polished Ebony	8,799	7,998
U1	48		Satin Ebony	11,599	10,398
U1	48		Polished Ebony	10,999	9,998
U1	48		Satin American Walnut	12,299	10,998
U1	48		Polished American Walnut/Mahogany	12,999	11,598
U1	48		Polished White	12,999	11,598
YUS1	48		Satin Ebony	14,499	12,598
YUS1	48		Polished Ebony	13,699	12,198
YUS1	48		Satin American Walnut	14,899	12,998
YUS1	48		Polished American Walnut/Mahogany	17,399	14,998
U3	52		Satin Ebony	16,499	14,198
U3	52		Polished Ebony	15,899	13,798
U3	52		Satin American Walnut	16,199	13,998
U3	52		Polished Mahogany	17,399	14,998
YUS3	52		Polished Ebony	17,399	14,998
YUS3	52		Polished Mahogany	20,399	17,398
YUS5	52		Polished Ebony	19,699	16,798
Disklavier Verticals					
DU1E3	48		Polished Ebony	26,299	21,998
DU1A	48		Polished Ebony	19,999	16,998
DYUS1A	48		Polished Ebony	22,499	18,998
Silent Verticals					
U1SG	48		Polished Ebony	14,999	12,998
YUS1SG	48		Polished Ebony	17,899	15,298
U3SG	52		Polished Ebony	19,799	16,798
YUS3SG	52		Polished Ebony	21,299	17,998
YUS5SG	52		Polished Ebony	24,399	20,498
Grands					
GB1K	4	11	Polished Ebony	14,099	12,598
GB1K	4	11	Polished American Walnut/Mahogany	16,499	14,398
GB1K	4	11	French Provincial Satin Cherry	17,999	15,598
GB1K	4	11	Georgian Satin Mahogany	17,599	15,198
GC1M	5	3	Satin Ebony	23,899	19,998
GC1M	5	3	Polished Ebony	23,299	19,798
GC1M	5	3	Satin American Walnut	25,999	21,798
GC1M	5	3	Polished Mahogany/American Walnut	25,999	21,798
GC1M	5	3	Polished Ivory/White	25,499	21,398
C1	5	3	Satin Ebony	29,699	25,998
C1	5	3	Polished Ebony	29,999	25,598
C1	5	3	Satin American Walnut	34,699	28,798
C1	5	3	Polished American Walnut	35,899	29,798
C1	5	3	Satin and Polished Mahogany	35,899	29,798
C1	5	3	Polished White	32,099	28,398
GC2	5	8	Satin Ebony	29,999	25,398
GC2	5	8	Polished Ebony	29,499	24,598
GC2	5	8	Satin American Walnut	32,999	27,998
GC2	5	8	Polished Mahogany/American Walnut	34,999	29,198
GC2	5	8	Polished Ivory/White	32,999	27,998
C2	5	8	Satin Ebony	35,299	29,398
C2	5	8	Polished Ebony	34,699	28,798
C2	5	8	Satin American Walnut/Oak	38,899	32,198
C2	5	8	Polished American Walnut/Mahogany	40,999	33,998
C2	5	8	Polished White	38,899	32,198
C3	6	1	Satin Ebony	47,899	39,598
C3	6	1	Polished Ebony	46,999	38,598

*See pricing explanation on page 213.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
YAMAHA (continued)					
C3	6	1	Satin American Walnut	52,699	43,398
C3	6	1	Polished Mahogany/American Walnut	55,299	45,398
C3	6	1	Polished White	52,699	43,398
S4B	6	3	Polished Ebony	79,999	65,598
CF4	6	3	Polished Ebony	84,999	84,398
C5	6	7	Satin Ebony	51,299	42,198
C5	6	7	Polished Ebony	49,799	40,998
C5	6	7	Polished Mahogany	64,699	52,998
C6	6	11	Satin Ebony	57,399	47,198
C6	6	11	Polished Ebony	56,799	46,598
C6	6	11	Polished Mahogany	68,499	55,998
S6B	6	11	Polished Ebony	91,099	74,198
CF6	7		Polished Ebony	99,999	94,998
C7	7	6	Satin Ebony	65,999	53,998
C7	7	6	Polished Ebony	65,499	53,598
C7	7	6	Polished Mahogany	74,599	60,998
CFIIS	9		Satin and Polished Ebony	174,999	140,998
CFX	9		Polished Ebony	149,999	140,998
Disklavier Grands					
DGB1CD	4	11	Polished Ebony (playback only)	24,699	20,798
DGB1CD	4	11	Polished Mahogany/Walnut (playback only)	26,999	22,598
DGB1KE3	4	11	Polished Ebony	28,999	24,398
DGB1KE3	4	11	Polished Mahogany/American Walnut	31,999	26,398
DGC1B	5	3	Satin Ebony	33,999	28,198
DGC1B	5	3	Polished Ebony	33,299	27,598
DGC1B	5	3	Polished Mahogany	35,999	29,798
DGC1ME3	5	3	Satin Ebony	39,999	32,998
DGC1ME3	5	3	Polished Ebony	39,399	32,498
DGC1ME3	5	3	Satin American Walnut	41,999	34,598
DGC1ME3	5	3	Polished Mahogany/American Walnut	41,999	34,598
DGC1M4	5	3	Satin Ebony	45,299	37,198
DGC1M4	5	3	Polished Ebony	44,499	36,598
DGC1M4	5	3	Satin American Walnut	46,799	38,398
DGC1M4	5	3	Polished American Walnut/Mahogany	46,799	38,398
DGC1M4	5	3	Polished Ivory/White	46,799	38,398
DGC1MM4	5	3	Satin Ebony	49,899	40,898
DGC1MM4	5	3	Polished Ebony	48,999	40,198
DGC1MM4	5	3	Satin American Walnut	51,499	42,198
DGC1MM4	5	3	Polished American Walnut/Mahogany	51,499	42,198
DGC1MM4	5	3	Polished Ivory/White	51,499	42,198
DC1E3	5	3	Satin Ebony	45,199	37,198
DC1E3	5	3	Polished Ebony	44,599	36,698
DC1E3	5	3	Satin American Walnut	48,499	39,798
DC1E3	5	3	Polished American Walnut	52,499	42,998
DC1E3	5	3	Polished Mahogany	50,999	41,798
DC1M4	5	3	Satin Ebony	56,999	46,598
DC1M4	5	3	Polished Ebony	56,199	45,998
DC1M4	5	3	Satin American Walnut	57,799	47,198
DC1M4	5	3	Polished American Walnut	61,799	50,398
DC1M4	5	3	Satin and Polished Mahogany	61,799	50,398
DC1M4	5	3	Polished White	57,799	47,198
DGC2E3	5	8	Satin Ebony	43,799	35,998
DGC2E3	5	8	Polished Ebony	42,999	35,398
DGC2E3	5	8	Polished Mahogany	48,299	39,598
DGC2E3	5	8	Satin American Walnut	46,999	38,598
DGC2E3	5	8	Polished American Walnut	49,899	40,898
DC2B	5	8	Polished Ebony	44,099	36,298

*See pricing explanation on page 213.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
YAMAHA (continued)					
DC2B	5	8	Polished Mahogany	49,899	40,898
DC2E3	5	8	Satin Ebony	47,999	39,398
DC2E3	5	8	Polished Ebony	47,199	38,798
DC2E3	5	8	Satin American Walnut	52,799	42,398
DC2E3	5	8	Polished American Walnut	55,099	45,098
DC2E3	5	8	Polished Mahogany	52,499	42,998
DC2M4	5	8	Satin Ebony	61,199	49,998
DC2M4	5	8	Polished Ebony	60,399	49,298
DC2M4	5	8	Satin American Walnut	64,899	52,898
DC2M4	5	8	Polished American Walnut/Mahogany	66,799	54,398
DC2M4	5	8	Satin Mahogany	66,799	54,398
DC2M4	5	8	Polished White	64,899	52,898
DC3M4	6	1	Satin Ebony	74,999	60,998
DC3M4	6	1	Polished Ebony	73,999	60,198
DC3M4	6	1	Satin American Walnut	79,799	64,798
DC3M4	6	1	Polished American Walnut/Mahogany	82,299	66,798
DC3M4	6	1	Polished White	79,799	64,798
DC5M4	6	7	Satin Ebony	78,999	64,198
DC5M4	6	7	Polished Ebony	78,299	63,598
DC5M4	6	7	Polished Mahogany	87,099	70,698
DC6M4	6	11	Polished Ebony	83,999	68,198
DC6M4	6	11	Polished Mahogany	95,499	77,398
DC7M4	7	6	Polished Ebony	92,399	74,898
DC7M4	7	6	Polished Mahogany	102,099	82,698
DC7M4	7	6	Polished White	94,999	76,998

Disklavier Pro Grands

DC3M4PRO	6	1	Polished Ebony	80,199	65,098
DS4M4PROB	6	3	Polished Ebony	114,499	92,598
DC5M4PRO	6	7	Polished Ebony	83,999	68,198
DC6M4PRO	6	11	Polished Ebony	89,799	72,798
DS6M4PROB	6	11	Polished Ebony	124,999	100,998
DC7M4PRO	7	6	Polished Ebony	98,199	79,498
DCFIIISM4PRO	9		Polished Ebony	217,399	174,898

Silent Grands

C1S	5	3	Polished Ebony	35,499	29,398
C2S	5	8	Polished Ebony	37,799	31,198
C3S	6	1	Polished Ebony	49,999	40,998
C5S	6	7	Polished Ebony	53,599	43,898
C6S	6	11	Polished Ebony	58,799	47,998
C7S	7	6	Polished Ebony	66,099	53,898

YOUNG CHANG

Traditional Series Verticals

T-109	43		Continental Polished Ebony		3,467
T-109	43		Continental Polished Mahogany/Ivory		3,567
AF-108	43.5		Satin Mahogany		3,987
AF-108	43.5		French Provincial Satin Cherry		3,987
AF-108	43.5		Queen Anne Satin Oak/Cherry		3,987
AF-108	43.5		Mediterranean Satin Oak		3,987
T-110	44		Polished Ebony		3,867
T-110	44		Polished Mahogany/Ivory/White		3,967
Y112	44		Continental Polished Ebony		4,390
Y112	44		Continental Polished Mahogany/White		4,590
Y112F	44		French Provincial Satin Cherry		4,790
Y112F	44		Satin Mahogany		4,790
Y114	45		Polished Ebony		4,790

*See pricing explanation on page 213.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
YOUNG CHANG (continued)					
Y114	45		Polished Mahogany/White	4,990	
T-116E	46.5		Polished Ebony with Chrome	4,597	
T-116S	46.5		Satin Ebony/Walnut/Oak	4,997	
Y116S	46.5		Satin Ebony	5,390	
Y116S	46.5		Satin Oak/Walnut	5,390	
T-121	48		Polished Ebony	4,794	
T-121	48		Polished Mahogany/Walnut	4,994	
Y121	48		Satin Ebony	5,390	
Y121	48		Polished Ebony	5,190	
Y121	48		Polished Mahogany	5,390	
T-131	52		Polished Ebony	5,394	
T-131	52		Polished Mahogany/Walnut	5,514	
Y131	52		Satin Ebony	5,790	
Y131	52		Polished Ebony	5,590	
Y131	52		Polished Mahogany	5,790	
Professional Artist Series Verticals					
PF-110	43.5		Satin Mahogany	7,794	
PF-110	43.5		French Provincial Satin Cherry	7,994	
PF-110	43.5		Mediterranean Satin Oak	7,794	
PF-110	43.5		Queen Anne Satin Cherry/Oak	8,194	
PE-116S	46.5		Satin Ebony	7,394	
PE-116S	46.5		Satin Oak/Walnut	7,594	
PE-118	47		Satin and Polished Ebony	7,394	
PE-118	47		Polished Mahogany	7,594	
PE-121	48		Satin and Polished Ebony	7,594	
PE-121	48		Polished Mahogany	7,794	
PE-131	52		Satin and Polished Ebony	8,594	
Platinum Edition Verticals					
YP-48	48		Polished Ebony	8,794	
YP-48	48		Satin Mahogany	9,194	
YP-48	48		Satin Bubinga/Rosewood	9,394	
YP-121SE	48		"50th Anniversary" Satin Ebony	9,594	
YP-121SE	48		"50th Anniversary" Polished Ebony	9,594	
YP-49	49		Polished Ebony	9,994	
YP-49	49		Satin Mahogany	9,994	
YP-52	52		Polished Ebony	10,794	
YP-52	52		Satin Bubinga/Rosewood	11,394	
Traditional Series Grands					
GS-150	4	11	Polished Ebony/Ivory	9,814	
GS-150	4	11	Polished Mahogany/Walnut	10,014	
GS-150C	4	11	French Provincial Satin Mahogany/Walnut/Cherry	10,394	
GS-150L	4	11	Polished Ebony	10,020	
GS-150L	4	11	Polished Mahogany	10,220	
Y150	4	11	Polished Ebony	9,910	
Y150	4	11	Polished Mahogany/Walnut/White	10,110	
GS-157	5	2	Polished Ebony	10,874	
GS-157	5	2	Polished Mahogany/Walnut	10,994	
Y157	5	2	Polished Ebony	10,990	
Y157	5	2	Polished Mahogany/Walnut/White	11,390	
GS-175	5	9	Satin and Polished Ebony	12,134	
Y175	5	9	Polished Ebony	12,190	
Y175	5	9	Polished Mahogany/Walnut/White	12,690	
GS-185	6	1	Satin and Polished Ebony	12,974	
Y185	6	1	Polished Ebony	13,990	
Y185	6	1	Polished Mahogany/Walnut/White	14,590	

*See pricing explanation on page 213.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
YOUNG CHANG (continued)					
Professional Artist Series Grands					
PG-150	4	11	Polished Ebony		14,390
PG-157	5	2	Satin Ebony		16,594
PG-157	5	2	Polished Ebony		16,394
PG-157	5	2	Polished Mahogany/Walnut		16,994
PG-157	5	2	Satin Walnut		17,194
PG-157	5	2	Polished Ivory		16,594
PG-157D	5	2	Queen Anne Satin Mahogany		20,194
PG-157D	5	2	Queen Anne and Country French Satin Cherry		20,394
PG-175	5	9	Satin and Polished Ebony		17,594
PG-175	5	9	Polished Mahogany/Walnut		18,194
PG-175	5	9	Polished Ivory		17,794
PG-175NCS	5	9	Antique Satin Cherry		19,978
PG-185	6	1	Satin and Polished Ebony		19,194
PG-185	6	1	Polished Mahogany/Walnut		20,194
PG-185	6	1	Satin Walnut		20,394
PG-185	6	1	Polished Ivory		19,394
Platinum Edition Grands					
YP-175	5	9	Satin Ebony		23,594
YP-175	5	9	Polished Ebony		23,394
YP-175	5	9	Polished Ebony w/Pommele Accents		23,994
YP-175	5	9	Polished Mahogany		23,994
YP-185	6	1	Satin Ebony		24,994
YP-185	6	1	Polished Ebony		24,794
YP-185	6	1	Polished Ebony w/Pommele Accents		25,594
YP-185	6	1	Polished Mahogany		25,594
YP-185	6	1	Polished Bubinga		27,594
YP-185	6	1	Polished African Pommele		28,794
YP-208	6	10	Satin Ebony		29,654
YP-208	6	10	Polished Ebony		29,594
YP-208	6	10	Polished Pommele		35,994
YP-228	7	6	Satin Ebony		40,994
YP-228	7	6	Polished Ebony		40,794
YP-275	9		Polished Ebony		46,994

*See pricing explanation on page 213.

ELECTRONIC PLAYER-PIANO ADD-ON (RETROFIT) SYSTEMS AND PRICES

Prices for electronic player-piano add-on (retrofit) systems vary by installer, and by options and accessories chosen. The following are manufacturers' suggested retail prices for installed systems, options, and accessories. The usual dealer discounts may apply, especially as an

incentive to purchase a piano. Prices for player-piano brands that are installed only by the piano manufacturer, such as Yamaha Disklavier and Bösendorfer CEUS, are included in the acoustic piano Models & Prices section of this publication.

<i>Model/Option</i>	<i>MSRP</i>
LIVE PERFORMANCE	None provided
PIANODISC	
Opus7 "Opulence," factory-installed or retrofitted	19,295
Opus7 "Opulence," with iQ	20,495
Opus7 "Luxury," factory-installed or retrofitted	15,295
Opus7 "Luxury," with iQ	16,495
Opus7 Performance Package option	3,435
228CFX System, factory-installed or retrofitted:	
Playback only	7,695
Add for MX (Music Expansion) Platinum (64MB)	2,069
Add for MX (Music Expansion) Basic (32MB)	1,448
Add for SymphonyPro Sound Module	1,345
Add for TFT MIDI Record system	1,868
Add for PianoMute Rail	688
Add for amplified speakers, pair	764
PianoCD System	6,895
iQ Extreme (w/iPod Touch 32G included)	7,355
iQ iPod Classic (w/iPod Classic included)	7,295
iQ Multimedia (DVD/CD-USD-SD)	7,095
iQ Alone (without control unit)	6,395
Sync-A-Vision (Ebony)	11,495
Sync-A-Vision (White, Mahogany, or Walnut)	11,795
Sync-A-Vision with iQ (Ebony)	14,999
Sync-A-Vision with iQ (White, Mahogany, or Walnut)	15,299
QuietTime GT-2 (Control unit w/ Piano and Organ sounds, MIDI Strip, MIDI interface board, pedal switch, cable, headphon, power supply, PianoMute rail)	2,995
QuietTime MagicStar (Same as above but with full General MIDI sound set)	3,395
MIDI Controller (TFT MIDI Strip, MIDI interface board, pedal switch, cable, power supply)	2,055

<i>Model/Option</i>	<i>MSRP</i>
PIANOFORCE	
Includes pedal solenoid, two amplified speakers, remote control	5,995
QRS PIANOMATION	
Pianomation 2000C with pedal solenoid and sostenuto trapwork	6,585
Pianomation 2000CD+ with pedal solenoid and sostenuto trapwork	6,985
Pianomation Petine with pedal solenoid, sostenuto trapwork, and amplified speaker	7,980
Pianomation Ancho with pedal solenoid, sostenuto trapwork, and amplified speaker	8,380
Pianomation Ancho with pedal solenoid, sostenuto trapwork, amplified speaker, PNOscan, stop rail, and headphones	11,470
Amplified Speaker, each	395
PNOscan record strip, installed	2,290
SilentPNO, installed (record strip, mute rail, sound module, headphones)	3,595
Grand Piano Mute Rail (alone), installed	395
NetPiano, Lifetime Subscription, Pianomation Owner	2,995
Qsync	1,595



IF YOU'VE READ any of the “**Brand and Company Profiles**” on the acoustic side, you'll see that discussions of digital makes and models is of a very different nature. For one thing, although a few manufacturers of digital pianos can trace their roots back over 100 years, such histories, while occasionally fascinating, have little or no relevance to a type of instrument that has existed for only a few dozen years. For another, whereas acoustic piano makers may boast of using slowly grown spruce carefully harvested from trees on north-facing slopes in the Bavarian Alps, there are no stories from digital piano makers of silicon carefully harvested from isolated south-facing beaches during the second low tide of October; no tales of printed circuit boards still crafted by hand as they've been for generations, or descriptions of internal cable harnesses made of only the finest German wire. And while it's interesting to know who was the first to introduce a particular feature, digital

pianos, like all modern electronic products, are very much a matter of “What have you done for me *lately*?”

Even more than in the section dedicated to acoustic pianos, the descriptions provided here are only half the story, and must be used in conjunction with the chart of “**Digital Piano Specifications and Prices**” if you are to have a clear picture of a given brand's offerings. In some cases, little information is available or forthcoming regarding a brand, and much that could have been included would simply be a reiteration of marketing statements. In others, specifications or descriptions available from a manufacturer have been in conflict, as when specifications on their website say one thing and the owner's manual says something else. While every effort has been made to ensure the accuracy of these listings and descriptions, some discrepancies will have undoubtedly slipped through.

Adagio

Kaysound
2165 46th Avenue
Lachine, Quebec H8T 2P1
Canada
514-633-8877
www.adagiopianos.com

Adagio is a division of Kaysound, a Canadian-based distributor of music products. There are nine models of Adagio digitals, including verticals, grands, and ensembles. Kaysound recently introduced three models under the Kingston label.

Behringer

Behringer USA, Inc.
18912 North Creek Parkway, Suite 200
Bothell, Washington 98011
425-672-0816
www.behringer.com

Founded in Germany in 1989 by Uli Behringer, this company is primarily focused on professional audio products, but also makes electric guitars and digital pianos. Their digital pianos, available for some time in Europe, are now coming to North America. Two models are available: one grand, one vertical.

Brodmann

Piano Marketing Group LLC
752 East 21st Street
Ferdinand, Indiana 47532
812-630-0978
gary.trafton@brodmann-pianos.com
www.brodmann-pianos.com

The Joseph Brodmann Group, based in Vienna, Austria, entered the digital piano market this year with six models of vertical piano. Brodmann also markets two vertical models under the Taylor brand.

Casio

Casio USA
570 Mount Pleasant Avenue
Dover, New Jersey 07801
973-361-5400
www.casio.com

Kashio Tadao established Casio in 1946. Originally a small subcontractor factory that made parts and gears for microscopes, Casio built Japan's first electric calculator in 1954, which began the company's transformation into the consumer-electronics powerhouse it is today. Perhaps best known for its calculators, digital cameras, and watches, Casio entered the musical instrument business with the launch of the Casiotone in 1980.

Casio's current line of digital pianos consists of three vertical and three slab models. The Privia line's PX-130 and PX-330 slabs are the least expensive ensemble models, and offer an optional stand-and-pedal module that turns them into three-pedal pianos with support for half-pedaling. The PX-130, at a mere 25 pounds, is also the lightest digital piano. Some vertical models are marketed under the Celviano label. Casio digital pianos are available at music retailers, consumer-electronics and club stores, and online. Casio has more models under \$1,000 than any other manufacturer.

Galileo

Galileo Music Corporation
P.O. Box 633
Falmouth, Massachusetts 02541
508-457-6771
www.galileomusic.com

Galileo is the digital piano brand of Viscount, an Italian company that traces its roots back to accordion builder Antonio Galanti, who built his first instrument in 1890.

The Galanti accordion factory was opened in 1898 by Antonio's son Egidio Galanti, whose own sons, Matteo and Marcello, became the driving forces behind General music and Viscount, respectively. Viscount began manufacturing electronic organs in the 1960s, with digital pianos following in the late 1980s. Today, Viscount is run by the fourth generation of the Galanti family, Marcello's son Mauro and daughter Loriana.

There are currently ten models in the Galileo line, including three verticals and seven grands. The grands use a 19-ply wood rim like that of an acoustic grand. Galileo offers its Concerto model in the most ornate traditional wood cabinet currently available.

Kawai

Kawai America Corporation
2055 East University Drive
Rancho Dominguez, California 90220
310-631-1771
800-421-2177
info@kawaius.com
www.kawaius.com

For company background, see the Kawai listing in the "**Brand and Company Profiles**" for acoustic pianos.

Kawai entered the electronic organ market in 1960, and produced its first digital piano in 1985. Today, Kawai's lineup features 15 models, many of them new this year. Kawai's digital piano line comprises three groups: the Concert Performer (CP) and ES ensemble pianos; the standard digital piano line, consisting of the Concert Artist (CA), CL, and CN models; and Professional Products, including the CE, EP, and MP lines. The Kawai CA91 was the first digital piano to use a transducer-driven soundboard for a more natural piano sound, a feature also available on its replacement, the CA93. The CP ensemble models have undergone a complete makeover, with all models now sporting touch-screen technology. The top-of-the-line CP209 ensemble grand is also available with two different levels of factory-installed PianoDisc player-piano system. If you're after a huge number of voices, the models at the upper end of the CP line come with over 1,000.

Kawai uses five different actions in its digital pianos; two new ones, introduced this year with the new CA and CP piano models, appear to be replacing three older ones. Specifically, the new midrange Real Hammer (RH) action seems to be replacing the Advanced Hammer Action III (AHA III) and Advanced Hammer Action IV (AHA IV), and the new top-of-the-line Realistic Material, Realistic Mechanism, Realistic Motion

(RM3) action is replacing the AWA PRO II action. The RM3 action has wood keys, Ivory Touch (simulated ivory) keytops, and, on the CA93, CP209, and CP179 models, simulated escapement.

Kawai has initiated on its website an online store that allows customers to purchase five models of digital piano normally sold only through bricks-and-mortar piano dealers. The pianos are delivered by the closest stocking dealer. In Europe it has been possible for some time to purchase name-brand home digital pianos online; this marks the first time this arrangement is being tried in North America.

Ketron

CMC Distributors
1510 Bath Avenue
Brooklyn, New York 11228
800-554-5982
www.ketronusa.com

Italian producer Ketron, established in 1981, began by making portable organs. The company introduced its first digital pianos in 1998, and expanded that product line in 2002. Ketron currently offers six models, including slabs, verticals, and a grand.

Ketron did not respond to requests for information.

Kingston

See Adagio

Kohler

See Samick

Korg

Korg USA, Inc.
316 South Service Road
Melville, New York 11747
631-390-6800
www.korg.com

Korg was founded in 1962 to produce its first product, an automatic rhythm machine, and in 1972 entered the electronic-organ market. The LP-10 stage piano appeared in 1980, and its first digitally sampled piano, the SG1, was introduced in 1986. This year Korg expanded its digital piano offerings from five to seven models, including the new entry-level model SP170 at only \$499.

Following Kawai's lead, Korg recently announced plans to sell its home digital pianos online (see Kawai, above).

Kurzweil (Young Chang)

Kurzweil Music Systems
19060 South Dominguez Hills Drive
Rancho Dominguez, California 90220
310-637-2000
www.kurzweilmusicsystems.com

Legendary inventor Ray Kurzweil, perhaps best known for having developed a reading machine for the blind, launched Kurzweil Music Systems in 1983, following conversations with Stevie Wonder about the potential for combining the control and flexibility of the computer with the sounds of acoustic instruments. The result was the Kurzweil K250, launched in 1984. In 1990, Kurzweil Music Systems was purchased by Young Chang, which continues to operate the division today.

The Kurzweil line consists of 14 models. The new X-PRO series, which includes a vertical, a mini-grand, and a baby grand, is based on Kurzweil's powerful PC3X professional keyboard. The SP line of stage pianos is available from music retailers and online sources, while the X-PRO and Mark series of verticals and grands is available only through traditional piano dealers. Kurzweil partners with Boston Acoustics in the design of speakers and enclosures for some models. All Kurzweil models employ Italian Fatar actions.

M-Audio

M-Audio
5795 Martin Rdoad
Irwindale, California 91706
626-633-9050
www.m-audio.com

M-Audio (formerly Midiman) is a business unit of Avid Technology, Inc., founded in 1987. Avid also operates Digidesign, producer of the recording-industry standard Pro Tools software, the popular and powerful Sibelius notation software, and professional video-production products. M-Audio makes and sells a wide variety of music-production hardware, including audio/MIDI computer interfaces and monitor speakers. The company has withdrawn from its brief sojourn in the home digital piano market, leaving only the ProKeys88 slab model.

ORLA

Wyman Piano Company (North American distributor)
P.O. Box 506
Colusa, California 95932
615-356-9143
www.wymanpiano.com

In 1957, Nazzareno Orlandoni established Orla di Orlandoni & Company to manufacture parts for accordions and reed organs. In 1965, “Mimmo,” as Orlandoni was known, was joined by Alfio Monaci, and the company renamed ORLA. Today, ORLA remains a family business, with Alfio Monaci’s son Enrico at the helm.

In 2009 the ORLA product line encompasses digital pianos, home organs, church organs, portable keyboards, accordions, and accordion sound modules. In the North American market ORLA offers nine models of digital piano: four verticals, two grands, and three stage pianos.

Roland

Roland Corporation U.S.
5100 South Eastern Avenue
Los Angeles, California 90040
323-890-3700
www.rolandus.com

To simply say that Roland Corporation was established in 1972 would be to ignore one of the most compelling stories in the realm of digital pianos. Ikutaro Kakehashi started down the path to Roland Corporation at the age of 16, when he began repairing watches in post-war Japan. His enthusiasm for music soon evolved into repairing radios in addition to watches and clocks. At the age of 20, Kakehashi contracted tuberculosis. After three years in the hospital, he was selected for the trial of a new drug, streptomycin, and within a year he was out of the hospital.

In 1954, Kakehashi opened Kakehashi Musen (Kakehashi Radio). Once again his interest in music intervened, this time leading him to develop a prototype organ. In 1960, Kakehashi Radio evolved into Ace Electronic Industries. The FR1 Rhythm Ace became a standard offering of the Hammond Organ Company, and Ace Electronic Industries flourished. Guitar amplifiers, effects units, and more rhythm machines were developed, but as a result of various business-equity involvements, Ace was inadvertently acquired by a company with no interest in musical products, and Kakehashi left in March 1972. One month later, Kakehashi established Roland Corporation. The first Roland product, not surprisingly, was a rhythm box.

Fast-forward to 1986, when the introduction of the RD1000 stage piano was Roland’s first entry in what would become the digital piano category. Today Roland offers 24 models of digital piano covering every facet of the category: slabs, verticals, grands (including moving-key player pianos), ensembles, and stage pianos. Some Roland digital pianos are even assembled in the U.S. at the Roland-owned Rodgers Organ factory, in Hillsboro, Oregon.

Of particular interest to those looking for educational features are the HPi models, which include a substantial suite of educational capabilities supported by a music-desk-mounted LCD screen. The newly introduced model LX10 adds a traditional-looking vertical piano to the line. Roland can also lay claim to the most extensive collection of model designations in the world of digital pianos. While this is hardly a drawback, it does present a challenge when sorting through the model lineup; the chart of “**Digital Piano Specifications and Prices**” will help to clarify things.

The V-Piano, introduced last year, is the first digital piano to rely entirely on physical modeling as its tonal source. Physical modeling breaks down a piano’s sound into discrete elements that can be represented by mathematical equations, and creates the tone in real time based on a complex series of calculations. There are no acoustic piano samples. For more information about physical modeling, please see, elsewhere in this issue, “**Digital Basics, Part 1: Imitating the Acoustic Piano**” and “**My Other Piano Is a Computer: An Introduction to Software Pianos.**”

The big news from Roland this year is the release of its new HP models. The HPs are the core of Roland’s home digital piano offering, and the latest models share Roland’s new SuperNATURAL® piano sound engine, differing from each other primarily in the specifications of their audio systems and actions.

Samick

Samick Music Corporation
1329 Gateway Drive
Gallatin, Tennessee 37066
800-592-9393
www.kohlerdigitalpianos.com

Samick is in the process of expanding its presence in the digital piano market. Until this year, Samick’s line of digital pianos consisted only of four grands and three verticals, marketed under the Kohler brand. This year, Samick has added one vertical and one grand under its new Symphonia label, and the first digital model, the

Ebony 2, under the Samick label. The Ebony 2 is a very contemporary-looking instrument, with a decidedly piano-focused voice set and a particularly robust 180-watt audio system. Thanks to Infrasonic, Samick's pro-audio subsidiary, Samick's digital pianos feature some of the most potent audio systems available. Samick also tends to offer more finish options than many other brands. The KD165 grand is the only digital available with curved French Provincial-style legs. Samick uses Italian Fatar TP30 actions in most of its models.

Suzuki

Suzuki Corporation
P.O. Box 710459
Santee, California 92072
800-854-1594
www.suzukimusic.com

Suzuki sells its line of digital pianos online through Costco. Models change relatively frequently; at the time of writing, five vertical models were available.

Taylor

See Brodmann

Williams

Williams Pianos
P.O. Box 5111
Thousand Oaks, California 91359
www.williams pianos.com

Williams digital pianos, a house brand of Guitar Center, are also available through Guitar Center's Musician's Friend e-commerce website and two other e-commerce sites. There are four models from Williams, including three verticals, and one slab with an optional stand. These are entry-level instruments with light-weighted actions.

Wurlitzer (Baldwin)

Baldwin Piano Company
309 Plus Park Blvd.
Nashville, Tennessee 37217
800-876-2976
www.baldwinpiano.com

Wurlitzer has withdrawn from the digital piano market.

Yamaha

Yamaha Corporation of America
P.O. Box 6600
Buena Park, California 90622
714-522-9011
800-854-1569
infostation@yamaha.com
www.yamaha.com

For company background, see the Yamaha listing in the "**Brands and Company Profiles**" for acoustic pianos.

Yamaha Corporation is the world's largest producer of musical instruments—from the obvious (pianos) to the slightly obscure (bassoon), Yamaha makes it. Yamaha entered the world of electronic instruments in 1959, when it introduced the first all-transistor organ. In 1971, because no manufacturer would develop an integrated circuit (IC) for Yamaha's relatively low-volume demand, the company built its own IC plant. Jumping ahead to 1983, the introduction of the first Yamaha Clavinova, the YP-40, marked the beginning of what we now call the digital piano. Today, Yamaha's 34 models of digital piano (not counting different finishes) constitute the broadest range of any manufacturer. The downside is that deciphering the variety of options—slabs, verticals, grands, stage pianos, ensemble pianos, designer digitals, hybrids—can be a bit daunting. And then there are the sub-brands: Clavinova, Modus, and Arius.

Clavinova digital pianos include the standard CLP line and the ensemble CVP line, and are available only through piano dealers. New to the CLP line, the CLP-S300 sports a more traditional vertical-piano look while retaining the advantage of a small footprint. The Modus models, Yamaha's series of designer digitals, are functionally similar to the CLP line but with modern-looking cabinets. (The Modus H01 and H11 are perhaps the most striking visual designs among digital pianos.) They are now available online through authorized dealers. Arius represents Yamaha's economy line of digital verticals, including the long-popular YDP223 model.

This year Yamaha introduced new models with new technology to its CP line of stage pianos. The CP1 is a physical-modeling instrument featuring Yamaha's new Spectral Component Modeling (SCM) technology. Its less expensive siblings, the CP5 and CP50, feature a combination of SCM and Advanced Wave Memory (AWM) sampling. The CP1 and CP5 also include the new NW-Stage action.

Yamaha's Internet Direct Connect (IDC) is unique in the digital-piano world. Available on most Clavinova and Modus models, IDC allows owners to download Yamaha's Digital Music Notebook sheet music, download new styles, listen to music (via a subscription service similar to Disklavier Radio), and take lessons.

Six different actions are used in Yamaha digitals. In order of increasing quality, they are: Graded Hammer Standard (GHS), Graded Hammer Effect (GHE), Graded Hammer 3 (GH3), Natural Wood (NW), Natural Wood Stage (NW-Stage), and the grand piano action used in the AvantGrand models.

Last year Yamaha introduced its game-changing AvantGrand hybrid piano. Only time will tell how hybrid pianos will alter the piano landscape, but we predict that the AvantGrand will displace the sales of many similarly priced acoustic models—including Yamaha's own. For more information about the AvantGrand, see the article on "[Hybrid Pianos](#)" elsewhere in this issue.



In the chart that follows, we have included those features and specifications about which buyers, in our experience, are most likely to be curious. However, many models have more features than are shown here. Listings are sorted in the following order: first by brand; then, within each brand, by type (standard digitals, then ensemble digitals); within each type, by physical form (grand, console, or slab); and finally, by suggested price. See the various articles on digital pianos elsewhere in this publication for more information about each of the terms defined below, shown in the order in which they appear in the chart.

Form The physical form of the model: G=Grand, V= Vertical (Console), S=Slab.

Ensemble A digital piano with easy-play accompaniments (not just rhythms).

Finish The wood finishes or colors available for a particular model (not specified for slab models unless multiple finishes are available). Multiple finish options are separated by a slash (/). A manufacturer's own color term is used where a generic term could not be determined. Real-wood veneers are in *italics*.

Estimated Price This is our estimate of the price you will pay for the instrument. For digitals sold online or through chain and warehouse outlets, this price is the Minimum Advertised Price (MAP) and is shown in *italics*. For digitals sold only through bricks-and-mortar piano dealers, the price shown is based on a profit margin that piano dealers typically aspire to when selling digitals, including an allowance for incoming freight and setup. Discounts from this price, if any, typically are small. For more information on MAP and other pricing issues, please read "**Buying a Digital Piano**," elsewhere in this issue.

MSRP Manufacturer's Suggested Retail Price, also known as "list" or "sticker" price. Not all manufacturers use them.

Voices The number of different musical voices the instrument can produce.

Key Off Indicates the presence of Key Off samples.

Sustain Samples Indicates the presence of samples with the sustain pedal depressed (allowing the strings to vibrate sympathetically).

String Resonance Indicates the presence of String Resonance.

Rhythms/Styles The number of rhythm patterns available.

Polyphony The maximum number of sounds the instrument can produce simultaneously.

Total Watts Total combined amplifier power.

Speakers The number of individual speakers.

Piano Pedals The number of piano pedals supplied with the model. A number in parentheses indicate the number of optional pedals.

A	Ash
AG	Amber Glow
Bk	Black
C	Cherry
DB	Deep Brunette
E	Ebony
Iv	Ivory
M	Mahogany
MD	Mahogany Decor
O	Oak
Or	Orange
P	Polished (used with a wood or color designation)
R	Rosewood
Rd	Red
Sr	Silver
VR	Velvette Rouge
W	Walnut
WG	Wood Grain (wood type not specified)
Wt	White

Half Pedal Indicates that the model supports half-pedaling. Many manufacturers do not specify this capability.

Action Indicates the type of action used, if specified.

Escapement Indicates the presence of escapement feel. Models using acoustic-piano actions with actual escapement are indicated by an underlined Y.

Wood Keys Indicates actions with wooden keys.

Ivory Texture Indicates actions with ivory-textured keytops.

Player Moving Keys Indicates that the keys move during playback of recordings.

Vocal Support The model supports some level of vocal performance. This support can vary from the piano simply having a microphone input, to its having the ability to produce the vocalist's voice in multi-part harmony, to pitch-correct the notes sung by the vocalist, or to alter the original voice.

Educational Features The model includes features that specifically support the learning experience. Note that while the ability to record and play back is an important learning tool, it is present on almost all models and so is not included in this definition.

External Memory Indicates the type of external memory accessible.

USB to Computer Indicates the model's ability to interface with a Mac or PC via USB cable.

Recording Tracks The number of recordable tracks.

Warranty (Parts/Labor) Indicates the manufacturer's warranty coverage period: the first number is the length of the parts coverage; the second number is the length of the labor coverage. Single digits indicate years; double digits indicate days.

Dimensions Width, Depth, and Height are rounded to the nearest inch. If space is particularly tight, refer to the manufacturer's specifications for the model's exact dimensions. Note that grand height measurements sometimes indicate the piano's height with its lid up.

Weight Weight of the model rounded to the nearest pound.

Brand & Model	Form	Ensemble	Finish	Estimated Price	MSRP	Voices	Key Off	Sustain Samples	String Resonance	Rhythms/Styles	Polyphony	Total Watts	Speakers	Piano Pedals	Half Pedal
Adagio															
PDP-100	V		O	1,199		128				100			2	1	
KDP-18	V		C	1,499		8						20	2	1	
KDP-8823	V		W	1,699		12					64	80	2	3	
KDP-8865	V		MP/EP	1,995	2,495	8					64	80	4	3	
KDP-8826	V		EP/MP	2,199		128				99	64	60	4	3	
KDP-8838	V		EP	2,799		128				200	64	80	2	3	
KDP-8816	V	E	MP/EP	2,495	2,995	128				99	64	60	4	3	
KDP-8834D	V	E	MP/EP	3,495	3,995	128				99	32	80	4	3	
GDP-8800	G	E	EP	2,295	5,599	128				200	64	80	4	3	
Behringer															
EG2180-BK	V		WG	649	959	14					64	80		3	
EG8180	G		EP	1,499	2,209	14					64	80		3	
Brodmann															
BDP 10	V		R	1,271	1,295	8						40	2	3	
BDP 15	V		R/Bk	1,362	1,495	8						40	2	3	
BDP 100	V		R/Bk/ M	1,453	1,895	8						40	4	3	
BDP 20	V		R/Bk	1,507	1,695	16						70	4	3	
BDP 150	V		R/Bk/ M	1,562	1,995	8						40	4	3	
BDP 500	V		EP	1,816	2,495	16						70	4	3	
BDP 500	V		WtP/ WP	1,907	2,495	16						70	4	3	
BDP 500	V		YY	1,998	2,495	16						70	4	3	
Casio															
AP-45	V		WG	999	1,799	16					64	40	4	3	
PX-130	S	E	Bk	499	599	16			Y		128	16	2	1(3)	Y
PX-330	S	E	Bk	699	799	250			Y	180	128	16	2	1(3)	Y
AP-220	V	E	W	899	1,199	16			Y		128	16	2	3	Y
PX-830	V	E	Bk	999	1,299	16			Y		128	40	2	3	Y
AP-420	V	E	W	1,099	1,399	16			Y		128	40	4	3	Y
AP-620	V	E	Bk	1,399	1,799	250			Y	180	128	60	4	3	Y

<i>Model</i>	<i>Action</i>	<i>Escapement</i>	<i>Wood Keys</i>	<i>Ivory Texture</i>	<i>Player Moving Keys</i>	<i>Vocal Support</i>	<i>Educational Features</i>	<i>External Memory</i>	<i>USB to Computer</i>	<i>Recording Tracks</i>	<i>Warranty (Parts/Labor)</i>	<i>Dimensions WxDxH (Inches)</i>	<i>Weight (Pounds)</i>
PDP-100										1	2/1		
KDP-18										2	2/1		
KDP-8823									Y	3	2/1		
KDP-8865											2/2		165
KDP-8826											2/1		185
KDP-8838							Y	USB	Y	5	2/1		
KDP-8816										1	2/2		185
KDP-8834D										2	2/2		195
GDP-8800						Y	Y	USB	Y	8	2/1	54x21x35	363
EG2180-BK										2	1/1	55x21x35	142
EG8180										2	1/1	54x40x33	200
BDP 10									Y	2	1/1	52x11x5	25
BDP 15									Y	2	1/1	57x12x31	90
BDP 100									Y	2	1/1	54x18x33	101
BDP 20									Y	2	1/1	54x19x34	117
BDP 150									Y	2	1/1	52x11x5	25
BDP 500									Y	2	1/1	52x11x5	26
BDP 500									Y	2			
BDP 500									Y	2			
AP-45	SHA									2	1/1	54x18x33	101
PX-130	Tri-Sensor						Y		Y	2	1/1	52x11x5	25
PX-330	Tri-Sensor						Y	SD	Y	16	1/1	52x11x5	26
AP-220	Tri-Sensor						Y		Y	2	1/1	55x17x33	83
PX-830	Tri-Sensor			Y			Y	SD	Y	2	1/1	54x14x35	74
AP-420	Tri-Sensor			Y			Y	SD	Y	2	1/1	55x17x33	88
AP-620	Tri-Sensor			Y			Y	SD	Y	17	1/1	55x19x35	126

Brand & Model	Form	Ensemble	Finish	Estimated Price	MSRP	Voices	Key Off	Sustain Samples	String Resonance	Rhythms/Styles	Polyphony	Total Watts	Speakers	Piano Pedals	Half Pedal
Galileo															
VP-91	V		WP	2,295	3,295	11		Y	Y		128	44	2	1	
VP-111	V		R	2,495	3,495	11		Y	Y		128	44	4	3	
VP-121	V		R	3,595	3,995	20		Y	Y		128	100	4	3	
VP-121	V		EP	3,895	4,495	20		Y	Y		128	100	4	3	
Aria	G		EP	7,995	9,495	16		Y	Y		64	180	4	3	
Aria	G		MP	8,995	10,495	16		Y	Y		64	180	4	3	
Concerto	G		EP	10,995	12,995	16		Y	Y		64	180	4	3	
Aria DigiPlay	G		EP	12,995	14,995	16		Y	Y		64	180	4	3	
Aria DigiPlay	G		MP	13,995	15,995	16		Y	Y		64	180	4	3	
Concerto	G		MD	14,995	16,995	16		Y	Y		64	180	4	3	
Concerto DigiPlay	G		EP	15,995	17,995	16		Y	Y		64	180	4	3	
Concerto DigiPlay	G		MD	19,995	21,995	16		Y	Y		64	180	4	3	
Maestro II	G	E	EP	9,995	11,995	128		Y	Y	128	128	250	5	3	
Maestro II	G	E	WP	10,495	12,495	128		Y	Y	128	128	250	5	3	
Maestro II	G	E	MP	11,995	13,995	128		Y	Y	128	128	250	5	3	
Grande II	G	E	EP	13,995	15,995	128		Y	Y	128	128	250	5	3	
Maestro II	G	E	Rd	17,995	19,995	128		Y	Y	128	128	250	5	3	
Kawai															
EP3	S			1,099	1,499	21		Y	Y	30	96	26	6	1	Y
MP5	S			1,199	1,495	256	Y	Y	Y		192	0	0	2	Y
MP8II	S			1,895	2,495	256	Y	Y	Y		192	0	0	2	Y
ES6	S	E		1,699	2,099	32		Y	Y	100	192	26	6	1 (3)	Y
CL25	V		R	1,445	1,495	8					72	14	2	3	Y
CE200	V		R	1,699	1,999	20		Y	Y	30	96	40	2	3	Y
CN22	V		R	1,699	2,045	15		Y			96	32	2	3	Y
CN32	V		R, M	2,099	2,645	36		Y	Y		96	32	2	3	Y
CN32	V		Bk	2,199	2,745	36		Y	Y		96	32	2	3	Y
CN42	V		R	2,599	3,245	310		Y	Y	100	192	80	4	3	Y
CN42	V		M	2,699	3,345	310		Y	Y	100	192	80	4	3	Y
CA63	V		R	3,173	3,845	60	Y	Y	Y	100	192	100	4	3	Y
CA63	V		M	3,264	3,945	60	Y	Y	Y	100	192	100	4	3	Y
CA93	V		R	4,445	5,645	80	Y	Y	Y	100	192	135	6+SB	3	Y
CA93	V		Bk	4,536	5,745	80	Y	Y	Y	100	192	135	6+SB	3	Y

Model	Action	Escapement	Wood Keys	Ivory Texture	Player Moving Keys	Vocal Support	Educational Features	External Memory	USB to Computer	Recording Tracks	Warranty (Parts/Labor)	Dimensions WxDxH (Inches)	Weight (Pounds)
VP-91	Grand Response	N									4/1	54X14X6	48
VP-111	Grand Response	N									4/1	54X17X40	119
VP-121	Graded Hammer	Y								1	4/1	54X20x41	138
VP-121	Graded Hammer	Y								1	4/1	54X20x41	138
Aria	AGT Pro	Y	Y							2	4/1	54x38x56	315
Aria	AGT Pro	Y	Y						Y	2	4/1	54x38x56	315
Concerto	AGT Pro	Y	Y						Y	2	4/1	54x52x35	415
Aria DigiPlay	AGT Pro	Y	Y		Y				Y	2	4/1	54x38x56	315+
Aria DigiPlay	AGT Pro	Y	Y		Y				Y	2	4/1	54x38x56	315+
Concerto	AGT Pro	Y	Y						Y	2	4/1	54x52x35	415
Concerto DigiPlay	AGT Pro	Y	Y		Y				Y	2	4/1	54x52x35	415+
Concerto DigiPlay	AGT Pro	Y	Y		Y				Y	2	4/1	54x52x35	415+
Maestro II	AGT	Y				Y	Y	USB	Y	5	4/1	54x39x35	345
Maestro II	AGT	Y				Y	Y	USB	Y	5	4/1	54x39x35	345
Maestro II	AGT	Y				Y	Y	USB	Y	5	4/1	54x39x35	345
Grande II	AGT	Y				Y	Y	USB	Y	5	4/1	54X48X38	312
Maestro II	AGT	Y				Y	Y	USB	Y	5	4/1	54x39x35	345
EP3	AHA IV-F								Y	2	3/3	55x14x6	46
MP5	AHA IV								Y		3/1	53x13x7	45
MP8II	AWA PROII		Y						Y		3/1	58x18x8	77
ES6	AHA IV-F								Y	2	3/3	55x14x6	46
CL25	AHA IV										3/3	51x11x32	63
CE200	AWA PROII		Y						Y	2	3/3	54x20x35	137
CN22	AHA IV-F						Y			1	5/5	55x16x34	93
CN32	AHA IV-F						Y		Y	2	5/5	55x19x35	119
CN32	AHA IV-F						Y		Y	2	5/5	55x19x35	119
CN42	AHA IV-F						Y	USB	Y	16	5/5	55x19x35	125
CN42	AHA IV-F						Y	USB	Y	16	5/5	55x19x35	125
CA63	RM3		Y	Y			Y	USB	Y	2	5/5	57x36x19	168
CA63	RM3		Y	Y			Y	USB	Y	2	5/5	57x36x19	168
CA93	RM3	Y	Y	Y			Y	USB	Y	2	5/5	58x36x19	192
CA93	RM3	Y	Y	Y			Y	USB	Y	2	5/5	58x36x19	192

Brand & Model	Form	Ensemble	Finish	Estimated Price	MSRP	Voices	Key Off	Sustain Samples	String Resonance	Rhythms/Styles	Polyphony	Total Watts	Speakers	Piano Pedals	Half Pedal
Kawai (continued)															
CP119	V	E	R	3,445		700+	Y	Y	Y	183	96	60	2	3	Y
CP139	V	E	R	3,445		900+	Y	Y	Y	306	192	80	4	3	Y
CP119	V	E	M	3,536		700+	Y	Y	Y	183	96	60	2	3	Y
CP139	V	E	M	3,536		900+	Y	Y	Y	306	192	80	4	3	Y
CP179	V	E	CP, EP	8,173		1000+	Y	Y	Y	390	192	100	6	3	Y
CP209	G	E	EP	14,445		1000+	Y	Y	Y	390	192	200	9	3	Y
CP209 CD	G	E	EP	20,864		1000+	Y	Y	Y	390	192	200	9	3	Y
CP209 IQ	G	E	EP	22,500		1000+	Y	Y	Y	390	192	200	9	3	Y
Ketron															
GP10A	S			1,236		16					64	50		1	
DG20	V					8					64	50		2	
DG30	V					8					64	50		3	
DG90	V	E				290				172	64	140	5	3	
DG100	G	E	EP			660				307	64	120	5	3	
Kingston															
K100	S		R/C		1,995	128				99	16	44	4		
K200	V	E	EP/MP		2,995	128				99	64	60	4	3	
KGP10	G		EP		5,995	12					64	80	4	3	
Kohler (Samick)															
KD26	V		R	1,595	1,595	30					60	50	2	3	
KD30	V	E	EP	3,173	2,995	332				128	64	80	4	3	
KD60	V	E	EP	4,687	4,995	332				304	62	360	5	3	
KD7	G		EP/MP	7,907	8,499	30					60	360	6	3	
KD150	G	E	EP	5,524	5,995	660				304	62	360	5	3	
KD150	G	E	MP	5,907	6,995	660				304	62	360	5	3	
KD160	G	E	EP	6,089	6,495	660				304	62	360	5	3	
KD160	G	E	MP	6,453	6,995	660				304	62	360	5	3	
KD165	G	E	EP/ MP/ lyP	7,907	8,495	660				304	62	360	5	3	
KD165 French	G	E	MP/CP	8,796	9,495	660				304	62	360	5	3	

<i>Model</i>	<i>Action</i>	<i>Escapement</i>	<i>Wood Keys</i>	<i>Ivory Texture</i>	<i>Player Moving Keys</i>	<i>Vocal Support</i>	<i>Educational Features</i>	<i>External Memory</i>	<i>USB to Computer</i>	<i>Recording Tracks</i>	<i>Warranty (Parts/Labor)</i>	<i>Dimensions WxDxH (Inches)</i>	<i>Weight (Pounds)</i>
CP119	RH			Y				USB	Y	16	5/5	56x23x38	224
CP139	RM3		Y	Y		Y		USB	Y	16	5/5	56x23x38	248
CP119	RH			Y				USB	Y	16	5/5	56x23x38	224
CP139	RM3		Y	Y		Y		USB	Y	16	5/5	56x23x38	248
CP179	RM3	Y	Y	Y		Y		USB	Y	16	5/5	56x29x38	289
CP209	RM3	Y	Y	Y		Y		USB	Y	16	5/5	59x63x39	430
CP209 CD	RM3	Y	Y	Y	Y	Y		USB	Y	16	5/5	59x63x39	430
CP209 IQ	RM3	Y	Y	Y	Y	Y		USB	Y	16	5/5	59x63x39	430
GP10A										2		51x12x5	48
DG20												53x20x33	116
DG30												53x20x33	116
DG90													
DG100												54x43x37	198
K100													
K200													185
KGP10													250
KD26											3/1	55x19x34	156
KD30	Fatar TP30					Y		FD		8	3/1	45x24x37	276
KD60						Y				16	3/1		376
KD7					Y			USB	Y	Opt	3/1	60D	530
KD150	Fatar TP30					Y				16	3/1	50D	404
KD150	Fatar TP30					Y				16	3/1	50D	404
KD160	Fatar TP30					Y				16	3/1	58D	478
KD160	Fatar TP30					Y				16	3/1	58D	478
KD165	Fatar TP30				Y	Y				16	3/1		528
KD165 French	Fatar TP30				Y	Y				16	3/1		528

Brand & Model	Form	Ensemble	Finish	Estimated Price	MSRP	Voices	Key Off	Sustain Samples	String Resonance	Rhythms/Styles	Polyphony	Total Watts	Speakers	Piano Pedals	Half Pedal
Korg															
SP170	S			499	599	10					120	18	2	1	Y
SP-250	S			699	1,199	30					60	22	2	1	Y
SV1	S			2,199	2,999	36					80	0	0	1 (3)	Y
LP-350	V		Bk/W	999		30					60	22	2	3	Y
C-320	V		R/C	1,499	2,499	30					60	50	2	3	Y
C-520	V		R	1,999	3,299	40					62	70	4	3	Y
C-720	V		WG	2,495	4,900	40					62	94	4	3	Y
Kurzweil															
SP2X	S			1,099		64				60	64	0	0	1	
SP3X	S			1,995		512				60	64	0	0	1	Y
SP2XS	V		Sr	1,333		64				64	64	40	2		
Mark Pro ONE SP	V		EP	1,635	1,895	64					64	30	2	3	
Mark Pro ONEi	V		RW	1,816	2,395	64					64	30	2	3	
Mark Pro ONEi	V		EP	1,998	2,695	64					64	30	2	3	
Mark Pro TWO SP	V		EP	1,998	2,795	64					64	60	4	3	
Mark Pro TWOi	V		RW	2,362	3,295	64					64	60	4	3	
Mark Pro TWOi	V		EP	2,544	3,595	64					64	60	4	3	
Mark 12i	V	E	EP	4,885	7,461	325				64	32	130	4	3	
Mark 12i	V	E	MP	5,049	7,731	325				64	32	130	4	3	
X-PRO UP	V	E	EP	5,695		850		Y	Y		128	140	4	3	
Mark 112i	G	E	EP	6,995	9,891	325				64	32	130	4	3	
Mark 152i	G	E	MP	7,355	17,685	325				64	32	200	7	3	
X-PRO MG	G	E	EP	7,595		850		Y	Y		128	140	4	3	
Mark 152i	G	E	EP	7,831	17,085	325				64	32	200	7	3	
Mark 152i	G	E	MBrP/ WP	7,940	17,685	325				64	32	200	7	3	
X-PRO BG	G	E	EP	9,595		850		Y	Y		128	140	4	3	
M-Audio															
ProKeys88	S			599	749	14					126	0	0	1	

<i>Model</i>	<i>Action</i>	<i>Escapement</i>	<i>Wood Keys</i>	<i>Ivory Texture</i>	<i>Player Moving Keys</i>	<i>Vocal Support</i>	<i>Educational Features</i>	<i>External Memory</i>	<i>USB to Computer</i>	<i>Recording Tracks</i>	<i>Warranty (Parts/Labor)</i>	<i>Dimensions WxDxH (Inches)</i>	<i>Weight (Pounds)</i>
SP170	NH										1/1	52x13x6	27
SP-250	HA 3										1/1	51x15x6	42
SV1	RH3								Y		1/1	53x14x6	46
LP-350	RH3										1/1	53x11x31	94
C-320	RH3										1/1	54x18x34	110
C-520	RH3								Y	2	1/1	54x18x34	117
C-720	RH3								Y	2	1/1	56x19x36	178
SP2X	Fatar								Y		1/1	56x13x5	49
SP3X	Fatar								Y		1/1	56x13x5	49
SP2XS	Fatar								Y		1/1	52x15x29	71
Mark Pro ONE SP	Fatar						Y		Y	1	2/3	54x17x32	112
Mark Pro ONEi	Fatar						Y		Y	1	2/3	54x17x32	112
Mark Pro ONEi	Fatar						Y		Y	1	2/3	54x17x32	112
Mark Pro TWO SP	Fatar						Y		Y	2	2/3	54x20x35	125
Mark Pro TWOi	Fatar						Y		Y	2	2/3	54x20x35	125
Mark Pro TWOi	Fatar						Y		Y	2	2/3	54x20x35	125
Mark 12i	Fatar						Y			16	2/3	57x22x33	199
Mark 12i	Fatar						Y			16	2/3	57x22x33	199
X-PRO UP	Fatar							xD	Y	16	2/3	56x36x37	214
Mark 112i	Fatar									16	2/3	57x44x36	240
Mark 152i	Fatar						Y			16	2/3	58x59x40	512
X-PRO MG	Fatar							xD	Y	16	2/3	56x36x37	225
Mark 152i	Fatar						Y			16	2/3	58x59x40	512
Mark 152i	Fatar						Y			16	2/3	58x59x40	512
X-PRO BG	Fatar							xD	Y	16	2/3	60x40x58	434
ProKeys88									Y		1/1	57x13x6	48

Brand & Model	Form	Ensemble	Finish	Estimated Price	MSRP	Voices	Key Off	Sustain Samples	String Resonance	Rhythms/Styles	Polyphony	Total Watts	Speakers	Piano Pedals	Half Pedal
Orla															
Stage Player	S		C, Bk	1,082	1,795	16	Y	Y	Y		64	30	2	1 (3)	
Stage Pro	S		Bk	1,445	2,495						64		4		
Stage Ensemble	S	E	W	1,400	2,495	476	Y	Y	Y	260	64	40	4	1 (3)	
Stage Ensemble	S	E	EP	1,545	2,595	476	Y	Y	Y	260	64	40	4	1 (3)	
CDP10	V		R	2,024	2,695	9	Y	Y	Y		64	30	2	3	
CDP20	V		R/C	2,382	3,295	12	Y	Y	Y		64	50	2	3	
CDP20	V		EP	2,464	3,395	12	Y	Y	Y		64	50	2	3	
CDP25	V		R/C	2,809	3,895	22	Y	Y	Y		64	50	4	3	
CDP25	V		R/EP	2,918	3,995	22	Y	Y	Y		64	50	4	3	
CDP45	V	E	R	2,718	4,495	476	Y	Y	Y	260	64	40	4	3	
CDP45	V	E	EP	2,809	4,795	476	Y	Y	Y	260	64	40	4	3	
Grand 310	G		EP/WP	5,355	6,795		Y	Y	Y		64		6	3	
Grand 450	G	E	EP/WtP	6,082	7,995	476	Y	Y	Y	260	64		6	3	
Roland															
RD-300GX	S			1,599	1,829	366	Y	Y	Y	200	128	0	0	1 (3)	Y
RD-700GX	S			2,599	2,949	518	Y	Y	Y	200	128			1 (3)	Y
RK-300	S				5,199	330	Y	Y	Y		128	30	2	1 (3)	Y
V-Piano	S			5,995	6,999	24	Y	Y	Y		128			3	Y
FP-4	S	E	Bk/Wt	1,499	1,719	333	Y	Y	Y	80	128	14	2	1 (3)	Y
FP-7	S	E	Bk	1,999	2,289	339	Y	Y	Y	80	128	26	2	1 (3)	Y
F-110	V		Bk/Wt	1,499	1,999	306	Y	Y	Y		128	24	2	3	Y
RP-201	V		R/Bk	1,599	2,099	306	Y	Y	Y		128	24	2	3	Y
DP-990	V		C/Bk	2,095	2,299	306	Y	Y	Y		128	24	2	3	Y
HP302	V		R/Bk	2,499	2,999	337	Y	Y	Y		128	24	2	3	Y
DP-990R	V		EP	2,899	3,299	306	Y	Y	Y		128	24	2	3	Y
HP305-RW/SB	V		R/Bk	3,199	3,799	337	Y	Y	Y		128	60	4	3	Y
HP305-PE	V		EP	3,799	4,599	337	Y	Y	Y		128	60	4	3	Y
HPi-6s	V		M	3,999	4,999	445	Y	Y	Y		128	60	4	3	Y
HP307-RW/SB	V		R/Bk	4,199	4,999	337	Y	Y	Y		128	120	4	3	Y
HP307-PE	V		EP	4,799	5,899	337	Y	Y	Y		128	120	4	3	Y
LX-10	V		Bk	5,999	6,999	337	Y	Y	Y		128	120	6	3	Y
HPi-7s	V		M	6,199	7,199	596	Y	Y	Y		128	120	4	3	Y
RK-300-C	V				6,499	330	Y	Y	Y		128	90	4	3	Y
RG-1	G		Bk	6,199	6,999	20	Y	Y	Y		128	80	4	3	Y
RG-3	G		EP	9,999	10,999	20	Y	Y	Y		128	80	4	3	Y
RG-3M	G		EP	10,999	12,999	20	Y	Y	Y		128	80	4	3	Y

<i>Model</i>	<i>Action</i>	<i>Escapement</i>	<i>Wood Keys</i>	<i>Ivory Texture</i>	<i>Player Moving Keys</i>	<i>Vocal Support</i>	<i>Educational Features</i>	<i>External Memory</i>	<i>USB to Computer</i>	<i>Recording Tracks</i>	<i>Warranty (Parts/Labor)</i>	<i>Dimensions WxDxH (Inches)</i>	<i>Weight (Pounds)</i>
Stage Player	GH						Y			2	5/1	53x14x33	64
Stage Pro	GH										5/1		
Stage Ensemble	GH						Y		Y	16	5/1	55x14x33	64
Stage Ensemble	GH						Y		Y	16	5/1	55x14x33	64
CDP10	GH						Y			2	5/1	55x19x33	143
CDP20	GH						Y			2	5/1	55x19x33	148
CDP20	GH						Y			2	5/1	55x19x33	148
CDP25	GH						Y		Y	3	5/1	55x19x33	148
CDP25	GH						Y		Y	3	5/1	55x19x33	148
CDP45	GH						Y		Y	16	5/1	53x21x35	141
CDP45	GH						Y		Y	16	5/1	53x21x35	141
Grand 310	GH						Y				5/1	55x48x36	331
Grand 450	GH						Y		Y	16	5/1	55x48x36	331
RD-300GX	PHA all							USB	Y		1/90	57x13x5	36
RD-700GX	PHA II	Y		Y				USB	Y		1/90	57x15x6	55
RK-300	PHA II	Y				Y		USB	Y	1	3/1	54x19x14	72
V-Piano	PHA III	Y		Y				USB	Y	1	3/1	56x21x7	84
FP-4	PHA all								Y	3	1/90	53x12x5	34
FP-7	PHA II							USB	Y	3	1/90	53x15x5	53
F-110	PHA all									3	5/1	54x12x31	78
RP-201	PHA all									1	5/1	55x17x39	95
DP-990	PHA II	Y		Y				USB	Y	3	5/1	55x14x31	104
HP302	PHA II	Y						USB	Y	3	5/1	55x17x41	117
DP-990R	PHA II	Y		Y				USB	Y	3	5/1	55x14x31	106
HP305-RW/SB	PHA II	Y		Y				USB	Y	3	5/1	55x17x41	127
HP305-PE	PHA II	Y		Y				USB	Y	3	5/1	55x17x41	129
HPi-6s	PHA II	Y				Y	Y	USB	Y	16	5/1	55x17x41	125
HP307-RW/SB	PHA III	Y		Y				USB	Y	3	5/1	56x21x43	173
HP307-PE	PHA III	Y		Y				USB	Y	3	5/1	56x21x43	176
LX-10	PHA II	Y		Y				USB	Y	3	5/1	56x18x44	209
HPi-7s	PHA II	Y		Y		Y	Y	USB	Y	16	5/1	56x21x43	176
RK-300-C	PHA II	Y				Y		USB	Y	1	3/1	54x19x38	139
RG-1	PHA II	Y		Y				USB	Y	1	5/1	56x29x50	165
RG-3	PHA II	Y		Y		Y		USB	Y	1	5/1	58x37x57	243
RG-3M	PHA II	Y		Y	Y	Y		USB	Y	1	5/1	58x37x57	298

Brand & Model	Form	Ensemble	Finish	Estimated Price	MSRP	Voices	Key Off	Sustain Samples	String Resonance	Rhythms/Styles	Polyphony	Total Watts	Speakers	Piano Pedals	Half Pedal
Roland (continued)															
RG-7-R	G		EP	16,999	19,999	20	Y	Y	Y		128	120	6	3	Y
FP-4-C	V	E	Bk/Wt	1,699	1,909	333	Y	Y	Y	80	128	14	2	1 (3)	Y
FP-7C	V	E	Bk	2,199	2,449	339	Y	Y	Y	80	128	26	2	1 (3)	Y
RM-700	V	E	Bk/M	7,999	8,999	818	Y	Y	Y		128	120	4	3	Y
KR-111	G	E	EP	7,995	8,799	400	Y	Y	Y	170	64	50	4	3	Y
KR-115-R	G	E	EP	12,999	13,999	780	Y	Y	Y	285	128	140	4	3	Y
KR-115M-R	G	E	EP	17,999	19,999	780	Y	Y	Y	285	128	140	4	3	Y
KR-117MU-R	G	E	EP	24,999	27,999	780	Y	Y	Y	310	128	280	8	3	Y
Samick															
Symphonia SSP10	V			1,264		12					64	30	2	1 (3)	
Ebony 2	V		EP	3,082		8					64	180	5	3	
Symphonia SG210	G		EP	3,173		12					64	120		3	
Symphonia See Samick															
Suzuki															
HDP bl	V			1,099		16					64		2	3	
SC-10ei	V	E		1,299		128				100	64		2	3	
TSI-1ei	V	E		1,399		128				100	64	120	4	3	
HP-99	V	E		1,499		128				100	64	120	4	3	
ST-9	V	E		2,499		128				100	64	120	4	3	
Taylor															
TDP 102	V		R	1,809	2,495	16					64	44		3	
TDP 103	V		R	2,173	3,595	20					64	100		3	
TDP 103	V		EP	2,355	3,895	20					64	100		3	
Williams															
Encore	S			499	699	30					32			1	
Overture	V		W	599	899	15					64			3	
Symphony	V		W	799	1,199	138				100	32			3	
Symphony Elite	V		W	899	1,299	138				100	64	40		3	

Model	Action	Escapement	Wood Keys	Ivory Texture	Player Moving Keys	Vocal Support	Educational Features	External Memory	USB to Computer	Recording Tracks	Warranty (Parts/Labor)	Dimensions WxDxH (Inches)	Weight (Pounds)
RG-7-R	PHA II	Y		Y	Y	Y		USB	Y	1	5/1	58x55x69	496
FP-4-C	PHA all								Y	3	1/90	53x13x37	59
FP-7C	PHA II							USB	Y	3	1/90	53x16x37	80
RM-700	PHA II	Y		Y		Y	Y	USB	Y	16	5/1	56x22x37	187
KR-111	PHA							FDD	Y	16	5/1	55x37x63	232
KR-115-R	PHA	Y		Y		Y	Y	USB	Y	16	5/1	58x37x57	254
KR-115M-R	PHA	Y		Y	Y	Y	Y	USB	Y	16	5/1	58x37x57	309
KR-117MU-R	PHA	Y		Y	Y	Y	Y	USB	Y	16	5/1	59x62x69	529
Symphonia SSP10										2			
Ebony 2	Fatar								Y			57x19x42	
Symphonia SG210										2			
HDP bl										Y	1/1		
SC-10ei										Y	1/1		
TSI-1ei										5	1/1	55x18x39	165
HP-99										5	1/1	55x21x36	165
ST-9						Y				5	1/1	56x24x39	228
TDP 102												54x17x40	119
TDP 103										3		54x20x41	138
TDP 103										3		54x20x41	138
Encore										3	1/1	55x13x5	77
Overture									Y	2	1/1	54x20x34	
Symphony									Y	3	1/1	54x20x34	154
Symphony Elite									Y	3	1/1	54x20x34	165

Brand & Model	Form	Ensemble	Finish	Estimated Price	MSRP	Voices	Key Off	Sustain Samples	String Resonance	Rhythms/Styles	Polyphony	Total Watts	Speakers	Piano Pedals	Half Pedal
Yamaha															
P85	S		Bk/Sr	629	899	10					64	12	2	1(3)	Y
P155	S		BkM/ SC/ BkE	1,199	1,699	17	Y	Y			128	24	2	1	Y
CP33	S			1,299	1,700	28	Y	Y			64	0	0	2	Y
CP50	S			1,699	2,199	322	Y	Y	Y	100	128	0	0	1	Y
CP300	S			2,199	2,700	530	Y	Y	Y		128	60	2	3	Y
CP5	S			2,599	3,299	227	Y	Y	Y	100	128	0	0	1(2)	Y
CP1	S			4,999	5,999	17	Y	Y	Y		128	0	0	3	Y
YDPS31	V		A	899	1,299	6					64	12	2	3	Y
YDP140	V		A	1,049	1,349	6					64	12	2	3	Y
YDP160	V		R	1,349	1,849	10					64	40	2	3	Y
YDP223	V		R	1,599	1,999	14	Y	Y			64	40	2	3	Y
CLP320	V		R/C/ M	1,945	2,199	10					128	40	2	3	Y
N100MR	V		Bk	2,399	2,999	10	Y	Y			64	40		3	Y
CLP330	V		R/C/ M	2,525	2,999	14					128	40	2	3	Y
CLP320PE	V		EP	2,556	3,099	10					128	40	2	3	Y
CLP340	V		R/C/ M	3,136	3,899	28	Y	Y			128	80		3	Y
CLP330PE	V		EP	3,233	3,999	14					128	40	2	3	Y
CLP370	V		R/C/ M	3,805	4,799	518	Y	Y			128	160	8	3	Y
CLP340PE	V		EP	3,900	4,899	28	Y	Y			128	80		3	Y
CLPS306	V		EP	4,187	5,299	14					128	80	2	3	Y
CLP370PE	V		EP	4,378	5,599	518	Y	Y			128	160	8	3	Y
CLPS308	V		EP	4,760	6,099	14					128	80	2	3	Y
F01	V		EP/ Bkl/ Rd/ Or	4,999	7,699	20	Y	Y		0	128	80	4	3	Y
CLP380	V		EP	6,096	7,899	518	Y	Y	Y		128	160	8	3	Y
CLP380	V		MP	6,304	8,199	518	Y	Y	Y		128	160	8	3	Y
F11	V		EP/ Bkl/ Rd/ Or	7,499	13,999	20	Y	Y		0	128	80	4	3	Y
N2	V		EP	9,999	14,999	5	Y	Y	Y	0	256	500	12	3	Y
CLP265GP	G		EP	5,187	6,399	14					64	80	4	3	Y

<i>Model</i>	<i>Action</i>	<i>Escapement</i>	<i>Wood Keys</i>	<i>Ivory Texture</i>	<i>Player Moving Keys</i>	<i>Vocal Support</i>	<i>Educational Features</i>	<i>External Memory</i>	<i>USB to Computer</i>	<i>Recording Tracks</i>	<i>Warranty (Parts/Labor)</i>	<i>Dimensions WxDxH (Inches)</i>	<i>Weight (Pounds)</i>
P85	GHS									1	1/1	52x12x6	29
P155	GH							USB		2	1/1	53x6x14	41
CP33	GHE								Y	0	3/3	52x13x6	40
CP50	GH								Y		3/3	55x13x7	46
CP300	GHE								Y	16	3/3	54x18x7	72
CP5	NW-Stage		Y	Y		Y			Y		3/3	55x16x7	56
CP1	NW-Stage		Y	Y				USB	Y		3/3	55x17x7	60
YDPS31	GHS									1	3/3	55x12x31	80
YDP140	GHS									1	3/3	54x17x32	91
YDP160	GHE									1	3/3	54x17x32	95
YDP223	GHE									2	3/3	54x20x33	113
CLP320	GH									1	5/5	55x17x32	107
N100MR	GHE										3/3	58x21x31	101
CLP330	GH							USB	Y	2	5/5	56x20x36	143
CLP320PE	GH									1	5/5	55x17x32	107
CLP340	GH3			Y				USB	Y	2	5/5	56x20x36	152
CLP330PE	GH							USB	Y	2	5/5	56x20x36	143
CLP370	NW		Y	Y				USB	Y	16	5/5	56x20x36	172
CLP340PE	GH3			Y				USB	Y	2	5/5	56x20x36	152
CLPS306	GH3			Y				USB	Y	2	5/5	57x17x39	172
CLP370PE	NW		Y	Y				USB	Y	16	5/5	56x20x36	172
CLPS308	NW		Y	Y				USB	Y	2	5/5	57x39x17	172
F01	NW		Y					USB	Y	1	5/5	56x16x39	168
CLP380	NW		Y					USB	Y	16	5/5	55x20x37	209
CLP380	NW		Y					USB	Y	16	5/5	55x20x37	209
F11	NW		Y		Y			USB	Y	1	5/5	56x16x39	198
N2	Grand	Y	Y	Y				USB	Y	1	5/5	58x21x40	313
CLP265GP	GH3									2	5/5	57x45x37	214

Brand & Model	Form	Ensemble	Finish	Estimated Price	MSRP	Voices	Key Off	Sustain Samples	String Resonance	Rhythms/Styles	Polyphony	Total Watts	Speakers	Piano Pedals	Half Pedal
Yamaha (continued)															
H01	G		AG/ VR/ DBk	7,499	13,199	10	Y	Y			64	80	4	3	Y
CLP295GP	G		EP	8,469	10,799	518	Y	Y	Y		128	160	8	3	Y
H11	G		AG/ VR/ DBk	9,999	20,799	10	Y	Y			64	80	4	3	Y
N3	G		EP	15,725	19,999	5	Y	Y	Y		256	500	12	3	Y
YPG635	V	E	C	800	1,219	491				150	64	12	4	1(3)	(Y)
CVP501	V	E	R	3,299	4,499	776	Y	Y		191	128	40	2	3	Y
CVP501	V	E	EP	3,899	5,399	776	Y	Y		191	128	40	2	3	Y
CVP503	V	E	R	4,999	6,999	876	Y	Y		272	128	80	4	3	Y
CVP503	V	E	EP	5,599	7,999	876	Y	Y		272	128	80	4	3	Y
CVP505	V	E	R	6,399	8,999	1169	Y	Y	Y	362	128	80	4	3	Y
CVP505	V	E	EP	7,299	10,099	1169	Y	Y	Y	362	128	80	4	3	Y
CVP505	V	E	MP	7,499	10,799	1169	Y	Y	Y	362	128	80	4	3	Y
CVP509	V	E	R	8,499	11,999	1291	Y	Y	Y	442	256	195	8	3	Y
CVP509	V	E	EP	9,799	13,999	1291	Y	Y	Y	442	256	195	8	3	Y
CVP509	V	E	MP	9,999	13,999	1291	Y	Y	Y	442	256	195	8	3	Y
CGP1000	G	E	EP	21,969	33,399	1070	Y	Y	Y	408	256	240	10	3	Y

<i>Model</i>	<i>Action</i>	<i>Escapement</i>	<i>Wood Keys</i>	<i>Ivory Texture</i>	<i>Player Moving Keys</i>	<i>Vocal Support</i>	<i>Educational Features</i>	<i>External Memory</i>	<i>USB to Computer</i>	<i>Recording Tracks</i>	<i>Warranty (Parts/Labor)</i>	<i>Dimensions WxDxH (Inches)</i>	<i>Weight (Pounds)</i>
H01	NW		Y					USB			5/5	58x30x30	181
CLP295GP	NW		Y	Y				USB	Y	16	5/5	57x45x37	238
H11	NW		Y		Y			USB			5/5	58x30x30	216
N3	Grand	Y	Y	Y				USB		1	5/5	58x47x40	439
YPG635	GHS						Y	USB	Y	6	1/90	55x30x19	56
CVP501	GH						Y	USB	Y	16	5/5	54x24x35	156
CVP501	GH						Y	USB	Y	16	5/5	54x24x35	156
CVP503	GH3			Y		Y	Y	USB	Y	16	5/5	54x24x35	160
CVP503	GH3			Y		Y	Y	USB	Y	16	5/5	54x24x35	160
CVP505	GH3			Y		Y	Y	USB	Y	16	5/5	56x24x34	167
CVP505	GH3			Y		Y	Y	USB	Y	16	5/5	56x24x34	171
CVP505	GH3			Y		Y	Y	USB	Y	16	5/5	56x24x34	171
CVP509	NW		Y	Y		Y	Y	USB	Y	16	5/5	56x24x34	180
CVP509	NW		Y	Y		Y	Y	USB	Y	16	5/5	56x24x34	185
CVP509	NW		Y	Y		Y	Y	USB	Y	16	5/5	56x24x34	185
CGP1000	NW		Y	Y		Y	Y	USB	Y	16	5/5	58x60x39	412

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Supplement to
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ALDEN SKINNER, Digital Piano Editor, has spent ten years in piano retail sales and management, twelve years representing a major piano manufacturer, and several years in technical product management. He brings a uniquely balanced perspective to the acoustic and digital piano markets.