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FALL 2011
Supplement to
THE PIANO BOOK

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



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LARRY FINE
Editor



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Welcome to the Fall 2011 issue of *Acoustic & Digital Piano Buyer*, a semiannual publication devoted to the purchase of new, used, and restored acoustic pianos and digital pianos. *Piano Buyer* is the supplement and successor to the well-known reference *The Piano Book*, which, since 1987, has been the principal consumer guide to buying a piano in the U.S. and Canada. Partially supported by advertising, *Piano Buyer* is available free online at www.pianobuyer.com. It can also be purchased in print from the website and in bookstores.

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. Each issue contains several of these excellent features, many of which remain relevant for years. If you missed any of them, you’ll find them under the website’s Archive tab. The brand, model, and price reference material in the second half of the publication is updated, as needed, with each issue.

In this issue, we offer several new articles for your reading pleasure. Few readers may have the luxury of needing to purchase a concert grand, but those who do—mostly for institutions—often find it a daunting task. How do you select the best

example from among a number of such glorious instruments? Industry veteran and piano technician Sally Phillips shows us how, with advice that is also, to some extent, applicable to the purchase of smaller performance-grade pianos (p. 81).

The piano industry tends to be very conservative. Relatively little has changed in the instrument’s technical design over the past 125 years, in large part because manufacturers are afraid of getting beaten up in the marketplace if their pianos are seen as being “experimental.” But, as piano technician Steve Brady shows, much of what we take for granted in the modern piano was once considered “experimental,” and some very interesting and innovative work being done by a number of makers today may be considered “traditional” tomorrow (p. 68).

With new pianos from China getting better and better, at some point it’s only natural to wonder if they might be good enough for

even the most accomplished pianists—with a possible savings in cost of 80 percent or more. In this issue, concert pianist Judith Cohen reviews five of the best Chinese-made pianos between 6’ and 6’ 6” long, and comments on the tradeoffs between price and performance (p. 49).

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 help you home in quickly on the instruments that match your requirements for size, furniture style, and budget. Two new searchable databases debut with this issue: Digital Piano Prices and Features, which allows searching on price and eleven different popular digital-piano features and specifications; and the Piano Technicians and Rebuilders Directory, through which you can find a qualified person in your community to tune, service, appraise, or restore your piano.

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. You can purchase it through the website or in bookstores.

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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**FALL 2011
Supplement to
THE PIANO BOOK**

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

Acoustic & Digital Piano Buyer is published semiannually, in March and September, by:

Brookside Press LLC 800.545.2022
P.O. Box 300168 617.522.7182
Jamaica Plain, MA 02130 USA 617.390.7764 (fax)
info@pianobuyer.com www.pianobuyer.com

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ISBN 978-192914532-4

Distributed to the book trade by Independent Publishers Group,
814 North Franklin St., Chicago, IL 60610
(800) 888-4741 or (312) 337-0747

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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:

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.

- **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.

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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.)

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

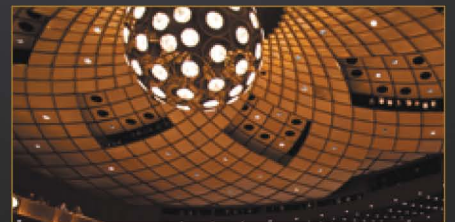


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Introduction

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

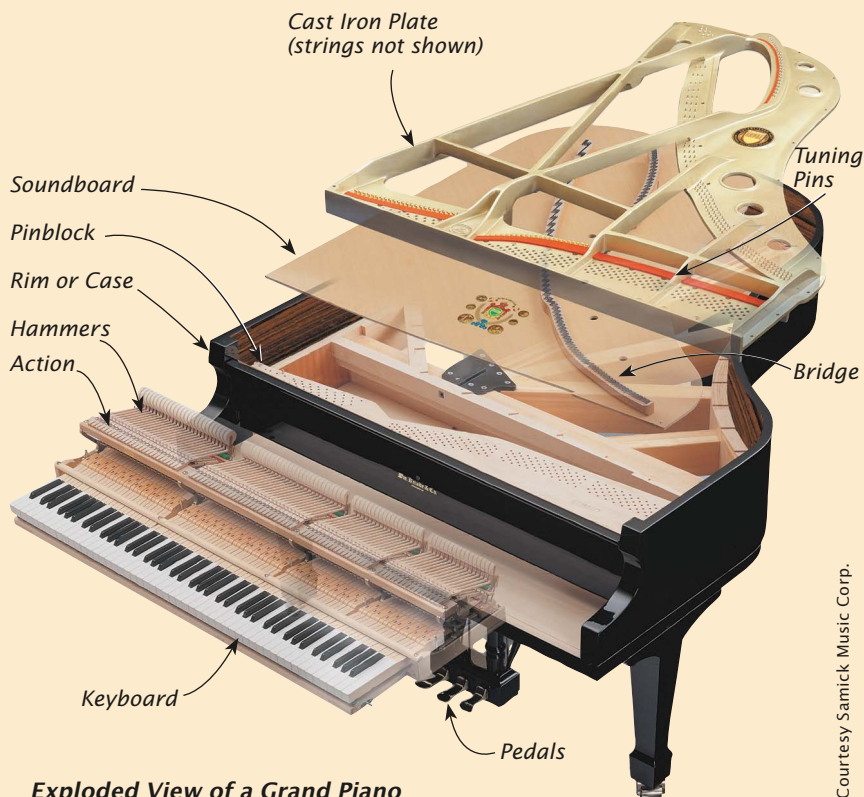
- Takes up less space, can fit into corners
- Lower cost
- Easier to move

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.

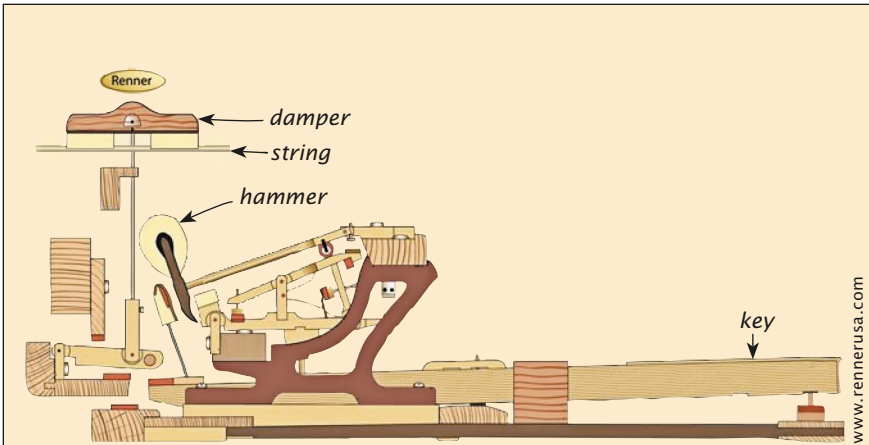
A little bit (but not too much) of technical information about the piano is useful to have while shopping for one. Important words are in **boldface**.

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



The key and action parts of a single note from a grand piano

[For animation, click here.]

notes (**bass**). They are graduated in thickness, length, and tension, and strung tightly across the structural framework of the piano. Each note has one, two, or three strings associated with it. Each such set of strings is known as a **unison** because all the strings in a set vibrate at the same pitch. The strings lie across narrow hardwood **bridges** that transmit their vibrations to a wooden **soundboard**, usually made of spruce. The relatively large area of the soundboard amplifies what would otherwise be a rather weak sound and broadcasts the sound to the ears. The dimensions, arrangement, and positioning of all the acoustical elements in a piano is known as the piano's **scale design**. The scale design varies with the model and is a major determinant of the piano's tone.

Structural: The strings are strung across a gold- or bronze-colored **plate** (sometimes called a **frame** or **harp**) of cast iron, which is bolted to a substantial wooden framework. This heavy-duty structure is necessary to support the many tons of tension exerted by all the taut strings. A **vertical**, or upright, piano is one in which the structural element stands vertically, and is most commonly placed against a wall. A **grand** piano is one in which

the structural element lies horizontally. In a vertical piano, the wooden framework consists of vertical **back posts** and connecting cross beams. In a grand, wooden **beams** and the familiar curved **rim** comprise the framework. One end of each string is anchored to the plate toward the rear of a grand or the bottom of a vertical piano. The other end is coiled around a **tuning pin** embedded in a laminated hardwood **pin-block** hidden under the plate at the front (grand) or top (vertical). A piano is **tuned** by turning each tuning pin with a special tool to make very slight adjustments in the tension of its string, and thus to the string's frequency of vibration, or **pitch**.

Cabinetry: The piano's **cabinet** (vertical) or **case** (grand) provides aesthetic beauty and some additional structural support. A grand piano's rim is part of both the wooden structural framework and the case. Accessory parts, such as the music desk and lid, are both functional and aesthetic in purpose.

Although the acoustical and structural elements have been described separately, in fact the plate, wooden framework, soundboard, bridges, and strings form a single integrated unit called the **strung back**. A piano, then, consists of a strung back, an action, and a cabinet or case.

but a more subtle control of musical expression is desired.

Grand Advantages

- Sound develops in a more aesthetically pleasing manner by bouncing off nearby surfaces and blending before reaching player's ears, making it easier to control musical expression.
- More sophisticated action than in a vertical. Grand action has a repetition lever to aid in the speed and reliability of repetition of notes, and is gravity-assisted, rather than dependent on artificial contrivances (springs, straps) to return hammers to rest.
- Longer keys provide better leverage, allowing for significantly greater control of musical expression.
- Casework is usually more elegant and aesthetically pleasing.

Grand Disadvantages

- Takes up more space
- Higher cost
- Harder to move

What Size?

Both verticals and grands come in a wide variety of sizes. The important thing to know here is that size is directly related to musical quality. Although many other factors also contribute to tonal quality, all else being equal, the longer strings of larger pianos, especially in the bass and mid-range sections, give off a deeper, truer, more consonant tonal quality than the strings of smaller pianos. The treble and bass blend better and the result is more pleasing to the ear. Also, longer grands usually have longer keys that generally allow superior control of musical expression than shorter grands. Therefore, it's best to buy the largest piano you can afford and have

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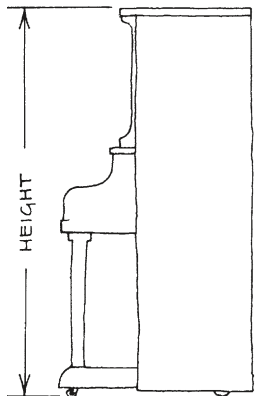
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space for. Small differences in size between models are more significant in smaller pianos than in larger ones. However, a difference in size of only an inch or two is generally irrelevant, as it could be merely due to a larger cabinet or case.

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.

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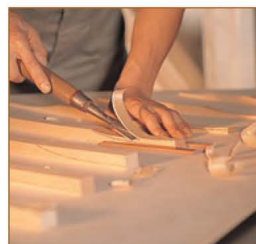


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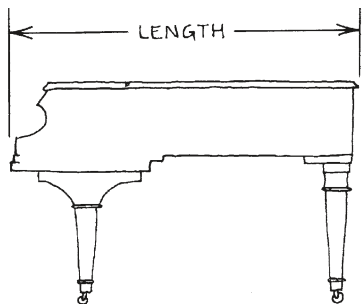


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The width of a vertical piano is usually a little under five feet and the depth around two feet; however, these dimensions are not significantly related to musical quality.

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

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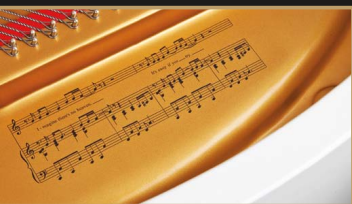
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vertical for the piano bench and pianist. Shoppers tend to underestimate what will fit and buy smaller pianos than necessary. Sometimes, the next-size-larger instrument can give you a great deal of tonal improvement at little additional cost. Dealers 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 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



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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 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 warrantor’s) 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 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.

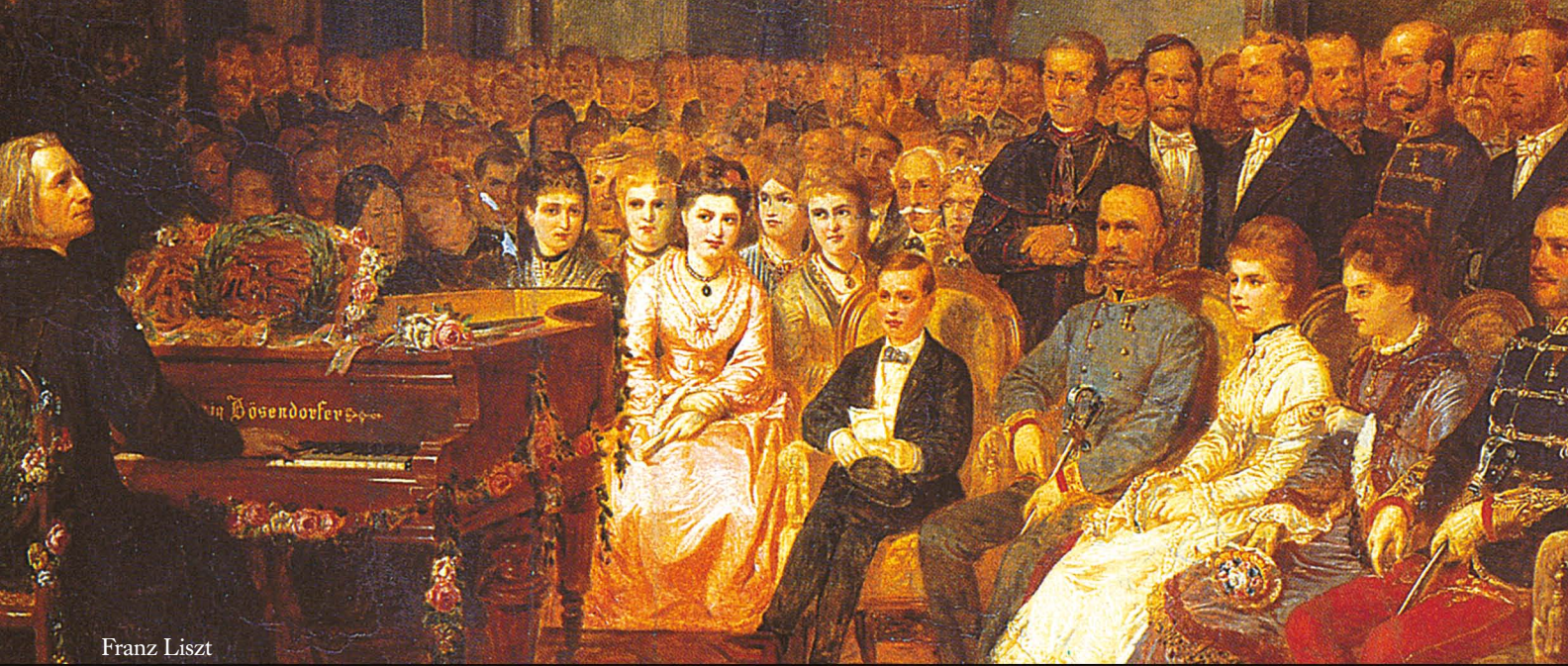
A key factor concerns how long you want to keep the instrument: Is it



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

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,



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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.

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 piano technician you trust, hire a Registered Piano Technician (RPT) member of the Piano Technicians Guild (PTG). You can locate one near you on the PTG website, www.ptg.org. (To be designated an RPT, one must pass a series of tests. This provides the customer with some assurance of competence.)

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

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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



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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 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 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 mega-sales (such as college sales, truck-load 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.

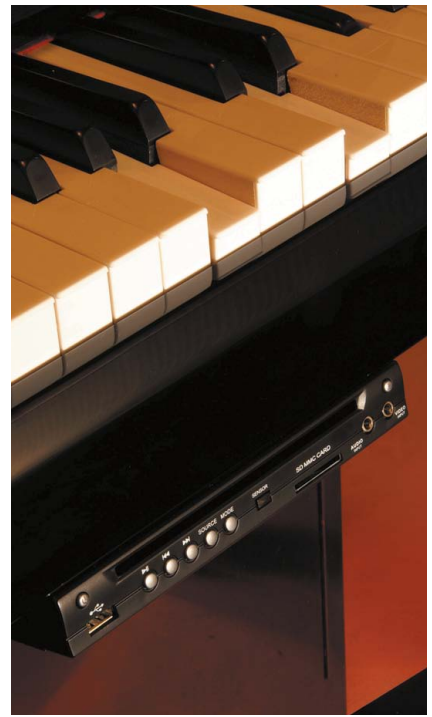
Electronic Player-Piano Systems

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



PianoDisc

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

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



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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 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 decorator styles, are common, especially in Asian pianos.



Institutional or Professional Style

Samick Music Corp.



School Style

Pramberger Piano Co.



Decorator Style: French Provincial Cherry

Pramberger Piano Co.



Decorator Style: Traditional Mahogany

Pramberger Piano Co.



Continental Style

Wyman/Oria



Decorator Style: Mediterranean Oak

Samick Music Corp.



Hybrid Style

Wyman/Oria



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 part-way 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

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apparent touch can be very different when 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 mellower, 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” 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, 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 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

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.

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

The Estonia Hidden Beauty

The Hidden Beauty piano combines ebony with a veneer of beautiful Karelia birch from Finland.

Attacked by the Soviet Union in 1939, the Finns were badly outnumbered, and lost land in the Karelia area, but did not lose their freedom. This Estonia piano thus has a deeper meaning: it resonates the sound of freedom.



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. 🎹

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, over 30,000 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

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

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

poured 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, Schimmel (May Berlin brand), Blüthner (Irmeler Studio brand), and Bechstein (W. Hoffmann Vision 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 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

**A growing trend
[in Chinese pianos]
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pre-sale preparation by the dealer (who sometimes must weed out the 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).

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 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.

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

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.

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.

United States

Only three companies manufacture pianos here in any numbers: Steinway & Sons, Mason & Hamlin, and Charles R. Walter. 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 Eu-

ropean 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 reorganiza-

tions 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 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.

The rush to sell to Americans has caused some European companies to reconsider the tonal designs of their instruments.



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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

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

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.

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Visitors to *Classic Pianos* of Portland, Oregon are surprised to discover the ambiance of an old-world *Restoration Shop* and three distinctive *Piano Salons* within a museum-like atmosphere of used brick walls, waxed concrete and rough plank floors, original wall art created from antique piano parts, and hanging re-bronzed piano harps.

Adjacent to the piano shop is a circa 1912 craftsman mission chapel that once served as offices for the Episcopal Diocese of Oregon. Now restored and enlarged to include a condominium for out of town guests, this quaint structure for auditioning pianos has been renamed *The Schimmel House (Das Schimmel Haus)*.

Classic Pianos, located at the East End of the Ross Island Bridge, crossing over the Willamette River into Portland's historic southeast "*Brooklyn Neighborhood*," has reached national and international recognition. Guests often comment that it's a chapter right out of Thad Carhart's national bestseller, *THE PIANO SHOP ON THE LEFT BANK*: "Discovering a Forgotten Passion in a Paris Atelier."

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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.

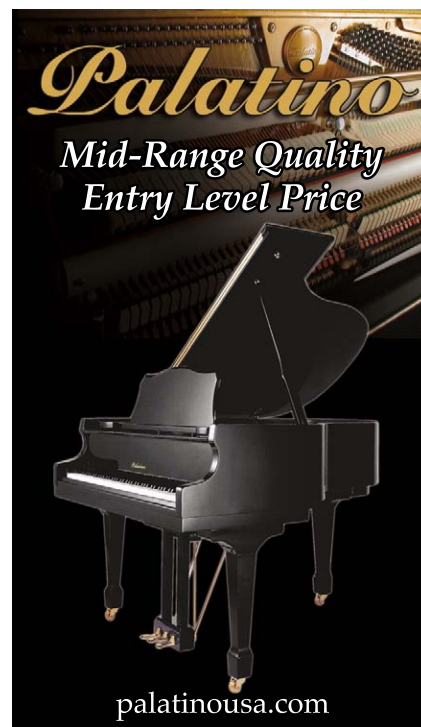
Globalization, Quality, and Value

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 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

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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

PERFORMANCE-GRADE PIANOS		
Highest Quality	High Quality	Good Quality
<i>Verticals:</i> \$17,000–\$41,000	<i>Verticals:</i> \$14,000–\$27,000	<i>Verticals:</i> \$8,400–\$21,000
<i>Grands 5' to 7':</i> \$52,000–\$97,000	<i>Grands 5' to 7':</i> \$29,000–\$79,000	<i>Grands 5' to 7':</i> \$29,000–\$61,000
Blüthner Bösendorfer C. Bechstein Fazioli Grotrian Sauter Steingraeber & Söhne Steinway & Sons (Hamburg)	August Förster Estonia Feurich (Germany)* Haessler* Mason & Hamlin Schimmel (Konzert) Seiler (Germany) Shigeru Kawai Steinway & Sons (New York) Yamaha (CF)	Charles R. Walter Petrof Schimmel (Classic) Schulze Pollmann Wilh. Steinberg (IQ)

*Tentative, based on very limited information

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

PROFESSIONAL-GRADE PIANOS
<i>Verticals:</i> \$8,000–\$13,000 <i>Grands 5' to 7':</i> \$16,000–\$43,000
Bohemia Vogel W. Hoffmann (Tradition)
Boston (Japan) Kawai RX grands Kawai verticals (Japan) Yamaha C grands Yamaha verticals (Japan)

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

CONSUMER-GRADE PIANOS

	<i>Chinese</i>	<i>Samick</i>	<i>Young Chang</i>	<i>Yamaha/Kawai</i>
Upper Level <i>Verticals:</i> \$3,600–\$8,200 <i>Grands</i> 5' to 7': \$11,000–\$25,000	Perzina verticals	J.P. Pramberger Platinum Wm. Knabe	Albert Weber Young Chang Platinum	
	Brodmann grands (PE) Hailun Ritmüller			Kawai GE grands Kawai verticals (Indonesia) Yamaha GC grands Yamaha verticals (China)
Mid-Range <i>Verticals:</i> \$2,900–\$7,500 <i>Grands</i> 5' to 7': \$7,500–\$23,000	Brodmann verticals (PE) Heintzman May Berlin Palatino Perzina grands*	Kohler & Campbell Millennium Pramberger Signature Story & Clark Signature	Weber Sovereign Young Chang Professional Artist	Kawai GM grands Yamaha GB grands
	Baldwin (China)* Essex Everett grands Hallet, Davis & Co. grands (HD) Pearl River			Cable-Nelson (Yamaha)
Entry Level <i>Verticals:</i> \$2,800–\$5,500 <i>Grands</i> 5' to 7': \$6,600–\$17,000	Cristofori Henry F. Miller	Kohler & Campbell New Yorker Pramberger Legacy Samick Story & Clark Heritage	Weber Legend Young Chang Traditional/Gold	
	Altenburg Everett verticals Falcone Geo. Steck Hardman, Peck & Co. Hobart M. Cable Suzuki Wyman	<div style="border: 1px solid black; padding: 10px; background-color: white; margin: auto;"> <p style="color: red; font-weight: bold; text-align: center;">To better understand this chart, please read the accompanying commentary.</p> </div>		

*Tentative, based on very limited information

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 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 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, both of which are necessary to meet the needs of the wide variety of piano buyers. Performance-grade pianos generally have one or more of the following attributes: They are built to a single

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high standard, almost without regard to cost, and the price charged is whatever it takes to build such a piano and bring it to market. A greater proportion of the labor required to build them is in the handwork involved in making custom refinements to individual instruments. Most are made in relatively small quantities by firms that have been in business for generations, often under the same family ownership. As a result, many have achieved almost legendary status, and are often purchased as much for their prestige value as for their performance. Finally, these are the instruments most likely to be called into service when the highest performance level is required, particularly for classical music. Most performance-grade pianos are made in Europe or the United States.

Consumer-grade pianos, on the other hand, 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 are mass-produced, usually in Asia, with less in the way of custom refinement of individual instruments.

As discussed elsewhere in this publication, globalization and the computerization of manufacturing have, to some extent, blurred the distinction between performance- and consumer-grade pianos. Increasingly, makers of performance-grade instruments have been creating lower-cost brands by manufacturing instruments and components in countries with cheaper labor, while makers of consumer-grade

pianos have been bringing to market higher-quality models by perfecting automation and sourcing parts worldwide. This has created difficulties in classifying brands by means of a two-grade system, both because some brands defy such classification, and because of the bottleneck that results from the attempt to rate too many brands relative to one another in a restricted space.

To alleviate this problem, I have spun off a third type of piano, called Professional Grade, intermediate between Performance and Consumer, consisting of some of the lower-level performance-grade brands and some of the upper-level consumer-grade ones. The pianos on the performance-grade side are lesser product lines from companies

principally known for their higher-grade brands. They inherit some of the quality of their superior cousins, but otherwise are quite different. The instruments on the consumer-grade side are brands that in recent years have become so advanced in their designs, materials, and manufacturing technologies that they now rival some performance-grade pianos in musicality and quality control, and are sometimes recommended as a substitute for them, often at a lower price. Truthfully, a number of the consumer-grade brands could fit this description, but I've labeled here as professional grade only those that have received the greatest market acceptance as instruments suitable for professional use. I'm sure, in time, others will follow.

The chart for each grade is divided into two or more levels of quality; for consumer-grade pianos, each of these levels is further broken down into two 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

Highest Quality

Most of the pianos in this group, and in the next, "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 the brands in this group 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.)

High Quality

The pianos in this group 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 the first group. However, preferences among performance-grade pianos are greatly dependent on musical taste, and most of the brands in this group have their devoted followings.

Most knowledgeable observers of the piano business would consider the brands in this group to span quite a range of quality within the rarefied air of high-end pianos, and would insist that it be divided into two or more subgroups. The

problem is that I found an utter lack of agreement among my many 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.

Good Quality

The brands in this group, though very good, are considered to have less finesse than those in the first two groups. However, most of these models are also considerably less expensive than the ones above, and may be a better value where the highest quality or prestige is not needed.

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 (other than those listed under Professional Grade); 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

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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.

In fact, as mentioned earlier, some may even compare favorably to professional-grade instruments, and may be less expensive, too. 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. 🎹

PIANO ART

The Schimmel *Pegasus*

by Luigi Colani



The Pegasus art-case piano, named after the winged divine horse of Greek mythology, is a collaboration between Schimmel and the eccentric German designer Prof. Luigi Colani. Their vision was to free the grand piano from its traditional form, and to make the pianist an integral part of the instrument. As with other creations of Prof. Colani, this design also celebrates the oval as one of nature's most perfect forms.

For this issue's piano review, *Piano Buyer* asked concert pianist Judith Cohen to try out five of the highest-rated Chinese grands between 6' and 6' 6" long. This is a size range of piano commonly used by professionals—larger than the pianos in most homes, but smaller than those found on concert stages. The author concludes by commenting on the tradeoff between price and performance when considering whether to purchase a moderately priced or a high-end instrument.

—Editor

Every time I perform a concert, I have to evaluate, analyze, and sum up my impressions of the instrument put before me. I often have less than 15 minutes of quality time to spend with the piano. The hall acoustic is always a factor in my assessment, as well as the type of concert: solo piano, chamber music, concerto with orchestra, etc. Unfortunately, even if there is an excellent piano technician nearby, he or she is rarely given the time to change anything once the piano is in its performance position on stage.

For this article, I have enjoyed the process of trying out and evaluating five different pianos without the pressure of actually having to give a concert on any of them! My responses, opinions, and reactions to each instrument are as a performing pianist, not as a piano technician or builder. Like most pianists, I have very little knowledge of this most complex and mysterious mechanism. I know that technicians often speak a different “language” from pianists, but we need each other, and must appreciate our differences.

I decided I would try each instrument with a variety of repertoire spanning close to three centuries of piano music, from Domenico Scarlatti (who had at least five early pianos in his inventory at the time of his death) through Bartók, and including Beethoven and Debussy.

Scarlatti's sonatas K.14 in G Major and K.33 in D Major are full of light, quick passagework, and instantly give a pianist an impression of how responsive a piano action is, how good the repetition might be, and how easy or difficult it is to control. The Beethoven Bagatelles, Op.126, contain long lyrical lines. The pianist can feel and hear how well the tone sustains, and how easily a sense of melodic line can be created. This is always a challenge for pianist and piano—one needs a legato touch, pedaling finesse, and an instrument that “sings.” I always hope for a piano with a long tonal sustain, as well as tonal color and complexity. This is very subjective, of course—especially the perception of color—and not all pianists experience tone in the same way.

I always love playing a couple of Debussy Études, such as “Pour les huit doigts” or the “Arpeggio.” These fiendishly difficult works encompass an instrument's extreme bass and treble, and give the pianist a sense of its possibilities in dynamic range and color. Debussy's music requires a tremendous variety of volume levels in the softer dynamic ranges. I can always

predict how softly I will be able to play on an instrument after just a few minutes of Debussy's subtle and exquisite music.

The Hungarian composer Béla Bartók has long been a favorite composer of mine. His music demands rhythmic precision and control of articulation. I am always able to tell how much subtlety of articulation (varieties of staccato, accents, two-note slurs, *tenuto*, *portato*, etc.) I can execute on an instrument after playing Bartók. I like to try “With Drums and Pipes,” one of the movements from his *Out of Doors* suite. Besides being, rhythmically, lots of fun to play, this piece uses the lowest bass notes of the piano for the “drum” effect. Instantly I can hear how much resonance, power, and color I can expect from the lower bass.

Ritmüller GH-188R (6' 2")

I was more impressed with the Ritmüller's tonal color, and its sustained singing quality in the mid-treble, than with those of any of the other instruments reviewed. The tone didn't decay as rapidly as with some Asian pianos I've played, and the tonal color was more complex and varied—characteristics that made playing the Beethoven Bagatelles enjoyable on this instrument.

The clarity of the high treble was good, though too bright for my taste. The transition from the bass up through the tenor and lower

I always hope for a piano with a long tonal sustain, as well as tonal color and complexity.

treble strings was smooth, and the resonance and clarity of pitch in the low bass were quite good. I noticed that the showroom's acoustic was flattering (high ceilings) but not overwhelming (carpeted floors).

Unfortunately, my positive impression of this instrument was marred by a touch that felt shallow, uneven, and somewhat heavy and tiring to play. A lack of speed and reliability of repetition also contributed to the impression that the action probably needed further regulating. The pedals were easy to depress and worked well, but unlike what I've come to expect from high-end instruments, use of the *una corda* (soft) pedal didn't seem to change the timbre.

Heintzman 186 (6' 1")

When I arrived to try the Heintzman, I found I had the pleasure of having two samples to try! They had recently been used for a theater production about two pianists, and each instrument had been voiced to one pianist's taste. I spent most of my time on the piano in the main showroom, but after spending some time playing both instruments, I was struck again by the importance of the piano technician in determining the sound (voicing) and feel (regulation) of any particular piano.

I enjoyed playing the Debussy "Arpeggio" Étude because of this instrument's wide dynamic range and good singing quality. The transition from the bass section to the tenor was *very* smooth. An abrupt change in tone from the mid-treble to the much brighter high treble was a bit disconcerting, however, and some tubbiness in a few of the bass notes suggested the need for a little voicing to even things out.

As with the Ritmüller, the Heintzman action felt shallow and a little tiring to play; with the Heintzman,

PRICES OF MODELS REVIEWED*			
Brand/Model (alphabetically)	Size	MSRP† (\$)	SMP‡ (\$)
Brodmann PE 187	6' 2"	25,900	18,267
Hailun 198	6' 5"	24,900	22,510
Heintzman 186	6' 1"		18,780
Perzina T-188	6' 1"	24,090	17,060
Ritmüller GH-188R	6' 2"	24,995	18,176

*Prices are for models in polished ebony.

†MSRP = Manufacturer's Suggested Retail Price. Not all manufacturers issue MSRPs.

‡SMP = Suggested Maximum Price. Most sales take place at a discount to the SMP. See **Model & Pricing Guide** in *Piano Buyer* for more information about prices.

however, repeated notes were nevertheless easy to execute. I did find some distracting action noises in the treble—soft clicking sounds as the keys were depressed. This seemed to happen starting from C above middle C and proceeding about an octave and a half upward. Also, the touch felt uneven and a little difficult to control, especially in the tenor section. The three pedals worked well, though I had to work quite hard to depress them. I especially appreciated that I was able to play quite softly with the *una corda* pedal depressed.

Perzina T-188 (6' 1")

Perhaps due to its being voiced very brightly, even shrill in some places, the Perzina seemed lacking in tonal color, especially in the treble. I realize that this is a matter of taste, and that, in general, all pianos seem to be voiced more brightly today than they were 20 or 30 years ago. Larger concert halls, changing expectations of sound, and an explosion of piano competitions have undoubtedly contributed to this trend, with the result that a piano in a showroom now probably must be voiced brightly to compete in the marketplace. I was taught to "pull" the sound out of the piano, and to *produce* the tone as much as possible. I think most piano customers today prefer the tone to jump out at them.

The transition in the low tenor from treble to bass strings was very good, however, and the bass section was one of the best of the five pianos I played—its clarity and resonance were superb. Because of this, the Bartók "With Drums and Pipes" worked very well on this piano. Interestingly, despite the brightness, I found it quite easy to play softly on the Perzina. I did not have to use the *una corda* pedal to do so, and I always appreciate that. In general, the action felt easy enough, but trills and turns were somewhat difficult to execute. All three pedals worked well and were easy, but not too easy, to depress, and the *una corda* provided a nice tonal contrast.

I also enjoyed looking at this piano's interesting hardware and cabinet detail, including a Perzina coat of arms with lengthy wording on the fallboard decal, and a chrome coat of arms over one of the plate expansion holes.

Brodmann PE 187 (6' 2")

When I first sat down at the Brodmann, I was relieved to be playing a piano that, despite a rather live room acoustic, didn't sound too bright. It had a singing quality in the mid-treble, with a very nice sustain. However, I missed being *interested* in the tone—it just wasn't that complex or compelling—and the resonance and tonal color varied

a lot throughout the various registers. For example, the two octaves proceeding upward from F# above middle C seemed a little dull, almost tubby in sound, and it was hard to experience any tonal color in this area. The same could be said for the upper bass. On the other hand, the transition area in the low tenor was quite good, and there was excellent resonance from the lowest notes on the keyboard up to the second E from the bottom. Despite these variations, in general the instrument had a quite wide dynamic range.

I enjoyed the feel of the action; it felt very free, and it was easy to execute trills and passagework. On this well-regulated action, I was finally able to enjoy playing the Scarlatti. This was, perhaps, the most enjoyable of the actions I played for this review.

All three pedals seemed fine, and the *una corda* produced a nice tonal shift that was not too shocking a contrast.

Hailun 198 (6' 5")

The Hailun had good sustain in the treble. The tone didn't decay too quickly and wasn't thin. But, as with the Brodmann, the tone lacked color and just wasn't that interesting. There was very good clarity in the high treble, however, and the piano in general was evenly voiced. Debussy's "Pour les huit doigts" Étude is filled with rapid scale passages that are supposed to blend seamlessly into one another; it worked well on this instrument, whose tone never got "nasty" or too bright. My impression of the Hailun's tone was probably influenced by the showroom acoustic, which was slightly drier than the others I had visited—besides the carpeting, the ceilings were lower.

The transition from treble to bass was very good. The resonance and clarity of the bass strings were very impressive, especially in the lowest

notes. This may have been influenced by the instrument's size: three or four inches longer than the others I tried. Bartók's "With Drums and Pipes" was really fun to play on this piano. The tone was very resonant in the lowest bass octave; above that it was still good, but not as thrilling. The dynamic range throughout was quite good, though I would have enjoyed greater variety at the soft end of the dynamic spectrum.


For the most part, the Hailun action was enjoyable to play and musically responsive. There were distracting noises, however, from a number of notes in various registers of the piano when the sustain pedal was depressed. And when I depressed the *una corda* pedal, I heard little difference in volume or color.

I'm not an expert on piano cabinetry and hardware, but in general, I was impressed with this aspect of all the pianos I reviewed. All the lids except that of the Ritmüller were quite heavy to lift, however, and I'm used to lifting the lids of 7' and 9' grands. The music desks of the Ritmüller and the Perzina were fitted too tightly to be easily removed and replaced, and the propstick on the Heintzman didn't fit well to the lid. Other than these minor issues, however, the finish, hardware, and cabinetry seemed fine.

To conclude, given the good quality of pianos being made today in China and elsewhere in Asia, it is interesting and only natural to wonder whether a high-end piano such as a Steinway is worth five times as much as one of the instruments reviewed, and whether the Chinese instruments would be suitable for an advanced pianist such as myself. Clearly, a pianist looking to upgrade from an old upright or an electronic keyboard will find a wider range of dynamic and orchestral possibilities with these pianos, especially if

the instrument has been voiced well. The Chinese pianos allow a pianist to perform the full range of piano repertoire and technique. Composers from Bach and Beethoven to Chopin and Liszt, as well as jazz, contemporary, and popular music, can sound quite good on these instruments. I can imagine that a pianist looking to develop his or her technique could grow a lot while practicing on any of these pianos.

As a concert pianist, I have spent most of my performing life adapting to whatever piano is put in front of me in a concert space. I was trained to get the most out of any piano, even if it meant imagining and trying to create a sound different from what was emanating from the instrument I was playing. But if I could no longer perform on a high-end piano, or at least practice on one at home, my musical existence would feel quite barren.

I think the main quality I missed in all five pianos was tonal color and complexity. I am used to working with a whole world of tonal color that I just did not experience with these instruments, or did not experience as fully throughout the entire keyboard as I do with more expensive pianos. To me, this is what separates pianos that are simply very good—which these are—from those that are superb. That said, for those whose needs are not at the concert level, these professional-size pianos from China offer tremendous value for the money, and can take a pianist very far in his or her musical training. 

Judith Cohen began playing the piano at the age of five, and studied at the Chicago Musical College until the age of 18. She has been a prize-winner in numerous piano competitions throughout the world, and regularly performs, especially in the Pacific Northwest, as soloist, with orchestras, and in chamber ensembles. Since 1989, Ms. Cohen has served as Artistic Director of the



Governor's Chamber Music Series in Seattle, Washington, where she resides with her husband, piano technician Steve Brady. Ms. Cohen has been a Steinway artist since 2005. For more information, visit her website at www.judithrcohen.com.

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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

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



An old-fashioned, pneumatically driven player piano with punched-paper music roll and pumping pedals

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. 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 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.

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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.

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.

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

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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. 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, 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](http://eBay.com). 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



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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 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 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 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

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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 *re-manufacturing* 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 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



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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 un-restored 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 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 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



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 soundbox or resonating unit, the action, and the cabinet. The *soundbox* (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 soundbox, 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 soundbox 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.

Soundbox 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

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



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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).

Idealized value minus the cost of restoration is the difference between the cost of a rebuilt piano and 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 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 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

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.

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



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“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 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 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**

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
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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

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

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				

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
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- 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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IN EXISTENCE FOR OVER 300 YEARS, the piano is considered as “traditional” a musical instrument as the violin or guitar. As with those instruments, we tend to think of the piano as being constructed from natural materials—wood, felt, leather, iron, brass—and indeed, the first pianos were made of just these things. From its beginnings as a mere subspecies of harpsichord, however, the *gravicembalo col piano e forte* has evolved into the modern grand piano, and in the process has changed dramatically in size, weight, sound, and the materials of its construction. Indeed, many of the materials used in pianos today were, at one time or another, considered “nontraditional,” even experimental.

The first pianos were essentially harpsichords fitted with hammers that *struck* the strings, in place of the harpsichord’s crow-quill plectra, which *plucked* them. The strings were made of metal—iron for the treble strings, brass or bronze for the bass—as were the tuning pins, bridge pins, hitch pins, nut pins, key pins, and various fasteners and levers. A small amount of wool cloth or felt served to quiet moving parts. The hammers on the first pianos had leather pads backed by wood or small rolls of parchment, and were attached to wooden shanks or stems. The remainder of the instrument would have been built of wood—cypress, pine, or spruce formed the soundboard and rim, while the pinblock, bridges, and hitch-pin rail were made of hardwoods such as hickory, beech, or maple. A century passed before this basic piano recipe began to change significantly.

Iron Bracing and Tempered Steel

Throughout the 18th century, the wire used in harpsichords and

pianos would have been what today is called soft iron. In 1810, Pleyel of Paris patented the process of producing tempered steel wire, and its gradual introduction into pianos over the next 30 years may have constituted the first real step away from the original traditional materials used in pianos. Tempered steel wire could be strung at a higher tension than iron wire to produce the more powerful sound that was increasingly sought by musicians, and thus would have been viewed by many as an improvement over iron.

At about the time that tempered steel strings began appearing in pianos, so did iron bracing. Even with the lower-tensioned iron strings, the combined tension of all the strings on the structure of the piano was several thousand pounds—enough to cause the case of the instrument to eventually start coming apart. As early as 1800, there were a number of

attempts to use iron tubes and bars, and iron hitch-pin plates, to brace the piano’s structure against the tension of the strings. With the advent of tempered steel wire and the resulting general increase in string tensions, the search for an adequate bracing material took off in earnest. In 1825, Alpheus Babcock, a Boston piano maker, succeeded in having an iron piano frame cast in one piece for a square grand. By the end of the 19th century, virtually all piano makers had adopted this element, and today the one-piece, cast-iron plate is one of the signature features of the modern piano.

Leather vs. Felt Hammers

Piano hammer heads in the 18th-century English and Viennese schools of piano building were constructed of concentric layers of leather glued over a wooden molding. Leather was both flexible and firm, but came in many varieties of hardness or softness, which resulted in great varieties of tone quality. According to Rosamond E.M. Harding, in *The Piano-Forte: Its History Traced to the Great Exhibition of 1851* (Heckscher, London, 1978), even as late as 1856 deer leather “was considered to be the most

durable material for covering the hammer head; it would satisfy everyone if the skins were always of the best quality, of even thickness all over, and of even elasticity,

Many of the materials used in pianos today were, at one time or another, considered “nontraditional,” even experimental.

which unfortunately was never the case.” By then, experiments to find a more consistent hammer covering than leather had been going on for a long time, and the search included trials with cloth, cork, India rubber, sponge, and tinder. The first patent for felt-covered hammers was granted to Jean Henri Pape, of Paris, in 1826. For much of the second half of the 19th century, felt and leather were layered together in various configurations, but eventually felt—once a nontraditional material—became the new standard.

Keytops: Ivory or Plastic?

Sometimes a traditional material becomes unavailable and must therefore be replaced by a nontraditional material. Perhaps the best example of this is the replacement by plastic of ivory keytops. Although piano makers began using plastic keytops on cheaper instruments as early as the 1930s, and even on good grands as early as the 1960s, it wasn't until the passage of legislation in 1973 and 1989 banning the use, importation, and sale of elephant ivory that plastic became the de facto material for piano keytops.

The search for an alternative material for keytops may have begun, however, as early as the late 18th century. Harding lists several patents from 1788 to 1840 for covering piano keys with materials such as glass, enamel, bone, horn, mother-of-pearl, and porcelain. “It is unnecessary to enumerate more,” says Harding; “. . . glass, porcelain, or enamel was to form a cheap substitute for ivory. The beautiful ivory itself was not thought to be as good as that which was plain and unfigured.” Today, some makers describe their plastic keytops as synthetic ivory, and seek to formulate plastics with some of ivory's desirable properties, such as texture and the ability to absorb moisture.



Photos by Robert Loomis

The evolution of the piano hammer: leather-covered hammer, circa 1800; hammer from 1854 Erard, covered in a combination of leather and felt; modern felt-covered Renner hammer.

Synthetic Leathers

Until fairly recently, buckskin was the material of choice for certain parts of the piano's action. Both the hammershank knuckle and the backcheck in the grand action were covered in buckskin, as was the hammer butt in the vertical piano action. Some manufacturers began using nontraditional materials to cover some of these parts as early as the 1960s and '70s, and there was a learning curve, to be sure. Baldwin's Corfam hammer-butt coverings became hard and noisy after several years' use, and the company routinely replaced them under warranty with Ecsaine, another synthetic material. In the 1960s, Steinway experimented with replacing not only the covering of the grand hammershank knuckle, but the entire knuckle, with a solid piece of hammer felt. After a few years of feedback about these experimental knuckles, Steinway returned to the more conventional buckskin covering.

Very recently, however, both the New York and Hamburg Steinway factories have replaced buckskin with Ecsaine for both the knuckle

and backcheck coverings. As with the use of leather as a hammer covering 150 years ago, the problem was that the properties of buckskin vary from skin to skin. It was also difficult to find buckskin soft and supple enough to prevent action noise at both points. Ecsaine, on the other hand, has all the sought-after properties of buckskin, but is completely uniform from one piece to the next.

The Furniture

Most piano manufacturers now incorporate nontraditional materials in their cabinet parts. Laminated wood products, in place of solid or veneered wood, have become commonplace in both structural and nonstructural cabinet parts (as well as in soundboards). Engineered wood products such as medium-density fiberboard (MDF), and plastic trim find frequent use in place of wood in nonstructural areas. At least one European manufacturer of quality grands uses a paper-based material much like cardboard in nonstructural areas of the case, and I suspect

that this material is used by other companies as well.

Piano finishes, too, have changed much over the years. The traditional piano finishes in the 18th and 19th centuries were shellac and varnish. Shellac, made from insect shells dissolved in alcohol, is a relatively nontoxic finish that, when damaged, is easily repaired. It is, however, difficult and time consuming to apply evenly in large quantities, and its highest expression, French polish, requires great skill.

Varnishes are made of various kinds of resins dissolved in oils such as mineral spirits. Exposed to light, varnish tends to darken and wrinkle as it ages, creating the “alligatored” appearance so often seen on early 20th-century pianos. A beautiful and durable coating, varnish was the piano finish of choice from the late 19th century until the development of cellulose lacquer in 1928. Lacquer, essentially a synthetic shellac made of cellulose dissolved in volatile solvents such as acetone, can be sprayed on and dries faster than varnish, which makes it attractive for use in a factory setting—but it is highly toxic.

In the mid-20th century, chemists developed polyurethane varnishes and polyester wood finishes. Polyurethane, a kind of synthetic

varnish, is used on some pianos to create a satin finish. Polyester, basically a plastic, has become very popular, and is very likely to be the shiny, deep finish you see on new instruments. The hardest piano finish, polyester is extremely toxic in its liquid form, but is resistant to pretty much everything a piano might normally be exposed to, including water, alcohol, and scratching.

Plastic in the Action

All of this leads up to what may well be the most dramatic use of nontraditional materials in piano construction since the development of the modern piano in the last half of the 19th century. A few piano manufacturers, most notably Kawai and Mason & Hamlin, have invested heavily in research and development to design and produce plastic action parts for their pianos. Contrary to what one might think, the goal is not to save money, as both the research and development expenses and the cost of producing the parts are substantial. According to Bruce Clark, senior design engineer at Mason & Hamlin and its subsidiary piano-action company, Wessell, Nickel & Gross (WNG), “The only reason you do this is to make better parts. In 1850 wood was the high-tech best material for



Photo by Steve Brady

Beginning in the late 1940s, a primitive form of PVC plastic was used for certain vertical action parts, including the spinet elbow (lower right). These parts would begin to disintegrate within a decade or so, giving the generation of piano technicians that followed the work of replacing them with ones made of wood or more durable modern plastic.

piano actions; that’s no longer true.”

The first plastic piano action parts appeared in pianos built in the late 1940s, and because they were used only in smaller pianos, especially



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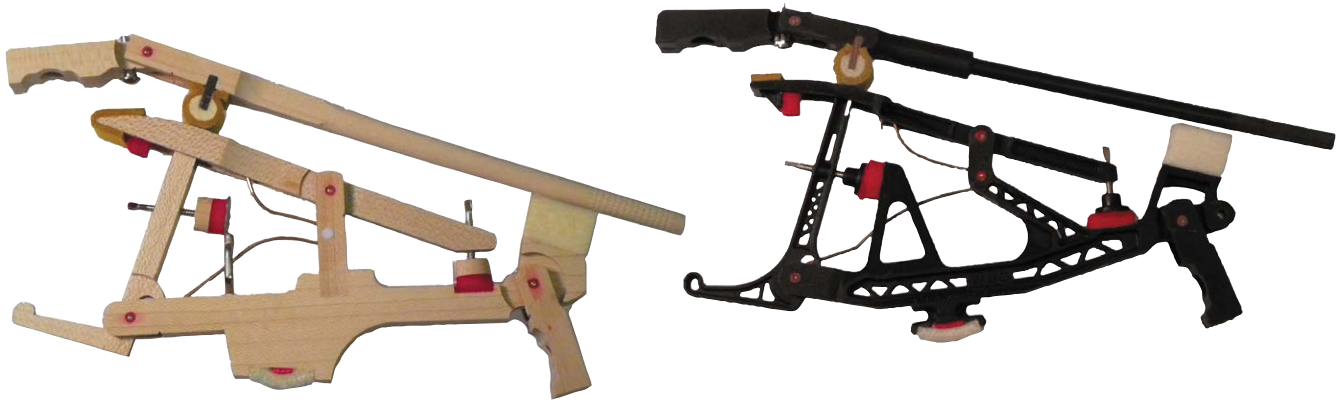
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Photos by Steve Brady

Left: Steinway grand hammer and wippen assemblies, made of maplewood. Right: Wessell, Nickel & Gross grand hammer and wippen assemblies, made of a nylon composite.

spinets, it can be inferred that the aim at that time was to save cost. However, these early plastic parts also appeared in console pianos made by the high-end Mason & Hamlin company, so there may have been other benefits to using plastic, such as uniformity and stability.

The first action parts made of plastic included the elbows (unique to spinet pianos), various action flanges, backchecks, and even damper levers. Unfortunately, all these early polyvinyl chloride (PVC) parts were doomed to failure because the plasticizers that kept the material pliable would gradually migrate out of the parts until they became brittle and prone to shatter, usually within five to fifteen years. As one who became a piano technician in the early 1970s, I was the grateful recipient of many plastic-elbow replacement jobs during my first several years in the business!

Plastics technology has come a long way since those early days. Kawai began using acrylonitrile-butadiene-styrene (ABS) for certain action parts in the late 1960s, and the material has proven extremely durable. According to Don Manino, Kawai's director of technical training, "Kawai made the commitment early on to improve piano

actions, both in terms of consistency of feel and reliability, and the early conservative application of ABS to upright action flanges has spread to upright hammer butts, wippens, and damper levers. In grands, the hammer flanges, wippen assemblies, and the entire damper underlever assembly is made from ABS." In the current Millennium III action found in Kawai's upper-level models, the ABS is reinforced with carbon fiber, making the parts stronger with less mass. The resulting action, according to Kawai, is more responsive to the player's intentions, including faster repetition. The use of plastic also allows Kawai to micro-engineer certain contact surfaces for ideal shape and texture, something that would be impossible with wooden parts.

State-of-the-Art Composites

Mason & Hamlin, through its WNG subsidiary, has thrust the use of nontraditional materials into high gear. Engineer Clark makes a strong case for pursuing better parts by using nontraditional materials. "When you go to a new material, if you don't take advantage of its properties, there's no point in using it. In our case, the material (a composite of nylon and glass) is

10 times stronger than maple, but weighs only twice as much." By radically redesigning the wippen assembly to remove and redistribute mass, Clark is left with a part that looks like miniature bridge trusses; while still slightly heavier than a comparable maple part, it is many times stronger. "To reduce inertia, we've shifted the center of gravity closer to the center of rotation," he says. "It's not reasonable to do that with wood." Other advantages to using a modern composite in place of wood are that the composite is more consistent in both weight and strength, and is completely impervious to changes in moisture and temperature.

According to Mason & Hamlin co-owner Mark Burgett, the hammer shanks in the WNG action are essentially carbon-fiber tubes, which he says are not only stronger than traditional maple shanks, but also more consistent in flex strength. This consistency pays off in making the piano's voicing more consistent. "Much of what we have to do to the hammers to make the voicing more even is made necessary by inconsistency in the wooden hammer shanks," Burgett says. "If one shank is more pliable than another, the tone of that note will be darker

and may include an unwanted noise element. With the carbon-fiber shanks, we find that much less hammer voicing is needed.” Since January 2010, all Mason & Hamlin grand pianos have been equipped with all-composite top actions. All-composite grand damper actions are now available, and the company says that a composite vertical piano action is in the works. All of the WNG parts are also available to piano rebuilders.

Defending Tradition

At this point, most high-end piano makers still use wooden action parts in their best pianos. Steinway & Sons takes the stance that you don’t argue with success:

Steinway & Sons has a long and successful history with the use of hard rock maple in our action parts. For more than 150 years, artists around the world have chosen the Steinway tone and touch as the standard of excellence.

These artists expect a certain sound and touch each time they play a Steinway piano that is unique to our instruments. We have a strong commitment to the world of music to ensure that these performance expectations continue to be met. With respect to this commitment, we at Steinway feel that our choice of materials in action parts influences not only the touch of the instrument but also uniquely contributes to the tone. The use of all natural hard rock maple action parts is a time-tested ingredient of the Steinway performance experience and we remain very comfortable with maple as the material of choice in our Steinway pianos, as we continue to build our pianos to a standard, not to a price.

Similarly, Bösendorfer states that the company “has always used

traditional components and methods in crafting its instruments. There has been no reason to change the 180-year-old tradition of using organic and natural componentry.”

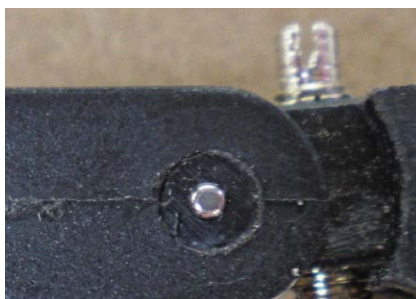
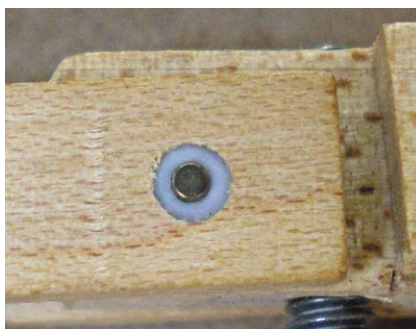
Action Centers

Even when piano manufacturers have experimented with using plastic or composite action parts, they have usually stayed with traditional action centers—the pivot points on which individual action parts swing or rotate. Traditionally consisting of a center pin held fast in the wood of

the main part, and surrounded by a wool cloth bushing in the smaller wooden flange (hinge), the action center’s proper operation critically depends on the flange being able to move freely around the pin in a controlled manner. But since felt is highly susceptible to changes in humidity—it swells up and tightens in higher humidity and loosens in lower humidity—the feel of a piano action can vary dramatically from season to season. In extreme cases, an action exposed to high humidity will become heavy and sluggish, and keys may actually stick, while in very low humidity the flanges may become so loose that action noises develop.

This tendency of piano actions to react poorly to extreme humidity or dryness led Steinway & Sons, whose pianos were shipped to destinations as hot and humid as the tropics and as cold and dry as Siberia, to look for ways to protect the action centers from changes in humidity. Their initial solution, dating back to the late 19th and early 20th centuries, was to treat the wooden action parts with liquid paraffin, thus sealing the parts and at least slowing the passage of moisture into and out of the flanges. The problem with this approach was that, over a long period of time—decades, in most cases—the paraffin migrated into the wool bushings of the action centers, where it reacted with the metal center pins to create verdigris, a type of corrosion. Eventually, the verdigris would render the action sluggish, even unplayable.

In a very important next step, in 1962 Steinway pioneered the use of modern plastics in pianos with the introduction of Permafree™ action flange bushings made of Teflon. Replacing the traditional wool cloth bushings with an inert material that didn’t react to changes in humidity seemed a revolutionary step toward



Photos by Debra Cyr

Action Center Close-ups:
Top: Kawai ABS parts with wool cloth center; Center: Steinway maplewood parts with Teflon center, circa late 1960s; Bottom: Wessell, Nickel & Gross nylon composite parts with composite center.

ensuring a reliably free and consistent piano action. But in actual practice, the new bushings were far from trouble free—what Steinway didn't realize was that dimensional changes in the wooden flange would affect the Teflon bushing. As the flange swelled with humidity, it put more pressure on the Teflon, which in turn pressed tighter on the center pin, causing the action to feel heavy and sometimes sluggish. Conversely, when low humidity caused the flange wood to shrink, the Teflon bushing became loose in the wooden part, causing a noticeable click when the key was played. Steinway twice redesigned the Teflon bushings to overcome these problems, and the third iteration worked quite well. But in 1981, tired of bad press, and finding it difficult to educate piano technicians in the new methods required to service the Teflon bushings, the company replaced the solid Teflon with wool cloth that had been soaked in liquid Teflon, a process Steinway named Permafrees II™. This process is still used today, with good results.

Now Mason & Hamlin has taken the idea of synthetic action centers to a new level. First, they have replaced the traditional brass or German-silver (nickel) center pins with stainless-steel needle bearings. "The needle bearings are much harder than traditional center pins," says Burgett, "and they're available in increments of one 10,000th of an inch, as opposed to increments of one 1,000th of an inch with traditional center pins. This gives us outstanding control of the fit." The other change was to replace the traditional wool cloth bushing with a composite material. The actual composition of that material is proprietary, says Burgett, who notes, however, that the new bushing material is harder than felt or Teflon and is very resistant to damage. "The new action



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What's Next?

Other piano manufacturers, as well, are experimenting with composites. For example, the high-end German piano maker Steingraeber & Söhne is using carbon-fiber soundboards in its Phoenix System models. I even know of a few individuals who have attempted to build the entire structure of a piano—case, plate, pinblock, and soundboard—of composites, the dream being to create a lightweight grand piano that one or two people could easily pick up

and put into a van. Such instruments would also conserve precious wood resources, and might stay in tune better than pianos constructed mostly of wood. But while the composite piano remains at this point only a dream, history has made one thing clear: As long as pianos continue to be built, nontraditional materials will have a place in their construction. ■■■

Steve Brady, author of *Under the Lid: The Art and Craft of the Concert Piano Technician* (Byzantium Books, 2008), currently works each summer as head piano technician at the Aspen Music Festival. The rest of the year he services and rebuilds pianos and teaches piano technology in Seattle. See his website at stevebradypiano.com.

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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 follows is a story with a valuable perspective from a well-respected dealer of performance-quality instruments. —*Editor*

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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THE SELECTION OF A CONCERT GRAND usually falls to piano faculty at a university, the music director at a church, or pianists hired to choose an instrument for an orchestra. Occasionally these pianos are selected for homes. This article assumes that you have chosen a brand and model, and are now about to select a specific instrument from among several examples. Professional pianists are most qualified to make these selections because they generally have played a large variety of pianos, and the differences among the pianos in the selection group may be so subtle as to go unnoticed by the average person. In most cases, these high-quality finalists sound so good that it is very difficult to choose one as better than the rest. This article attempts to define and shorten the selection process.

The process itself is simple: First, eliminate the least powerful instruments. Then concentrate on the quality of sound, and finally on the action.

In a concert piano, sound is the primary criterion for selection. Of course, we want the pianist to like the action and to feel an artistic kinship with the instrument, because that increases the possibilities for musical self-expression. But in reality, the function of a concert grand is to *sound* good to the audience, with an abundance of power that allows it to perform a wide range of repertoire. Ideally, the best instruments possess both incredible sound and perfectly performing actions; but for the purposes of selection, the pianist must distinguish between these two elements.

Power and Projection

A concert piano should be chosen that can be heard above a 100-piece orchestra and whose sound will project to the rear of a large hall.

Even though the piano might not be going into a 3,500-seat auditorium, it needs to be chosen as if it might. Why? Because any piano can be voiced for a smaller room, but a less powerful piano will be limited in the larger space. In the world of concert grands, one can never say for sure where a piano will eventually be used—it could be purchased for a small chapel, and end up one day being played in a concert hall. Because most buyers of concert grands are institutions, even a concert piano purchased for a home may one day be sold into a performance situation.

Tonal Quality

Piano tonal qualities can be explained by separating the elements of tone into four categories: pitch, timbre, sustain, and volume.

The **pitch** is controlled by the tuning of the instrument. This may seem obvious, but the terms used to describe piano tone can be confused

This article is primarily concerned with choosing a concert grand, usually around nine feet in length, for a performance venue such as a concert hall. However, recognizing that some of the concepts presented here also apply to choosing performance-grade pianos in general, I have added comments at the end that concern the choice of such an instrument for a home environment, noting in particular where the advice for home use differs from that for concert use.

with those denoting tuning. Pianists' verbal descriptions of tone are often completely different from those of technicians, and here communication can become confused. For instance, an instrument that a technician would describe as "bright"—that is, as having a more metallic tone—might be described by a pianist as "sharp"; which to the technician, of course, means that the piano is tuned higher than A-440.

The piano's **timbre** is a function of the relative strengths of the different harmonics produced by its vibrating strings. Think of timbre as the difference between a singer singing an A and a clarinet playing the same note. The notes are the same, but the sounds are completely different. Although timbre is influenced by the piano's scale design, most pianos can produce many different timbres—not just a simple bright or mellow—and this can be changed by voicing the hammers.

Sustain and **volume** are closely related to one another. These qualities—the direct results of the ability of the soundboard, bridges, rim, and bracing (the piano’s “belly”) to amplify the sound of the strings—create the ability of the piano to project sound to the rear of the hall.

For the purpose of selecting an instrument, the timbre is the least important tonal element, and should be considered last in the process. *Most important is that the sustain and volume of the instrument must be assessed separately from the timbre, in order to differentiate between the sound-producing capacity of the belly, on the one hand, and the hammer voicing, on the other.*

Sustain and Volume Tests

Here are a few tests that can be done by a pianist on any piano, in a concert hall or home, to evaluate the instrument’s sustain and volume. They take very little time and will quickly narrow down the selection. To sharpen your ears and get you up to speed on the procedures, it’s best to practice these tests on several pianos prior to the selection.

Play a note in each section of the piano at *mezzo forte*, holding the key down to keep the damper off the string. Keep a record of how long each note sustains. You may frequently run across references to how long this sustain should be. However, since every acoustical environment is different, you will get different results in different rooms. When choosing a concert grand, most likely you’ll be trying out several instruments in the same dealer showroom or factory selection room. In that case, you’ll simply compare each piano’s sustain times with the rest. This test will be less conclusive if each instrument is in a different acoustical environment, but it’s still worth doing as long as

you take those differences into account when assessing the results.

Try another sustain test on the same notes: Pluck a string with the key depressed, so that the damper is off the string. (So as not to transfer body oils or sweat, I usually wear a latex glove for any tests that involve touching a string.) Test several notes in each section. At this point it will be instructive to compare the sustain when a string is plucked to the sustain when the same note is struck by the hammer. Technicians use this test to determine whether the source of a tonal problem is in the belly or the hammer. If the sustain is long when the string is plucked but not when it’s struck, it means that the instrument has the capacity for good sustain, and that through the use of advanced voicing techniques, it may be possible to lengthen the sustain with hammer to match that of the string when plucked. But if the plucked sustain is short, then the instrument’s capacity for sustain is likely limited, and there’s probably little the technician can do to improve it.

Why is sustain so important? *Legato* playing, and the illusion of a “singing” quality in the instrument, lie within this parameter. If the soundboard can’t sustain, notes sound *staccato*, and the connection of notes in *legato* is much more difficult to achieve. Although sustain is important in each register of the piano, most critical is the mid-treble section, in the fifth and sixth octaves from the bottom, for two reasons. First, this is the register in which, in most music, the singing melodic line is written. Second, for technical reasons related to soundboard design, this is tonally the weakest area of most soundboards. In my experience, concert grands can usually be made huge and beautiful in the bass, midrange, and high treble, but it’s the fifth and sixth octaves that set apart the great pianos from those

that are merely very good. To test this element, be sure to bring music that includes a soft, slow, melodic movement.

The volume of each instrument can be evaluated by holding the sustain pedal down and slapping the treble side of the piano’s case. (You won’t harm the piano structurally by doing this, but be careful not to damage the finish.) You can go from piano to piano and do this test quickly, but be sure to slap each instrument with the same amount of force. The louder pianos will make themselves evident by the greater din they produce.

In the middle of the keyboard, slowly hold down a C-major chord without letting the hammers strike the strings—just raise the dampers off the strings. Then, with the keys still depressed, forcefully strike and release a low-C octave in the bass. As the sound of the bass notes die away, you’ll hear the original C chord singing sympathetically, even though those notes’ hammers never struck the strings. Do this on each piano. Again, the louder pianos will become apparent through the volume of the resulting sympathetic sound.

The loudness of a string’s sound when plucked is also an indicator of the piano’s potential for volume. In the earlier sustain test in which strings were plucked, make note of any marked differences in volume among the instruments being tested. Be sure to use the same plucking force on each string.

Timbre, Hammers, and Voicing

As mentioned earlier, the timbre of the piano is the least important element of the tone for you to consider, in large part because it is the most variable and temporary, and the most easily changed through hammer voicing.

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

The hammers are the parts of a piano that change the most, wear out fastest, and as much as possible should be eliminated from your initial impression of an instrument. Like tires on a car, they're part of a performance piano for only a relatively short period in that instrument's life. The timbre of a set of hammers can change dramatically with the humidity, and any wear or maintenance of the hammers will change the piano's voicing. To maintain the tone of a concert piano, hammers must be maintained as often as the piano is tuned. Hammer wear is directly related to the number of hours a piano is played and the intensity of that playing. Hammers can last for many years if the piano is played only three or four times a year, but concert instruments in constant use can require new hammers after only five concert seasons.

Hammers can be voiced using an arsenal of techniques, including needling, ironing, hardening, or filing the hammer felt, and fitting the hammers to the strings. A good voicer can make a piano sound more mellow without reducing its volume, or can make it sound brighter but without harshness. Even when selecting among different instruments of the same make and model, you will encounter pianos with a variety of timbres. Try not to be swayed by this; to judge an instrument, keep returning to the basic tonal capacity of its belly for sustain and volume, and thus for power and projection.

That said, hammers that are voiced too bright will make the piano sound thin in the treble, and may obscure what might otherwise be a beautiful-sounding instrument. If, during selection, a piano sounds a bit bright, you might ask the technician to quickly voice it down, or at least address the notes that appear to you to stick out above the others. If the piano sounds too mellow but

has a long sustain, you can be assured that it will be very easy later on to brighten it. But I want to stress that any voicing changes made during the selection process should be minor—for best results, the piano must be fine-voiced in the hall in which it's to be used.

The Action

Of course, any process of selecting among several pianos should include playing them—after all, that's why a pianist has been given the task. If high-level playing weren't a necessary part of the process, a technician alone could do the job.

However, a concert piano should never be chosen solely on the basis of how its action feels. Why? Actions can be changed, and they will change on their own anyway. The action of a new piano will change as soon as it is played in and settled: the felt and leather pack down, altering the regulation dimensions. I can't tell you how many times I've heard pianists say that they chose a piano for its action, only to complain, several weeks after delivery, that the action doesn't feel like it used to. But such changes are normal, and easily reversed with a minor touch-up regulation.

In addition, actions are very malleable, and can be adjusted in many ways to accommodate the player. If you love the sound of a piano but don't like its feel, ask the attending technician if he or she can correct whatever you find objectionable. Some typical action-related complaints—all of which, within limits, can be corrected or changed—include unevenness (requires some touch-up regulation to compensate for uneven compression of felt and leather), difficulty playing *pianissimo* (let-off needs adjusting), and key travel too shallow or too deep (set by manufacturer, but slight

adjustment is possible). In most situations, assuming the pianos have already been well prepped, these fine adjustments can be made in a short amount of time while you're trying another piano. In my experience, however, if the piano has been regulated consistently from note to note and is within a reasonable range of touchweight, a pianist of high caliber will usually have no problem adjusting to its action. Just remember that what is most important is the instrument's sound. Trying to separate that sound from your response to the instrument's action is perhaps the hardest part of selecting a piano.

Playing Tests

Dynamic Range. Starting very softly, play a note in each section, repeating it with increasing loudness, and count how many discrete levels of volume you can produce. The more levels you can produce, the more expressively you will be able to play.

Play *fortissimo* and listen to what happens. Does the sound “top out”—that is, do you want the sound to get louder but can't get the instrument to give you any more? Does the sound “break up,” getting ugly and harsh when loudest? Or can you play as loudly as you like without harshness?

Touchweight and Repetition. The touchweight of a concert grand action should be between 48 and 55 grams, and most modern grands easily fall into this range. If you like a piano's tone, its action can always be made a bit lighter or heavier. If an action is too light, however, problems can occur with rapidly repeated notes. Many good technicians can't play fast enough to make an action fail in fast repetition, and so have developed action measurements and tests to ensure that these problems never occur when a good pianist plays demanding repertoire.

But now, in the selection process, is the time to test repetition with some really fast passages.

After the Instrument Arrives

After you receive your new performance piano, you'll need to play it in for a while and let it acclimate to the hall. Your selected piano may need no adjustments on arrival, but any new piano will sooner or later need some touch-up regulation, and that can be done after a few weeks of playing. In my opinion, however, voicing should be delayed until the piano has been played extensively, so that everyone involved can agree on which direction the voicing should take.

After I have done the preliminary regulation touch-up, and made minor adjustments to even out the voicing without changing its character or volume, I usually invite two pianists to the final voicing: one to play, and the other to join me out in the hall, walking about and listening. I then make whatever voicing changes are needed, the pianists trade places, and we repeat the entire procedure until everyone is happy.

A piano will always sound a little different in the concert hall from how it sounded in the selection room. Halls that have been acoustically optimized for sound-reinforcement systems rather than for acoustic instruments can be especially challenging in the area of sound projection. However, I caution institutions not to jump to the conclusion that

a piano's sound must be brightened if at first it seems a bit mellow. Not only will playing automatically brighten it over time, but most concert grands will blossom after a few months or several changes of season, and the piano will suddenly sound bigger and more robust. Indeed, if a piano is delivered in the summer and has been subjected to slightly higher humidity in shipment, it will take a few weeks in an air-conditioned hall before it sounds as it did at the selection. Patience in this regard is paramount. A good set of hammers can easily be ruined by overbrightening in response to initial complaints about a new piano's dullness of tone. Any changes in voicing should be made conservatively.

Special Considerations for Pianos in the Home

As mentioned at the beginning, even if a concert grand is being chosen for a home, it would be wise to choose one with plenty of power and projection, so that it can later be sold to an institution if desired. However, the issue of power and volume will obviously not be quite as important in the home as in the concert hall, and if the instrument is of less than concert-grand size, it will be less important still. In that case, more emphasis should be placed on the sustain tests than on the volume tests.


Institutional buyers are likely to buy a well-known brand based on its reputation, and its instruments' ability to be used for a wide range of concert repertoire. A purchaser for the home, on the other hand, is more likely to have narrowed down the selection to one particular brand after considering many, based on that buyer's desire for a particular tonal quality and the type of music he or she most often plays. Similarly, whereas institutional buyers must be primarily concerned with satisfying

an audience with the sound of the piano rather than with its action, a buyer for the home *is* the audience, and thus, when shopping for an instrument, has more leeway to consider the action as part of his or her total musical experience.

Just as a concert piano will sound different in the concert hall than in the selection room, so will it sound different in the home. The home piano is usually easier to voice because projection is not a factor. However, the quality of sound will be substantially affected by carpeting, drapes, upholstered furniture, wall hangings, etc. A technician or acoustical expert may be able to help you adjust the acoustics of the room, and the piano's placement in it, for optimal results. In a home, owners often solve the problem of excess volume by closing the piano's lid. I encourage customers to let me voice the instrument to the room with the lid open. This way the piano can be played with the lid left open, and without excess volume, without stifling the piano's true tone.

If the brand chosen has a significantly idiosyncratic tonal palette, it's best to find, for follow-up service, a technician who has experience with that brand, and is familiar with its unique tonal characteristics. 🎹

Over the past 35 years, piano technician **Sally Phillips** has worked in virtually every aspect of the piano industry—service, retail, wholesale, and manufacturing. In her role as a concert-piano technician, she has tuned and prepared pianos for concert and recording work in such venues as Town Hall, Alice Tully Hall, and the Kennedy Center, and for such orchestras as the Cincinnati Symphony, the BBC Concert Orchestra, and the Vienna Philharmonic. At present, Ms. Phillips lives in Kentucky and works throughout the southeastern U.S. She can be contacted at sphillipspiano@hotmail.com.



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[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



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

factors, such as the size of the room, will 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

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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.

sort out these issues and recommend an appropriate instrument.

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.

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 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

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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.

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).

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.

No matter how well made, however, 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

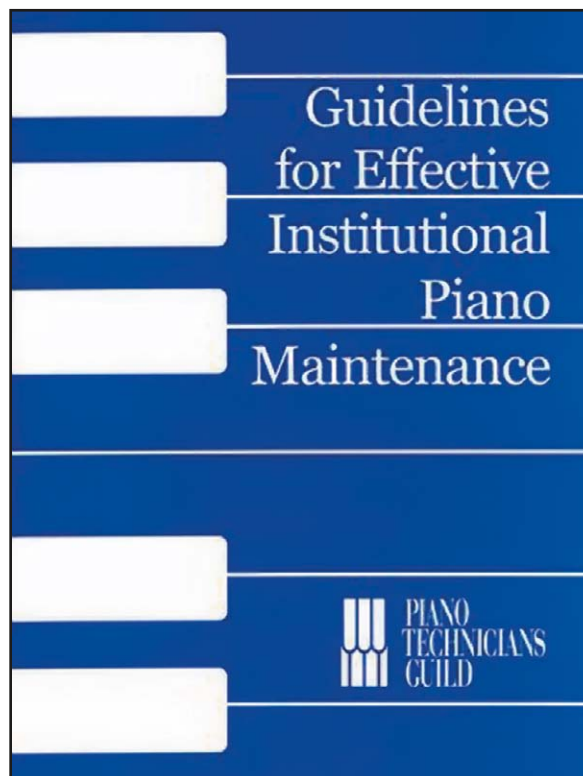
with tuning, regular regulation of the action, pedals, and tone should be basic parts of any effective plan of piano maintenance. Without this, neglected instruments in such environments will quickly become impossible to regulate without extensive overhaul or replacement of parts.

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.

The single largest factor affecting the need for piano maintenance, however, 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



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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, RPT, 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.

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.]

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



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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 than about

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.

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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.]

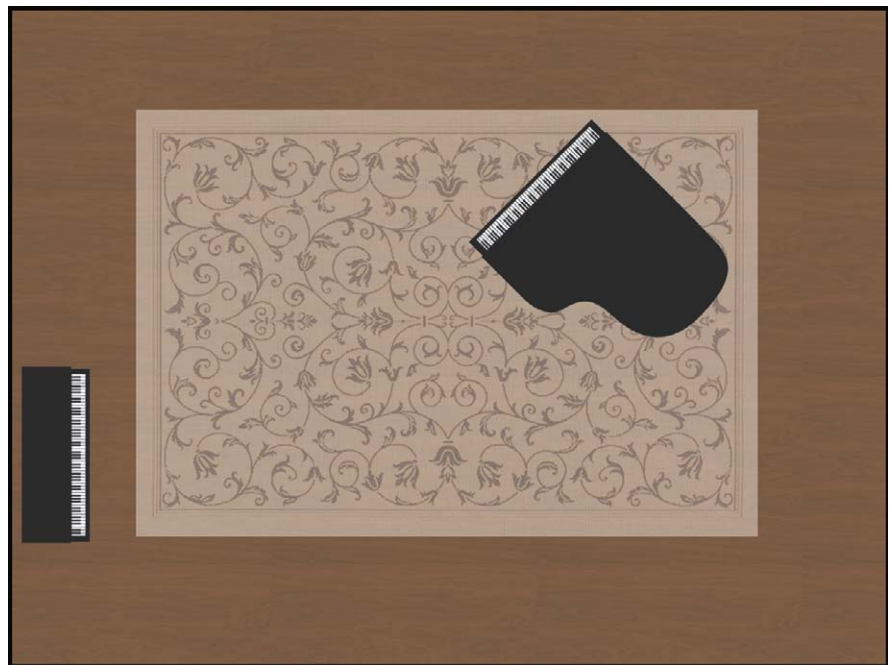
Try not to push the tail of a grand, or the end of a vertical, all the way into a corner of the room. While doing so might give the lowest octave more power (low frequencies are boosted by adjacent wall and floor surfaces), pitch clarity and tonal evenness will suffer. The hard sound reflections coming 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 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



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.

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

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.

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 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 (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



PIANO ART

The Steinway *Satin*

by Terrance Hunt

This wonderfully elegant piano honors the 100th anniversary of legendary Steinway Artist Duke Ellington. Named after his composition “Satin Doll,” this piano has tapered, fluted legs that flow into the magnificent shell fans on each side of the case.

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.



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

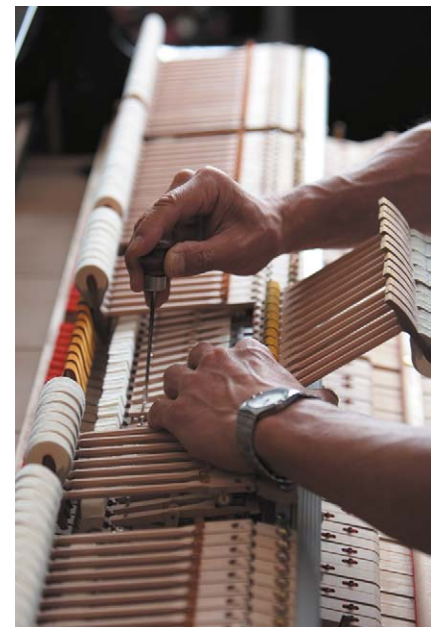
Pianos go out of tune mostly because of seasonal changes in humidity that cause the soundboard and other parts to alternately swell and shrink. This happens regardless of whether or not the piano is played. Pianos vary in their responsiveness to fluctuations in humidity, but the variance is not always 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

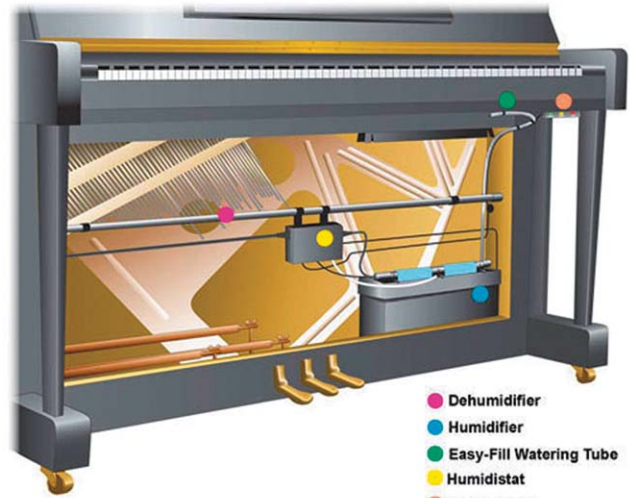
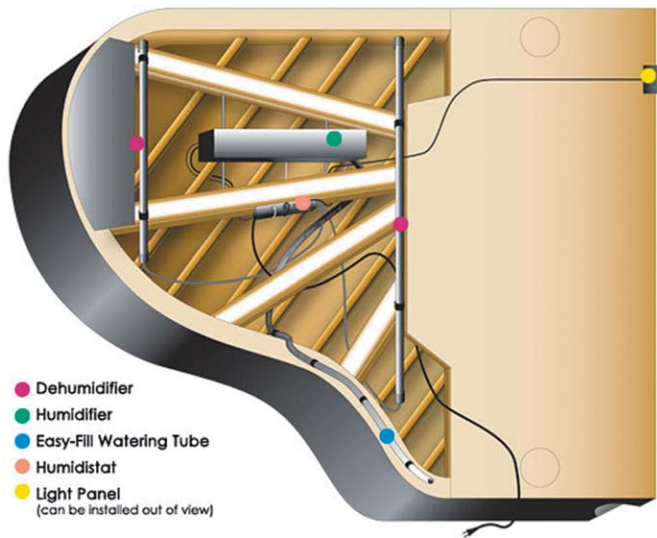
Pianos also need other kinds of service. Due to settling and compacting of numerous cloth and felt parts, as well as seasonal changes in humidity, the piano's action (key and hammer mechanism) requires periodic adjustments to bring it back to the manufacturer's specifications. This process is called *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.



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



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



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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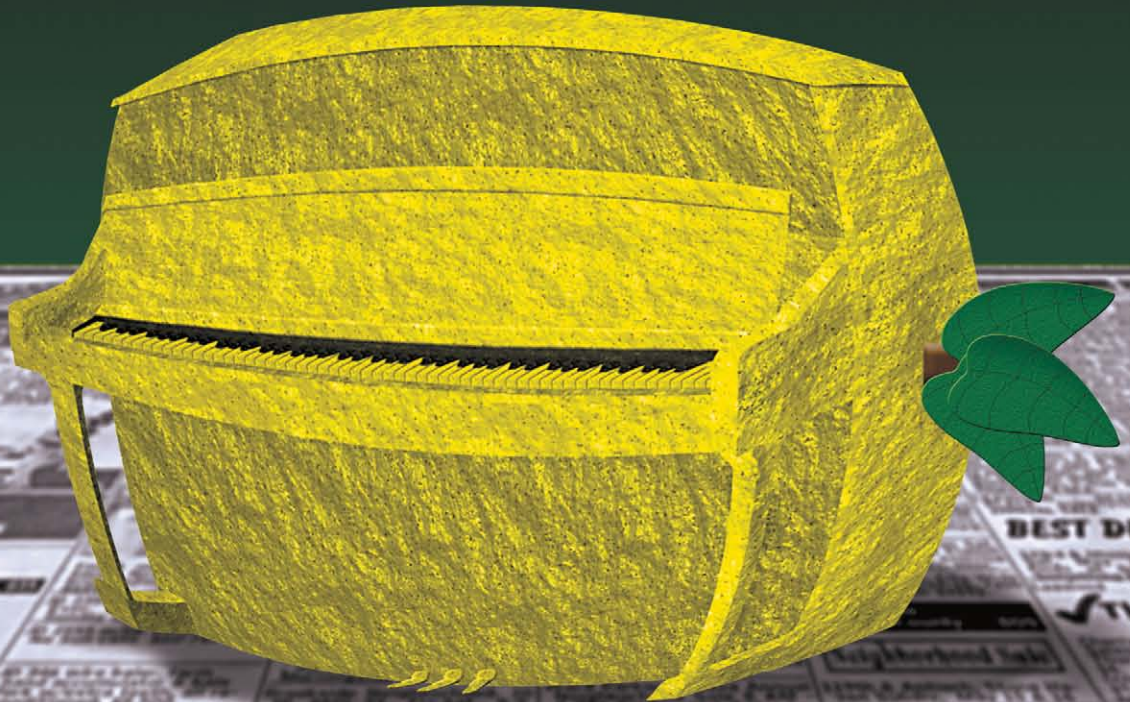
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Humidity Control

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 Damp-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



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WHEN SHOULD I HAVE MY PIANO TUNED?

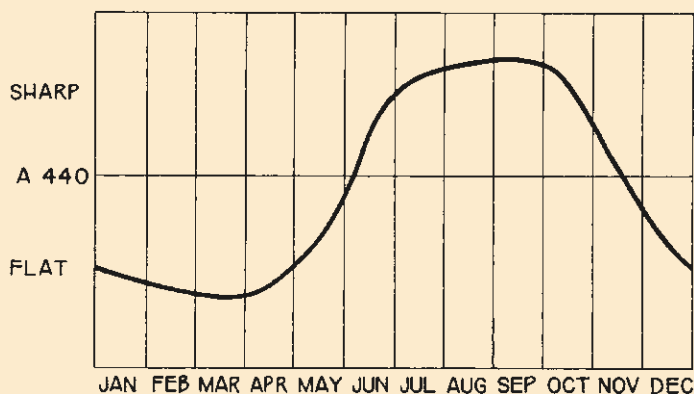
When to tune your piano depends on your local climate. You should avoid times of rapid humidity change and seek times when the humidity will be stable for a reasonable length of time. Turning the heat on in the house in the fall, and then off again in the spring, causes major indoor humidity changes, 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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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 Damp-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. 



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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

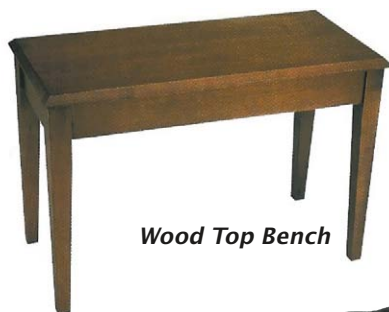
come in a heavy-duty vinyl and look like leather; tops of actual leather are available at additional cost. Both look great and wear well. The best ones, such as those made by Jansen, are expensive (\$500 to \$750) but are built to last a lifetime. Over the past few years, lesser-quality adjustable benches 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.

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



Padded Bench



Wood Top Bench



Stretcher Bench



*Adjustable
Artist Bench*



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.
- **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.



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Bench Cushions

- **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, 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;

Pedal Extenders



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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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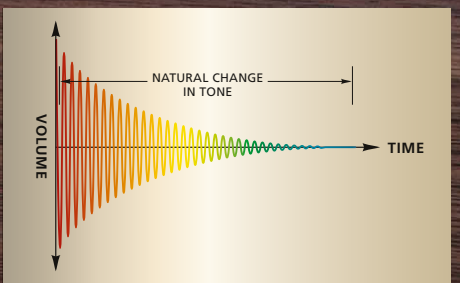
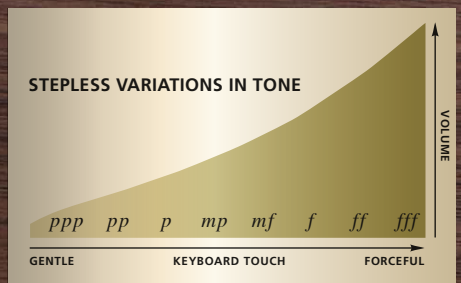
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IF, AFTER HAVING READ “**Acoustic or Digital: What’s Best for Me?**,” you’ve decided on a digital piano, the next step is shopping for and selecting the right model for your needs. There are currently over 200 models of digital piano on the market. 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.

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

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,



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.

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.

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



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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.

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.

There is a great deal of variation in “good” piano tone. Many players like a bright, crisp sound, while others prefer a mellower tone.

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 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,

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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 investing in older models becomes

Aside from sound, the most important element in the selection of an instrument is likely to be the feel of the action.

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 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. 

Furniture-style models are available only through traditional bricks-and-mortar piano or full-line music retailers.

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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

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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

bels (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-

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**.” 

Even the best sample set is unimpressive if sparkling highs and thunderous lows are weak or missing.



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 *UltraHyperDy-noMorphic 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. 🎧



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 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 Giga-bytes (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 excuse 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



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The Piano Forums on Piano World boast **over one million posts**, created by the more than 42,000 registered members (membership is free). The forums are actually a collection of a number of different forums, each with a particular focus, providing something for everyone.

A **comprehensive classified** section offers listings of piano dealers, tuners-technicians, restoration shops, teachers, and movers.

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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.

If you're not particularly into computers, software pianos may not be for you. But if you enjoy even a mild bit of tinkering, and have dreamed of owning a collection of the world's finest pianos or even of "designing" your own piano, you may find software pianos an irresistible temptation. If you're interested in following the world of piano software, it's discussed in Piano World's "**Digital Pianos—Synths & Keyboards**" forum. 



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 acoustical 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 keystroke 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 MIDIPiano). 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”



All Story & Clark pianos come with a factory-installed PNOscan MIDI strip beneath the keys.

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

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

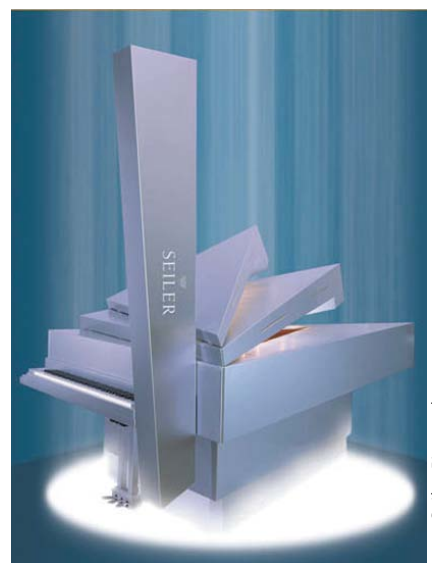
is that of price. The AvantGrand model N3, with the sound, and perhaps the feel and experience, of a Yamaha concert grand, has an MSRP of \$19,999 and a street price of around \$15,000. This is roughly comparable to the price of a 5'3" Yamaha model GC1M, one of Yamaha’s lower-level consumer-grade acoustic 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.Seller-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 electromechanical 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

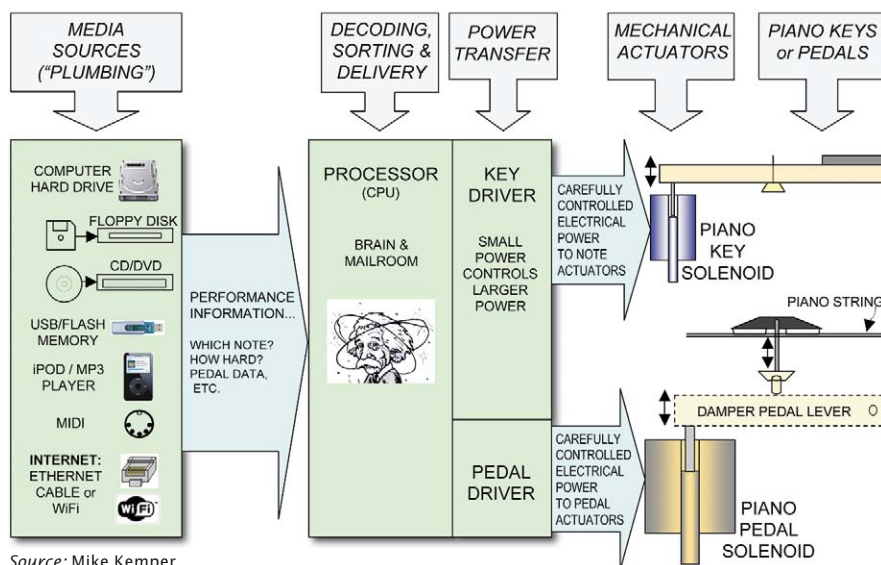


The underside of a grand piano with solenoid rail (uncovered), power supply, and speaker installed.

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-

trol 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

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 \$8,000 to \$20,000 (street price) more than the same Yamaha model without the player system. At the high end, a Bösendorfer CEUS will set you back \$45,000 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

Yamaha Corporation of America
P.O. Box 6600
Buena Park, California 90622
714-522-9415
info@boesendorferus.com
www.boesendorfer.com

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.

LIVE PERFORMANCE MODEL LX

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www.live-performance.com

Live Performance was founded in 1992 by Wayne Stahnke, one of the world's foremost authorities in the design 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



The black keys aligned with the fallboard display are among the controls used to operate the Bösendorfer CEUS.

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. Software is available to translate MIDI and ESEQ (a Yamaha format) files into native LX format, extending the benefits of the LX's high-resolution performance to these files, too.

PIANODISC

PianoDisc
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916-567-9999
www.pianodisc.com

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. Piano manufacturers offer factory-installed PianoDisc products, and piano dealers also have the installation done at their own locations by trained and certified PianoDisc technicians.

New in 2010 is PianoDisc's high-resolution playback technology,



PianoDisc's Sync-A-Vision consists of a high-definition monitor built right into your piano's music rack.

SilentDrive HD, which features a faster processor and streamlined architecture that improve timing, velocity, and dynamics. With SilentDrive HD, each note has 1,024 levels of expression, so things like trills, for example, play back with much more accuracy than was possible before. SilentDrive HD is basic equipment on Opus7 (see below), and is also available as an upgrade to other systems.

Also new in 2010 is PianoDisc's live, 24/7, free streaming radio. Originally created for, and exclusive to, the Opus7 system, PianoDisc has now made this feature available free to all of its iQ (see below) customers as well. This service is of special interest to hotels, restaurants, and other business establishments that use PianoDisc to provide non-stop royalty-free entertainment to their customers.

PianoDisc's newest player system is iQ. Hidden within the piano body, iQ can play back PianoDisc music using almost any media player (MP3, iPod, iPad, Xbox, DVD, CD player, etc.) as a source. The most popular configuration is bundled with an Apple iPod. With iQ, customers can operate all functions of the system from one familiar source.

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. When combined with the TFT Record option, 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 model 228CFX 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 disc.

PianoDisc's entry-level player system is PianoCD, an easy-to-use system that plays only PianoDisc and regular audio CDs, and has fewer features than other PianoDisc systems.

The flagship of the PianoDisc line is Opus7, the first player system to

Who
plays
your
piano?

iQ & iPad

The Intelligent Player System

Give your
piano an iQ!

- Plays any Piano
- Full Wireless Control
- Huge Library from Bach to Rock
- HD – 1,024 Levels of Expression
- Record & Playback
- Music Download & Free Internet Streaming

PianoDisc

(916) 567-9999
www.pianodisc.com

Elida Dakoli
PianoDisc/Mason
& Hamlin artist



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.

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 instrumental accompaniment (most of it "live"), and vocals. PianoDisc systems also play any standard MIDI files (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. Piano-Video 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 comes with a high-definition monitor built into a piano music rack, and is powered by a computer, such as Apple's Mac mini, that 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 using 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, pedalswitches, 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

Pianoforce LLC
333 N. Falkenburg Rd. #122
Tampa, Florida 33619
877-542-8807
sales@pianoforce.com
www.pianoforce.com

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

QRS Music Technologies, Inc.
269 Quaker Drive
Seneca, Pennsylvania 16346
800-247-6557
814-676-6683
www.qrsmusic.com

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 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



QRS Music Technologies, Inc.

The QRS Pianomation Ancho controller includes CD and Compact-Flash drives.

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.

Delivering quality,
value and innovation
in music technology
for over 100 years.



WWW.QRSMUSIC.COM

1-800-247-6557

To discover the benefits of PNOscan™,
see our other ad on page 19.

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.

[As this issue of *Piano Buyer* goes to press, QRS has just introduced PNOmation II. In this version of the system, the control box is hidden underneath the piano, and it's no longer necessary to load actual CDs into a CD player to play songs. The system can be controlled, and music can be sampled, purchased, and downloaded, via the remote, or with any web-enabled device, such as an iPad, laptop, or smart phone. QRS offers owners of previous versions a way to update their systems affordably.]

YAMAHA DISKLAVIER

Yamaha Corporation of America
P.O. Box 6600
Buena Park, California 90622
714-522-9011
800-854-1569
infostation@yamaha.com
www.yamaha.com

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 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 current Mark IV Version 4.0 operating system provides Disklavier owners with the ability to control their system with an iPhone or iPod



The Yamaha Mark IV Disklavier comes with hard, CD, and floppy-disk drives; headphones, and pocket wireless remote control, among other features.

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 recently, 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 5' 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.

Current E3 Version 3.0 adds 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, which debuted 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

For current, Chinese-made pianos:

North American Music, Inc.
11 Holt Drive
Stony Point, New York 10980
845-429-0106

For older and U.S.-made pianos:

Baldwin Piano Company
309 Plus Park Boulevard
Nashville, Tennessee 37217
615-871-4500
800-876-2976
800-444-2766 (Baldwin 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. In 2001, a combination of foreign competition and management problems resulted in bankruptcy, and purchase 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 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. In addition to re-creating versions of former U.S. vertical models, Baldwin is also in the process of creating a number of new models to fill various price points and meet consumer demand. At the moment, the model lineup is in flux. See Baldwin's website and the **Model & Pricing Guide** in this book for more information.

Baldwin grands are made at the Dongbei piano factory in Yingkou, China, which Gibson purchased in 2007 (models beginning with BD, formerly 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. The Artist grands are still available from existing U.S.

inventory. In addition to standard cabinet finishes, they 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.

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 **Irmler**.

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In Canada, contact Blüthner Piano Canada Inc.
604-264-1138

rrgarvin@telus.net
www.bluthner.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, Blüthner 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.

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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. The pianos use Czech actions with Abel or Renner hammers. All grands have a slow-close fallboard. Bohemia pianos play very well, with a nice, bright, singing treble tone.

Bohemia makes four sizes of vertical piano from 44" to 52", and four sizes of grand from 5' 3" to 7' 4". In 2010, a new collection, Rhapsody (vertical model numbers beginning with R and grand model numbers beginning with BT), replaced several discontinued models.

Warranty: 5 years, parts and labor, to original purchaser.

BÖSENDORFER

Yamaha Corporation of America

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www.boesendorfer.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 ivorine 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 Liszt Anniversary model, a limited edition of 25 instruments, commemorates the 200th anniversary of the great composer's birth. Gold-leaf inlays decorate the pedal lyre and legs, and a silhouette of Liszt, outlined in gold leaf, adorns the 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. The Bösendorfer model 200 is optionally available with a Yamaha Disklavier E3 installed.

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

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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® pin-block 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.

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 London

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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 (PE) pianos, made in China, are designed in Vienna and use European components 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. The scale design of the 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 Conservatory Edition (CE), for the more price-conscious buyer, is also made in China, and comprises all Chinese parts (except for Japanese hammer felt), and receives Brodmann quality control.

The Artist Series (AS), introduced in 2011 and available only in the larger grand sizes, is partially made in China and then shipped to Germany, where the strings and action are installed and all musical finishing work is performed. The rim is made of maple; the soundboard, ribs, and pinblock are from Bolduc in Canada; and the piano uses a Renner action, Kluge keyboard, and Abel or Renner hammers.

The Brodmann company also makes an entry-level piano line called Taylor London, made in China

with Asian parts, and subject to Brodmann's quality control.

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

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(Chris Syllaba)

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Schmitt Music

2400 Freeway Blvd.

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763-566-4560 x5075

(Wayne Reinhardt)

www.crisforipianos.com

Pianos made by: Guangzhou Pearl River Piano Group Ltd.,
Guangzhou, Guangdong Province, China

Originally issued under the name Opus II, the Cristofori and Lyrica brands are a joint undertaking by Jordan Kitt's Music, which owns and operates four piano dealerships in the D.C. and Atlanta markets; and Schmitt Music, which has more than a dozen locations throughout the Midwest and in Denver. Nearly ten years ago, wanting to improve their entry-level product offerings, the two companies combined forces to negotiate upgrades of product features and quality control directly with the factory. Today, although the brands are identical, Cristofori is sold only in Jordan Kitt's stores, Lyrica in Schmitt Music stores. Bartolomeo Cristofori (1655–1731) was, of course, the inventor of the piano.

The Cristofori and Lyrica lines are manufactured by China's largest piano manufacturer, Guangzhou Pearl River Piano Group. The uprights come in numerous sizes, styles, and finishes, including 42½" continental consoles and 43" decorator consoles in traditional and French cherry cabinets. The 48" professional upright, appropriate for home or institutional use, has double front legs and toe blocks for strength, and a large soundboard

and long strings for bigger sound. Grands come in lengths of 4' 10", 5' 3", 5' 7", and 6' 2". The 5' 3" and 5' 7" sizes are wide-tail designs, which gives these mid-sized grands a larger soundboard area and, thus, a bigger sound.

The Cristofori and Lyrica pianos are differentiated from Pearl River's own line of pianos by upgraded specifications such as the use of highest-quality Mapes strings from the U.S.; all-spruce veneered soundboards of premium Siberian spruce; a different selection of cabinet styles; and a full, transferable warranty. U.S. technicians inspect every Cristofori and Lyrica piano at the Pearl River factory 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 four 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.

EDELWEISS

Edelweiss Piano Company
1066 Pianos (USA) Inc.
P.O. Box 7728
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406-863-1066
ustrade@edelweiss-piano.com
www.edelweiss-piano.com

Pianos made by: various Chinese suppliers

Edelweiss Piano Company is a subsidiary of 1066 Pianos, a long-established family-owned U.K. firm specializing in high-end rebuilding and custom-made designer pianos. Although all of the rebuilding and custom manufacture are carried out in 1066's own workshops in Cambridge, England or in the U.S., the company also sells new instruments, under the Edelweiss brand, which it sources from various Chinese suppliers, who build them to 1066's designs. The pianos feature German Strunz soundboards and Abel hammers, among other quality components.

Edelweiss model G50 pianos have the distinction of being, at only 4' 2" (127 cm) long, the shortest grand pianos on the market; and with only 85 notes, they are also a little narrower than other grands. The piano rim,

instead of being straight on one side and curved on the other, is symmetrical, and comes in two furniture styles: "half moon" and "butterfly." With half moon, the semi-circular lid is hinged at the front and propped up at the rear. A semi-circular music rack mirrors the lid's shape. With butterfly, the lid is hinged at the middle, creating two mini-lids like butterfly wings, each propped up on the side. The instrument's small size and unusual shape may permit it to fit in places others will not. Stock colors are polished ebony and polished white; custom colors are available.

Other, more standard, models of Edelweiss piano will soon be available in the U.S., but specifications and prices were not available at press time. See the company's website for current information.

Warranty: 5 years parts and labor, to original purchaser

ESSEX

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Pianos made by: Guangzhou Pearl River Piano Group Ltd.,
Guangzhou, Guangdong Province, China

Essex pianos are designed by Steinway & Sons engineers and are made in China by Pearl River. Steinway 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 included a new and very complete line comprising 35 grand and 31 vertical models and finishes.

Today, two grand sizes and three vertical scales are made. The 42" model EUP-108 is a continental-style version of the 44" model EUP-111 console. The 46" model EUP-116 studio is available in 10 different and striking cabinets designed by Steinway & Sons and renowned furniture designer William Faber. Styles include: Classic, Queen Anne, Italian Provincial, French Country, 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 48" model EUP-123

upright comes in a traditional style in four finishes, along with Empire and French styles; an all-new school model, the EUP-123S, is offered in ebony polish only.

The Essex grands are available in 5' 1" (EGP-155) and 5' 8" (EGP-173) sizes in Classic and French Provincial styles. They come in a variety of regular and exotic veneers in high polish polyester and satin luster (semi-gloss) 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, like those used in Steinway grands, to preserve hammer spacing; pear-shaped hammers with reinforced shoulders and metal fasteners; vertically laminated bridges with a solid maple cap; duplex scale; radial bracing (in grands); and staggered backposts (in verticals).

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 factory. I expect that the quality of the Essex pianos will be toward 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: 5 years, parts and labor, to original purchaser.

ESTONIA

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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", 7' 4" (introduced in 2011), 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

Fandrigh & Sons Pianos
7411 Silvana Terrace Road
Stanwood, Washington 98292
360-652-8980
877-737-1422

fandrigh@fandrigh.com
www.fandrigh.com

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 Fandrigh actions in selected new pianos, selling them under the Fandrigh & Sons label. They also sell some grands (with regular grand actions) under that name.

Over the years, the Fandrighs have installed their actions in over 200 instruments, including ones from Pearl River, Wilh. Steinberg, Klima, Feurich, and Bohemia. At present, the action is being installed in Bohemia models R126 (49.6") and R132 (52"), designed by Bohemia's owner, Bechstein, and sold under the Fandrigh & Sons label. The converted pianos are available directly from the Fandrighs.

Playing a piano outfitted with a Fandrigh 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 Fandrighs have now had years of experience in refining and servicing the action, and reports suggest that customers are very satisfied with them.

Fandrigh & Sons grand pianos are made in China by Dongbei, now owned by Gibson Guitar Corp. (see **Dongbei**), and remanufactured at the Fandrigh & Sons facility in Stanwood, Washington. The company offers three sizes of grand piano: models 165 (5' 5"), 185 (6' 1"), and 215 (7' 1"), in three configurations: S, S-H, and HGS-H. The S model retains all the original factory components, including Delignit pinblock, solid spruce soundboard, Röslau music wire, and Abel hammers; the S-H models additionally feature Heller bass strings from Germany; and the HGS-H models feature Heller bass strings, Renner hammer shanks, and Ronsen hammers with Würzen Weickert felt. All models also feature redesigned pedal-lyre and trapwork systems, precision touchweighting using the Fandrighs' proprietary method, and a very lengthy and extensive high-end preparation. All Fandrigh & Sons pianos come with a Damp-Chaser dehumidifier system and an adjustable bench.

The Fandrighs 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 Fandrighs 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 Fandrigh & Sons pianos with the 48" Fandrigh upright that was once manufactured with a Fandrigh Vertical Action by Darrell Fandrigh's brother, Delwin Fandrigh. That piano has not been made since 1994.

FAZIOLI

Fazioli Pianoforti srl
Via Ronche 47
33077 Sacile (Pn), Italy
+39-0434-72026
info@fazioli.com
www.fazioli.com

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

Feurich USA
1771 Post Road East
Suite 239
Westport, Connecticut 06880
203-858-5979
usinfo@feurich.com
www.feurich.com

Pianos made by: Feurich Klavier-u.Fluegelfabrikation GmbH, Gunzenhausen, Germany; and Ningbo Hailun Musical Instruments Co. Ltd., Ningbo, Zhejiang Province, China

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 two sizes of vertical. All pianos and parts are made in Germany.

In 2010, Feurich entered a cooperative relationship with Wendl & Lung, which marketed, primarily in Europe, a line of Wendl & Lung pianos made by Hailun in China. Under the agreement, this line will now be marketed under the Feurich name, and several new and redesigned models will be added. Use of the Wendl & Lung brand name will be discontinued. The two vertical and two grand models currently made in Germany under the Feurich label will continue to be produced there, using only the highest-quality German parts and materials, and over the next few years three larger grand models will be introduced. In addition to being differentiated from the Chinese pianos by designs, sizes, and model numbers, the German pianos will contain the inscription “Handmade in Germany.”

Feurich offers an optional Harmonic Pedal on its grand pianos. This fourth pedal 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.

Warranty: 5 years, parts and labor, to original purchaser.

FÖRSTER, AUGUST

German American Trading Co., Inc.

P.O. Box 17789

Tampa, Florida 33682

813-961-8405

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, Annekatriin. 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

Grotrian Piano Company GmbH
P.O. Box 5833
D-38049 Braunschweig, Germany
+49-531-210100
+49-531-2101040 (fax)
contact@grotrian.de
www.grotrian.de

Friedrich Grotrian was born in 1803 in Schöningen, Germany, 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 C.F. Theodor Steinweg, son of Heinrich Steinweg, to build pianos. Heinrich had emigrated to the U.S. about 1850, soon to establish the firm of Steinway & Sons. Theodor followed in 1865, selling his share in the partnership to Wilhelm Grotrian, son of Friedrich, who had 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.

To commemorate the company's 175th anniversary, Grotrian has issued the 46½" model Composé Exclusif. Limited to only 50 instruments, this elegant model includes such unusual features as 24-karat gold-plated hardware, inner cabinet veneer of red bird's-eye maple, white keys of satin-finish acrylic glass, and a hygrometer embedded in the case.

Grotrian also makes a lower-cost line, called Friedrich Grotrian, with a beech back frame but no back posts, and a simpler cabinet. It's available in a 43½" model in

polished ebony with legs, and in 43½" and 45" models for institutional use, with satin finishes but without legs.

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 no longer made.

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. For several years, Gulbransen served as an entry-level piano line for Story & Clark dealers (see **Story & Clark**), but the line has recently been discontinued.

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. Today, 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. In addition to making pianos under the Hailun name, the company also makes the Wendl & Lung brand (now changing to the Feurich brand—see **Feurich**). Hailun also makes pianos or components under contract for several other manufacturers and distributors.

Currently, the Hailun line consists of eight vertical sizes (mostly larger uprights) and six grand sizes. In 2010, the company introduced the 52" model HU7 (formerly called PE 33), with a duplex scale, agraffes, and a steel capo bar for, the company says, a “lush and powerful sound in the American tradition”; and a 51" model HU3 (formerly called K 5), “which reflects a brighter, more ‘European,’ sound philosophy.” Both have a middle pedal that operates a true sostenuto mechanism.

Hailun is in the process of introducing several new grand and vertical models it calls the Vienna Series. Available only through select Hailun dealers known as Hailun Vienna Merchants, these instruments are intended to address the need of customers for an exacting, quality instrument that “reflects the European tradition of piano building” at a more favorable price, and to “create a warm tonal experience in the tradition of the Viennese sound.” To that end, the pianos use soundboard wood sourced from the North Austrian Alps, and the grands are designed with a wide tail, vertically laminated maple bridges, and a slightly firmer touch and faster action speed. The vertical has a duplex scale, agraffes, a full-perimeter plate, and an enhanced soundboard design. Each purchaser of a Vienna Series piano may, within 18 months of purchase, request that a special highly qualified technician, known as a Vienna Concert Technician, spend a full day of concert-level regulation and voicing on the piano at the customer’s home.

During 2011, Hailun will be introducing a slow-close piano lid in all its grand piano models. Graphically named the Hailun Limb Protection System (HLPS), this is a version of the Safety-Ease retrofit system, described **elsewhere** in this publication, built into the piano at the factory. HLPS allows even a child to easily lift the otherwise heavy lid of a grand piano without danger, and prevents a falling lid from crashing down onto arms and hands. Hailun has exclusive rights to use this system in the manufacture of new pianos.

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.

While modern manufacturing methods are fully utilized, the factory also uses a large amount of skilled manual labor. Chen seeks out the best workers by paying considerably higher wages than other piano makers in China, he says, and provides an in-depth training program for his workers, conducted by piano builders and technicians from the U.S. and Europe. He also 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, keybeds, 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. In 2011, the company began sourcing its own supply of the highest-quality Austrian spruce, and plans to make its own soundboards with this spruce for select piano models. *Piano Buyer’s* reviewers have tried out several Hailun grands (see reviews in the **Fall 2009** and **Fall 2010** issues, and in the **current** issue) and have been impressed with their musicality.

To help it reach the highest quality standards, Hailun has also hired an impressive group of experts from Japan (Ema Shigeru), Europe (Stephen Paulello, Claire Trichet, Sabin Zlatkovic, Peter Veletzky), and the U.S. (Frank Emerson). 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.

Hailun USA has initiated several support programs designed to increase the speed at which service requests are handled, and to measure customer satisfaction. It has also introduced the Hailun Dream Assurance

Program, in which the company guarantees, subject to certain limitations, that the sound of any purchased Hailun piano will be to the customer's liking or, within 60 days of purchase, the company will exchange the piano for another of the same model.

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. See also the Dream Assurance Program, described above.

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. grands are made in China by the Dongbei Piano Company (see **Dongbei**). The company appears to have changed manufacturer for its verticals and some of its grand models, but prefers not to reveal the source.

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.

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@hzmpiano.com

www.hzmpiano.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 Mofat, 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.**

HSINGHAI — See **Beijing Hsinghai.**

IRMLER

including Schiller

Blüthner USA LLC

5660 W. Grand River

Lansing, Michigan 48906

517-886-6000

800-954-3200

916-337-1086

info@irmler-piano.com

www.irmler-piano.com

In Canada, contact Bluethner Piano Canada Inc.

604-264-1138

rrgarvin@telus.net

www.bluethner.ca

Pianos made by: Irmmler Piano GmbH, Leipzig, Germany, and other factories (see text)

Irmmler is a sister company of Blüthner, and Irmmler pianos are distributed through the Blüthner dealer network. The brand has recently been reintroduced to the market in two series: Studio and Professional.

The Studio series is largely made in a factory in China owned by Irmmler. The pianos are then shipped to the Blüthner factory in Germany, where Abel hammers are installed and the pianos are inspected and adjusted 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, also known as Irmmler Europe, is assembled in Germany using strung backs (structural and acoustical elements) from Samick in Indonesia and cabinets from Poland (suppliers are subject to change). 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. Vertical actions are by Detoa.

The Irmmler Studio series is also available from some dealers under the Schiller brand name, with a slightly modified cabinet; prices are comparable to those for Irmmler.

Warranty: 10 years, parts and labor, to original purchaser.

KAWAI

including Shigeru Kawai

Kawai America Corporation

2055 East University Drive

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. More than 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 506N, 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 Lauretta—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 K-5 has Neotex synthetic-ivory keytops. The 52" models also

feature agraffes, duplex scaling, Neotex 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.)

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 300 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. Because the Shigeru Kawai pianos have been on the market only ten years and in very limited quantities, many piano technicians have yet to service one. Those who have, however, tend to rank them among the world's finest instruments, and Shigeru Kawai pianos are often chosen by pianists participating in international piano competitions.

Warranty: Kawai and Shigeru Kawai—10 years, parts and labor, transferable to future owners within the warranty period.

KEMBLE

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 no longer distributed in U.S.

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. For a description of the Kemble line, and for Kemble model and price information, see the Fall 2009 or Spring 2010 issue of *Piano Buyer*.

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. 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; Herrburger Brooks 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 Herrburger Brooks 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 facility 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.

KINGSBURG

Doremi USA Inc.
5036 Dr. Phillips Boulevard, Suite 288
Orlando, Florida 32819
866-322-5986
info@kingsburgusa.com
www.kingsburgusa.com

Pianos made by: Yantai Kingsburg Piano Co., Ltd., Yantai, Shandong Province, China

Yantai Kingsburg, formerly known as Yantai Longfeng, was established in 1988, and at various times made pianos under the Steigerman and Perzina brand names. It is located in a temperate area of northern China that, the company says, is ideal for piano making because of its moderate humidity level.

All Kingsburg pianos have been designed by well-known piano designer Klaus Fenner, and include components sourced from around the world, such as Röslau piano wire, Abel hammers, Detoa or Renner actions, and Japanese tuning pins. Interesting design features

include longer keys on upright models for more grand-like performance, brass-bar duplex scale, and the company's exclusive Tri Board solid spruce soundboard, which, for better bass tone and improved tuning stability, is unattached to the piano back at the bottom.

At present, the Kingsburg line comprises larger uprights and two sizes of grand, with plans to possibly expand into the market for home console pianos. Custom styles and finishes are also available.

A key focus of Yantai Kingsburg is that the final factory preparation of the pianos be done in such a manner that the dealer can deliver the instrument to the customer's home with very little additional work being required. To that end, the U.S. distributor's Japanese affiliate sends highly trained technicians to the factory to fully tune, voice, and regulate each Kingsburg piano to their high standards before it is crated for shipment.

Warranty: 12 years, parts and labor, to original purchaser.

KNABE, WM.

See also [Samick](#).

Samick Music Corp. (SMC)
1329 Gateway Drive
Gallatin, Tennessee 37066
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

Wm. Knabe is an old, distinguished American piano brand that dates back to 1837 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.

For several years, SMC completed assembly of Wm. Knabe grands in its Tennessee facility, with strung backs made in Indonesia or Korea. Now, most Wm. Knabe pianos are made in their entirety in Indonesia, but are still uncrated in the U.S., where they are inspected, tuned, regulated, and voiced before being shipped to dealers.

For more information, see **Samick**.

Warranty: 10 years, parts and labor, transferable to future owners within the warranty period.

KOHLER & CAMPBELL — See **Samick**.

MAMMOTH

Mammoth Piano Co.
Monroe, Washington
877-957-4266
mammothpiano@comcast.net
www.mammothpiano.com

Reminiscent of some piano designs attempted 200 years ago, the Mammoth is one of the most unusual pianos being built today. Dubbed a Vertical Concert Grand, Mammoth's model VCG stands 7' 2" tall, weighs 1,200 pounds, and has the scale design and sound of a 9' concert grand.

The piano's immense structure includes six laminated wooden back posts and a welded steel frame, yet despite its bulk, the instrument appears quite attractive in its custom-made cabinet of Brazilian cherry. The soundboard and ribs are of Sitka spruce. The action, invented specifically for this piano, appears superficially to be like that of a vertical, but actually contains the double-escapement feature of a grand piano action.

Inventor-builder Chris Chernobieff got his start assembling dulcimer and harpsichord kits, and branched out into piano service and rebuilding about 15 years ago. Inspired by other technicians who built their own pianos, Chernobieff asked, "Why not me?" Having spent the last several years designing and building the Mammoth, he now



has plans for a 6' vertical and some innovative grand models.

Mammoth model VCG retails for \$98,000.

MASON & HAMLIN

Mason & Hamlin Piano Company
4111 North Freeway Blvd.
Sacramento, California 95834
800-566-3472
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 all Mason & Hamlin pianos.

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. The company’s worldwide sourcing of parts and materials, along with its investment in modernized equipment, has made the Mason & Hamlin a better instrument while keeping the piano’s price at a reasonable level. 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
888-516-6528
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 44" to 52" and four grand models from 4' 10" to 6' 2".

PALATINO

The Music Link
P.O. Box 57100
Hayward, California 94545
888-552-5465
piano@palatinousa.com
www.palatinousa.com

Pianos made by: AXL Musical Instrument Co., Ltd. Corp.,
Shanghai, China

Although Palatino may be a relatively new name to the piano world, it is not a newcomer to the music business. For almost 20 years, parent company AXL has been manufacturing a full range of musical instruments under its own name and under a variety of other, recognizable brand names. The company has a highly automated factory, employing CNC routers from Japan and Germany, and importing high-quality materials and components for its pianos from around the world.

Palatino makes about 7,000 pianos annually in two categories: Classic and Professional. The Professional series includes the 50" vertical Messina model (PUP-126TU) and the 5' 9" grand Palermo model (PGD-59). The Classic series includes a number of models based on traditional designs. Features common to all Palatino pianos include solid spruce soundboard, high-quality Japanese hammers, hard rock maple bridges and pinblock, German Röslau strings, wet-sand-cast plate, Renner-style action, slow-close fallboard, solid brass hardware, and adjustable artist bench (except PUP-110 model). In addition, Professional series pianos have higher-grade Canadian white solid spruce soundboards and German Abel hammers.

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

American PR Musical Instruments, Inc.
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).

Over the past couple of years, Pearl River has revised and streamlined its model lineup with the assistance of Lothar Thomma, a well-respected German scale designer. Some new models have been introduced, and older models have been reviewed and modified. Currently, Pearl River verticals begin with the 42½" console model 108 in continental style (no legs) and a style with legs and toe blocks, and with the 43" model 110 in a variety of American furniture styles. They continue with a series of studio models, including the 45" model 115 in a traditional institutional style (legs with toe blocks), and the 45" model 115E in a school-friendly institutional style. Finally, there are the upright models, including the newly designed 48" model EU122 and the 51½" model 130, both in institutional style. Three additional newly designed vertical models—T1 (46"), T2 (47½"), and T3 (48")—are available only by special order.

Pearl River grands come in six sizes, from 4' 11" to 9', including the three newly designed models GP160 (5' 3"), GP170 (5' 7"), and GP188A (6' 2").

Until a couple of years ago, 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. All the new models feature solid spruce soundboards, Renner hammers, and Röslau strings, among other higher-quality features. *Piano Buyer's* reviewers have tried out several of the new grand models and have been very impressed (see reviews in the **Fall 2009**, **Fall 2010**, and the **current** issues).

A new, lower-cost line of Ritmüller pianos, introduced in 2011, consists of vertical models 43½" UP-110RB, in several furniture styles, and 47½" UP-121RB, and 4' 11" grand model R-8. These models, also designed by Lothar Thomma, contain an all-spruce, veneered soundboard and Röslau strings; the grand uses Abel hammers.

Warranty: 10 years, parts and labor, to original purchaser.

PERZINA, GEBR.

Piano Empire, Inc.
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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 Perzina pianos. The Carl Ebel and Gerh. Steinberg brands made at this factory are no longer distributed in the U.S.

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 sound very good, their bass being particularly notable.) Soundboards are of solid Austrian white spruce. A premium series of verticals (model numbers ending in R) come with Renner AA or Abel Deluxe hammers.

A new line of Perzina grand pianos was introduced in 2011, designed and manufactured by Perzina in cooperation with a major European manufacturer. All contain solid Austrian white spruce soundboards, duplex scaling, and Renner AA or Abel hammers, among other high-quality components. A Perzina action is standard, with Detoa and Renner actions optionally available at additional cost. All models come with a slow-close fallboard, and most come with an adjustable artist bench.

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

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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, from the manufacturer.

PRAMBERGER

See also [Samick](#).

Samick Music Corp. (SMC)
1329 Gateway Drive
Gallatin, Tennessee 37066
615-206-0077

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www.smcmusic.com

Pianos made by: Samick Musical Instrument Mfg. Co. Ltd.,
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, formerly made in Korea, and now made in Indonesia under Korean supervision using the CNC equipment acquired by Samick during its partnership with Bechstein. It is then shipped to the U.S. for inspection, tuning, regulating, 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 (or beech) rim, an asymmetrically tapered white spruce soundboard, vertically laminated and tunneled maple

and mahogany bridges with maple cap, duplex scaling, a Renner/Pramberger action, and Renner or Abel 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. This line uses Samick's Pratt-Reed Premium action, Renner or Abel 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, transferable to future owners within the warranty period.

RAVENSCROFT

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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.

RITMÜLLER — See **Pearl River**.

SAMICK

including Kohler & Campbell.

See separate listings for **Wm. Knabe**, **Pramberger**, and **Seiler**.

Samick Music Corp. (SMC)
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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.

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 (SMC), the North American sales and marketing arm of the Korean company, distributes Samick, Kohler & Campbell, Pramberger, Wm. Knabe, and Seiler pianos in North America (see separate listings for **Wm. Knabe**, **Pramberger**, and **Seiler**). Samick no longer distributes pianos under the Bernhard Steiner, Conover Cable, Hazelton Bros., Remington, and Sohmer & Co. names. SMC has a manufacturing, warehousing, and office facility in Tennessee, at which it uncrates, inspects, tunes, regulates, and voices its upper-level Wm. Knabe, J.P. Pramberger, and Kohler & Campbell Millennium-series pianos before shipping them to dealers. 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.

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: 10 years, parts and labor, transferable to future owners within the warranty period.

SAUTER

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www.sauter-pianos.de
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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 [Irmiler](#).

SCHIMMEL

including Vogel and May Berlin
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schimmel@ptd.net
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Pianos made by: Wilhelm Schimmel Pianofortefabrik GmbH, Braunschweig, Germany (Schimmel) and Kalisz, Poland (Vogel); unspecified factory 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.

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 and its own keyboards, which it also supplies to other German piano makers.

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. The Trilogy I group consists of the 7' 6", 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. In the Trilogy II group, Schimmel has married the front-end (keyboard) of its 7' grand to two smaller models: 5' 7" and 6' 3". The smaller models have the same treble scale, keyboard, and action as the 7' grand, so all three have a similar sound and touch. On all Konzert

grand models, the case sides are angled slightly to obtain a larger soundboard, and all have tunable front and rear duplex scales for greater tonal color, real ebony sharps, and mineral white keytops to mimic the feel of ivory, among other advanced features. The largest grands have reinforced keys for optimal energy transmission.

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 52" 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. The pianos are made by a selected, but unspecified, supplier. The company says it sends soundboard wood and hammer felt for grand pianos to the factory in China. When completed, the pianos are inspected in the factory by a top Schimmel technician who travels to China every few weeks.

Warranty: Schimmel, Vogel, May Berlin—10 years, parts and labor, to original purchaser.

SCHULZE POLLMANN

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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

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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.

In mid-2011, Samick will be expanding the Seiler line to cover three different price points. The top-level instruments will be the German Seiler pianos just as they are made today. The second-level instruments will use grand rims and cabinet parts made and finished in Indonesia, but manufacture and assembly of all other components, and final musical finishing, will be done in Germany. The third-level instruments will be made entirely in Indonesia with high-quality parts. Models at all three levels will incorporate authentic Seiler German scale designs. Details and prices were not yet available at press time.

Warranty: 10 years, parts and labor, to original purchaser.

SEJUNG

including Falcone, Hobart M. Cable, Geo. Steck

Welkin Sound

1590 S. Milliken Ave., Unit H

Ontario, California 91761

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."

Warranty: 12 years on parts, 10 years on labor, to original purchaser.

SOHMER

Persis International, Inc.

2647 N. Western Ave. #8030

Chicago, Illinois 60647

773-342-4212

www.sohmer-piano.com

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 stopped 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.")

Sohmer pianos from Persis International 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.

STECK, GEO. — See **Sejung**.

STEINBERG, WILH.

Unique Pianos
Brian Gatchell
25 South Wickham Rd.
Melbourne, Florida 32904
888-725-6633
321-725-5690
brianatlantic@bellsouth.net
www.Wilh-Steinberg.com

Pianos made by: Thüringer Pianoforte GmbH, Eisenberg, Germany

This company, formerly known as Wilh. Steinberg Pianofortefabrik, was formed after the reunification of Germany by the merger of several East German piano companies that collectively trace their origins back to 1877. In addition to its own pianos, Steinberg makes several other European piano brands under OEM agreements. The company also specializes in custom cabinets and finishes. Piano production is about 700 verticals and 80 grands per year.

In 2009, Steinberg introduced a new marketing concept that involves selling pianos at three levels of quality. The first level, IQ, is the traditionally crafted piano that the company has made entirely in Germany for many years. These high-quality instruments have beech rims with spruce bracing (grands), solid Bavarian spruce soundboards, maple bridges with maple caps, Renner actions and hammers, and Kluge keys. The second level, AC (Advanced Craftsmanship), uses some nonacoustical components manufactured in China, but the instruments are assembled, regulated, and voiced in Germany. The third level, P (Premium), consists of

instruments entirely made in China, with only final preparation done in Germany. This level is not currently being imported into the U.S.

Warranty: 5 years, parts and labor, to original purchaser.

STEINGRAEBER & SÖHNE

Steingraeber & Söhne
Steingraeberpassage 1
95444 Bayreuth, Germany
+49-921-64049
+49-921-58272 (fax)
steingraeber@steingraeber.de
www.steingraeber.de

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 found themselves without any heirs willing or able to take over the business, and without enough capital to finance much-needed equipment modernization; eventually, in 1972, they sold their company to CBS. 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 that Steinway calls Satin Lustre. Limited Edition models, issued at irregular intervals, are reproductions of turn-of-the-century designs, or pianos with artistic elements that make them unique. The newest Limited Edition model, honoring the 70th anniversary of the birth of John Lennon, is the Imagine Series, a white piano that incorporates artwork by Lennon, along with other design elements.

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.

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.

Musical and cabinet detailing, such as factory voicing and regulation, and plate and cabinet cosmetics, are reasonable, but have traditionally lagged somewhat behind the company's European competitors in finesse. Over the last couple of years, however, the company has been making a determined effort to remedy this by paying close attention to many small details, and by applying lessons learned from its European operations. Examples include: rounding the edges and corners of satin ebony models so they will better hold the finish and not prematurely wear through; more careful wood-working on the bottom of the piano, and applying a clear coat of lacquer to the bottom instead of painting it to cover imperfections; protecting the case and plate during stringing and other manufacturing operations so they don't have to be touched up, often imperfectly, later on; additional time spent playing-in pianos during manufacture in order to naturally harden the hammers so they don't need quite so much chemical hardening and voicing in the field; and other improvements too numerous to mention here. (See discussion and photo essay on this subject in the **Spring 2011 issue** of *Piano Buyer*.)

Steinway pianos require more preparation by the dealer than most pianos in their class, but, as mentioned above, 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 may be one of the reasons that European quality standards are appearing to be 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](#)").

Story & Clark offers two series of vertical and grand pianos, which are made to its specifications by various Chinese and Indonesian manufacturers. 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. In fact, in 2011 the company introduced a hybrid piano (46" model S7) equipped with—in addition to PNOscan—a key stop rail, sound module, speakers, and headphones, allowing the instrument to function as either an acoustic or a digital piano. (Read more about [hybrid pianos](#) elsewhere in this issue.)

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 — See [Feurich](#).

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.

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.

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. All Yamaha verticals under 48" tall are now made in China.

The uprights are the very popular 48" model U1; the 48" model T121SC, made in China, with a slow-close fallboard; and the 52" model U3. 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). Except for the model T121SC, made in China, the uprights are all 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 five levels of sophistication and size. The Classic Collection consists of the 5' model GB1K, the 5'3" model GC1M, and the 5'8" model GC2. 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 7' 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. All Conservatory grands have keytops of Ivorite™, Yamaha's ivory alternative.

Finally, the new CF Series Concert Grand Pianos (replacing the current Handcrafted Concert Collection) 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.

In Fall 2011, Yamaha is introducing two new models—6' 1" model C3XA and 7' model C6XA—that incorporate some of the design elements of the limited-production CF series into the higher-production

C-series pianos to create a similar sound. Features include a European spruce soundboard crowned using CF-series technology, a thicker rim and bracing, German music wire, additional time spent voicing, regulating, and tuning by very skilled craftsmen, and some cabinet design changes.

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.

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 MIDIPiano), 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.

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 and 2011, 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.

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 July 2011.

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 195.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
BALDWIN					
Verticals					
B242		42	Satin Cherry/Walnut	8,050	5,590
B342		43	Designer French Satin Cherry	8,750	5,990
B442		43	Designer Satin Mahogany	8,750	5,990
BJ120		46	Polished Ebony	6,995	4,990
BJ120		46	Polished Rosewood	7,295	5,190
BH122		47	Polished Ebony	7,695	5,390
B243		47	Satin Ebony/Walnut (school piano)	8,750	5,990
B247		47	Polished Ebony	8,750	5,990
BH125		49	Polished Ebony	8,750	5,990
B49		49	Polished Ebony w/sostenuto	9,795	6,590
B252		52	Satin Ebony	11,195	7,390
B252E		52	Euro-style Polished Ebony	11,195	7,390
China Grands					
BD146	4	8	Satin Ebony	15,750	9,990
BD146	4	8	Polished Ebony	15,395	9,790
BD146	4	8	Polished Mahogany/White	16,100	10,190
BD152	5		Satin Ebony	16,795	10,590
BD152	5		Polished Ebony	16,450	10,390
BD152	5		Polished Mahogany/White	17,150	10,790
BD165	5	5	Satin Ebony	17,850	11,190
BD165	5	5	Polished Ebony	17,495	10,990
BD165	5	5	Polished Mahogany/White	18,195	11,390
BD185	6	1	Satin Ebony	19,950	12,390
BD185	6	1	Polished Ebony	19,595	12,190
BD185	6	1	Polished Mahogany/White	20,295	12,590
BD215	7		Polished Ebony	51,450	30,390
BD215	7		Polished White	54,950	32,390
BD275	9		Polished Ebony	104,995	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 195.

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 195.

Model	Feet	Inches	Description	MSRP*	SMP*
BLÜTHNER					
Prices do not include bench.					
Verticals					
D		45	Satin and Polished Ebony	27,361	25,446
D		45	Satin and Polished White	28,593	26,591
C		46	Satin and Polished Ebony	28,927	26,902
C		46	Satin and Polished Walnut	30,601	28,459
C		46	Satin and Polished Mahogany	30,305	28,184
C		46	Satin and Polished Cherry	30,458	28,326
C		46	Satin and Polished White	30,374	28,248
C		46	Satin and Polished Bubinga/Yew/Rosewood/Macassar	32,296	30,035
C		46	Saxony Polished Pyramid Mahogany	37,605	34,973
C		46	Polished Burl Walnut/Camphor	37,969	35,311
A		49	Satin and Polished Ebony	36,847	34,268
A		49	Satin and Polished Walnut	38,974	36,246
A		49	Satin and Polished Mahogany	38,605	35,903
A		49	Satin and Polished Cherry	38,790	36,075
A		49	Satin and Polished White	38,686	35,978
A		49	Satin and Polished Bubinga/Yew/Rosewood/Macassar	41,132	38,253
A		49	Saxony Polished Pyramid Mahogany	47,894	44,541
A		49	Polished Burl Walnut/Camphor	48,359	44,974
B		52	Satin and Polished Ebony	42,066	39,121
B		52	Satin and Polished Walnut	44,499	41,384
B		52	Satin and Polished Mahogany	44,079	40,993
B		52	Satin and Polished Cherry	44,286	41,186
B		52	Satin and Polished White	44,170	41,078
B		52	Satin and Polished Bubinga/Yew/Rosewood/Macassar	46,961	43,674
B		52	Saxony Polished Pyramid Mahogany	54,689	50,861
B		52	Polished Burl Walnut/Camphor	55,211	51,346
Verticals			Sostenuto pedal, add'l	2,480	2,306
Grands					
11	5	1	Satin and Polished Ebony	74,604	69,382
11	5	1	Satin and Polished Walnut	78,916	73,392
11	5	1	Satin and Polished Mahogany	78,165	72,693
11	5	1	Satin and Polished Cherry	78,541	73,043
11	5	1	Satin and Polished White	78,332	72,849
11	5	1	Satin and Polished Bubinga/Yew/Rosewood/Macassar	83,287	77,457
11	5	1	Saxony Polished Pyramid Mahogany	96,983	90,194
11	5	1	Polished Burl Walnut/Camphor	97,915	91,061
11	5	1	"President" Polished Ebony	82,063	76,319
11	5	1	"President" Polished Mahogany	85,348	79,374
11	5	1	"President" Polished Walnut	86,163	80,132
11	5	1	"President" Polished Bubinga	87,026	80,934
11	5	1	Louis XVI Satin and Polished Ebony	85,783	79,778
11	5	1	Louis XVI Satin and Polished Mahogany	90,083	83,777
11	5	1	Louis XVI Satin and Polished Walnut	89,224	82,978
11	5	1	"Nicolas II" Satin Walnut with Burl Inlay	100,714	93,664
11	5	1	Louis XIV Rococo Satin White with Gold	108,179	100,606
11	5	1	"Alexandra" Polished Ebony	83,554	77,705
11	5	1	"Alexandra" Polished Mahogany	87,733	81,592
11	5	1	"Alexandra" Polished Walnut	86,897	80,814
11	5	1	Julius Blüthner Edition	100,714	93,664
10	5	5	Satin and Polished Ebony	86,002	79,982
10	5	5	Satin and Polished Walnut	90,975	84,607
10	5	5	Satin and Polished Mahogany	90,106	83,799
10	5	5	Satin and Polished Cherry	90,542	84,204
10	5	5	Satin and Polished White	90,301	83,980
10	5	5	Satin and Polished Bubinga/Yew/Rosewood/Macassar	96,010	89,289

*See pricing explanation on page 195.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
BLÜTHNER (continued)					
10	5	5	Saxony Polished Pyramid Mahogany	107,870	100,319
10	5	5	Polished Burl Walnut/Camphor	109,257	101,609
10	5	5	"President" Polished Ebony	94,601	87,979
10	5	5	"President" Polished Mahogany	98,385	91,498
10	5	5	"President" Polished Walnut	99,333	92,380
10	5	5	"President" Polished Bubinga	104,059	96,775
10	5	5	"Senator" French Satin Walnut with Leather	103,200	95,976
10	5	5	"Senator" Jacaranda Satin Rosewood w/Leather	110,083	102,377
10	5	5	Louis XVI Satin and Polished Ebony	98,901	91,978
10	5	5	Louis XVI Satin and Polished Mahogany	103,847	96,578
10	5	5	Louis XVI Satin and Polished Walnut	102,859	95,659
10	5	5	"Kaiser Wilhelm II" Polished Ebony	99,763	92,780
10	5	5	"Kaiser Wilhelm II" Polished Mahogany	103,753	96,490
10	5	5	"Kaiser Wilhelm II" Polished Walnut	104,751	97,418
10	5	5	"Kaiser Wilhelm II" Polished Cherry	104,249	96,952
10	5	5	"Ambassador" Satin East Indian Rosewood	116,099	107,972
10	5	5	"Ambassador" Satin Walnut	107,500	99,975
10	5	5	"Nicolas II" Satin Walnut with Burl Inlay	116,099	107,972
10	5	5	Louis XIV Rococo Satin White with Gold	124,707	115,978
10	5	5	"Alexandra" Polished Ebony	96,319	89,577
10	5	5	"Alexandra" Polished Mahogany	101,137	94,057
10	5	5	"Alexandra" Polished Walnut	100,173	93,161
10	5	5	Julius Blüthner Edition	110,952	103,185
6	6	3	Satin and Polished Ebony	93,799	87,233
6	6	3	Satin and Polished Walnut	99,225	92,279
6	6	3	Satin and Polished Mahogany	98,279	91,399
6	6	3	Satin and Polished Cherry	98,757	91,844
6	6	3	Satin and Polished White	98,490	91,596
6	6	3	Satin and Polished Bubinga/Yew/Rosewood/Macassar	104,721	97,391
6	6	3	Saxony Polished Pyramid Mahogany	118,657	110,351
6	6	3	Polished Burl Walnut/Camphor	120,044	111,641
6	6	3	"President" Polished Ebony	103,181	95,958
6	6	3	"President" Polished Mahogany	107,307	99,796
6	6	3	"President" Polished Walnut	108,332	100,749
6	6	3	"President" Polished Bubinga	113,495	105,550
6	6	3	"Senator" French Satin Walnut with Leather	112,555	104,676
6	6	3	"Senator" Jacaranda Satin Rosewood w/Leather	120,066	111,661
6	6	3	Louis XVI Satin and Polished Ebony	107,869	100,318
6	6	3	Louis XVI Satin and Polished Mahogany	113,265	105,336
6	6	3	Louis XVI Satin and Polished Walnut	112,184	104,331
6	6	3	"Kaiser Wilhelm II" Polished Ebony	108,810	101,193
6	6	3	"Kaiser Wilhelm II" Polished Mahogany	113,157	105,236
6	6	3	"Kaiser Wilhelm II" Polished Walnut	114,250	106,253
6	6	3	"Kaiser Wilhelm II" Polished Cherry	113,707	105,748
6	6	3	"Ambassador" Satin East Indian Rosewood	126,631	117,767
6	6	3	"Ambassador" Satin Walnut	117,248	109,041
6	6	3	"Nicolas II" Satin Walnut with Burl Inlay	126,631	117,767
6	6	3	Louis XIV Rococo Satin White with Gold	136,010	126,489
6	6	3	"Alexandra" Polished Ebony	105,054	97,700
6	6	3	"Alexandra" Polished Mahogany	110,311	102,589
6	6	3	"Alexandra" Polished Walnut	109,257	101,609
6	6	3	Julius Blüthner Edition	121,739	113,217
6	6	3	Jubilee Edition Plate, add'l	6,210	5,775
4	6	10	Satin and Polished Ebony	111,249	103,462
4	6	10	Satin and Polished Walnut	117,680	109,442
4	6	10	Satin and Polished Mahogany	116,562	108,403
4	6	10	Satin and Polished Cherry	117,121	108,923
4	6	10	Satin and Polished White	116,808	108,631

*See pricing explanation on page 195.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
BLÜTHNER (continued)					
4	6	10	Satin and Polished Bubinga/Yew/Rosewood/Macassar	124,202	115,508
4	6	10	Saxony Polished Pyramid Mahogany	139,060	129,326
4	6	10	Polished Burl Walnut/Camphor	140,231	130,415
4	6	10	"President" Polished Ebony	122,375	113,809
4	6	10	"President" Polished Mahogany	127,272	118,363
4	6	10	"President" Polished Walnut	128,494	119,499
4	6	10	"President" Polished Bubinga	134,613	125,190
4	6	10	"Senator" French Satin Walnut with Leather	133,501	124,156
4	6	10	"Senator" Jacaranda Satin Rosewood w/Leather	142,404	132,436
4	6	10	Louis XVI Satin and Polished Ebony	127,942	118,986
4	6	10	Louis XVI Satin and Polished Mahogany	134,339	124,935
4	6	10	Louis XVI Satin and Polished Walnut	133,050	123,737
4	6	10	"Kaiser Wilhelm II" Polished Ebony	129,050	120,017
4	6	10	"Kaiser Wilhelm II" Polished Mahogany	134,219	124,824
4	6	10	"Kaiser Wilhelm II" Polished Walnut	135,507	126,022
4	6	10	"Kaiser Wilhelm II" Polished Cherry	134,860	125,420
4	6	10	"Ambassador" Satin East Indian Rosewood	146,395	136,147
4	6	10	"Ambassador" Satin Walnut	141,772	131,848
4	6	10	"Nicolas II" Satin Walnut with Burl Inlay	150,186	139,673
4	6	10	Louis XIV Rococo Satin White with Gold	161,317	150,025
4	6	10	"Alexandra" Polished Ebony	124,602	115,880
4	6	10	"Alexandra" Polished Mahogany	130,832	121,674
4	6	10	"Alexandra" Polished Walnut	129,584	120,513
4	6	10	Julius Blüthner Edition	143,313	133,281
2	7	8	Satin and Polished Ebony	124,340	115,636
2	7	8	Satin and Polished Walnut	131,538	122,330
2	7	8	Satin and Polished Mahogany	130,278	121,159
2	7	8	Satin and Polished Cherry	130,908	121,744
2	7	8	Satin and Polished White	131,538	122,330
2	7	8	Satin and Polished Bubinga/Yew/Rosewood/Macassar	138,812	129,095
2	7	8	Saxony Polished Pyramid Mahogany	157,808	146,761
2	7	8	Polished Burl Walnut/Camphor	159,215	148,070
2	7	8	"President" Polished Ebony	138,812	129,095
2	7	8	"President" Polished Mahogany	144,369	134,263
2	7	8	"President" Polished Walnut	145,760	135,557
2	7	8	"President" Polished Bubinga	152,695	142,006
2	7	8	"Senator" French Satin Walnut with Leather	151,435	140,835
2	7	8	"Senator" Jacaranda Satin Rosewood w/Leather	161,528	150,221
2	7	8	Louis XVI Satin and Polished Ebony	145,122	134,963
2	7	8	Louis XVI Satin and Polished Mahogany	152,381	141,714
2	7	8	Louis XVI Satin and Polished Walnut	150,926	140,361
2	7	8	"Kaiser Wilhelm II" Polished Ebony	146,389	136,142
2	7	8	"Kaiser Wilhelm II" Polished Mahogany	152,246	141,589
2	7	8	"Kaiser Wilhelm II" Polished Walnut	153,705	142,946
2	7	8	"Kaiser Wilhelm II" Polished Cherry	152,977	142,269
2	7	8	"Ambassador" Satin East Indian Rosewood	164,079	152,593
2	7	8	"Ambassador" Satin Walnut	159,528	148,361
2	7	8	"Nicolas II" Satin Walnut with Burl Inlay	170,365	158,439
2	7	8	Louis XIV Rococo Satin White with Gold	182,987	170,178
2	7	8	"Alexandra" Polished Ebony	141,336	131,442
2	7	8	"Alexandra" Polished Mahogany	148,405	138,017
2	7	8	"Alexandra" Polished Walnut	146,998	136,708
2	7	8	Julius Blüthner Edition	162,656	151,270
2	7	8	"Queen Victoria" JB Edition Polished Rosewood	196,732	182,961
1	9	2	Satin and Polished Ebony	160,514	149,278
1	9	2	Satin and Polished Walnut	168,540	156,742
1	9	2	Satin and Polished Mahogany	166,936	155,250
1	9	2	Satin and Polished Cherry	167,740	155,998

*See pricing explanation on page 195.

Model	Feet	Inches	Description	MSRP*	SMP*
BLÜTHNER (continued)					
1	9	2	Satin and Polished White	168,540	156,742
1	9	2	Satin and Polished Bubinga/Yew/Rosewood/Macassar	176,566	164,206
1	9	2	Saxony Polished Pyramid Mahogany	208,664	194,058
1	9	2	Polished Burl Walnut/Camphor	210,672	195,925
1	9	2	"President" Polished Ebony	179,001	166,471
1	9	2	"President" Polished Mahogany	186,158	173,127
1	9	2	"President" Polished Walnut	187,949	174,793
1	9	2	"President" Polished Bubinga	196,897	183,114
1	9	2	"Kaiser Wilhelm II" Polished Ebony	188,760	175,547
1	9	2	"Kaiser Wilhelm II" Polished Mahogany	196,315	182,573
1	9	2	"Kaiser Wilhelm II" Polished Walnut	198,200	184,326
1	9	2	"Kaiser Wilhelm II" Polished Cherry	197,265	183,456
1	9	2	"Ambassador" Satin East Indian Rosewood	219,687	204,309
1	9	2	"Ambassador" Satin Walnut	203,409	189,170
1	9	2	"Nicolas II" Satin Walnut with Burl Inlay	219,687	204,309
1	9	2	Julius Blüthner Edition	216,698	201,529
1	9	2	"Queen Victoria" JB Edition Polished Rosewood	245,306	228,135

BOHEMIA

Verticals

R114	44.8		Polished Ebony		12,900
R114	44.8		Polished Mahogany/Walnut		13,840
R121	47.7		Polished Ebony		14,160
R121	47.7		Polished Mahogany/Walnut		14,940
125A	49		Professional Polished Ebony		12,040
R126	49.6		Polished Ebony		14,900
R132	52		Polished Ebony		16,900

Grands

BT160	5	3	Polished Ebony		34,900
BT160	5	3	Polished Mahogany		38,600
BT175	5	9	Polished Ebony		38,600
BT175	5	9	Polished Mahogany		41,760
BT185	6	1	Polished Ebony		40,900
225R	7	4	Smetana Polished Ebony (Renner action)		53,520

BÖSENDORFER

Verticals

130	52		Satin and Polished Ebony	57,499	51,749
130	52		Satin and Polished White, other colors	62,499	56,249
130	52		Polished, Satin, Open-pore: Walnut, Cherry, Mahogany, Pomele, Bubinga, Wenge	63,899	57,509
130	52		Polished, Satin, Open-pore: Pyramid Mahogany, Amboyna, Rio Rosewood, Burl Walnut, Birdseye Maple, Yew, Macassar	66,899	60,209

Grands

170CS	5	8	"Conservatory" Satin Ebony	86,999	78,299
170	5	8	Satin and Polished Ebony	97,999	88,199
170	5	8	Satin and Polished White, other colors	108,999	98,099
170	5	8	Polished, Satin, Open-pore: Walnut, Cherry, Mahogany, Pomele, Bubinga, Wenge	111,299	100,169
170	5	8	Polished, Satin, Open-pore: Pyramid Mahogany, Amboyna, Rio Rosewood, Burl Walnut, Birdseye Maple, Yew, Macassar	114,999	103,499
170	5	8	"Johann Strauss" Satin and Polished Ebony	110,408	99,367
170	5	8	"Johann Strauss," other finish	130,836	117,752
170	5	8	"Franz Schubert" Satin and Polished Ebony	110,408	99,367

*See pricing explanation on page 195.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
BÖSENDORFER (continued)					
170	5	8	"Franz Schubert," other finish	130,836	117,752
170	5	8	"Vienna"	162,784	146,506
170	5	8	"Senator"	122,563	110,307
170	5	8	"Chopin"	149,411	134,470
170	5	8	"Liszt"	130,836	117,752
170	5	8	"Yacht"	134,819	121,337
170	5	8	"Artisan," Satin and Polished	188,951	170,056
170	5	8	"Edge"	109,165	98,249
170	5	8	"Baroque"	139,926	125,933
170	5	8	Louis XVI	139,926	125,933
185	6	1	"Conservatory" Satin Ebony	87,999	79,199
170	5	8	"Franz Schubert" Satin and Polished Ebony	110,408	99,367
170	5	8	"Franz Schubert," other finish	130,836	117,752
170	5	8	"Vienna"	162,784	146,506
170	5	8	"Senator"	122,563	110,307
170	5	8	"Chopin"	149,411	134,470
170	5	8	"Liszt"	130,836	117,752
170	5	8	"Yacht"	134,819	121,337
170	5	8	"Artisan," Satin and Polished	188,951	170,056
170	5	8	"Edge"	109,165	98,249
170	5	8	"Baroque"	139,926	125,933
170	5	8	Louis XVI	139,926	125,933
185	6	1	"Conservatory" Satin Ebony	87,999	79,199
185	6	1	Satin and Polished Ebony	99,999	89,999
185	6	1	Satin and Polished White, other colors	111,499	100,349
185	6	1	Polished, Satin, Open-pore: Walnut, Cherry, Mahogany, Pomele, Bubinga, Wenge	114,499	103,049
185	6	1	Satin and Polished Ebony	99,999	89,999
185	6	1	Satin and Polished White, other colors	111,499	100,349
185	6	1	Polished, Satin, Open-pore: Walnut, Cherry, Mahogany, Pomele, Bubinga, Wenge	114,499	103,049
185	6	1	Polished, Satin, Open-pore: Pyramid Mahogany, Amboyna, Rio Rosewood, Burl Walnut, Birdseye Maple, Yew, Macassar	119,999	107,999
185	6	1	"Johann Strauss" Satin and Polished Ebony	113,228	101,905
185	6	1	"Johann Strauss," other finish	134,177	120,759
185	6	1	"Franz Schubert" Satin and Polished Ebony	113,228	101,905
185	6	1	"Franz Schubert," other finish	134,177	120,759
185	6	1	"Vienna"	162,800	146,520
185	6	1	"Senator"	125,693	113,124
185	6	1	"Chopin"	152,986	137,687
185	6	1	"Porsche Design," Satin and Polished Ebony	154,201	138,781
185	6	1	"Porsche Design," Polished Colors	164,865	148,379
185	6	1	"Liszt"	134,177	120,759
185	6	1	"Yacht"	138,262	124,436
185	6	1	"Artisan," Satin and Polished	193,776	174,398
185	6	1	"Edge"	111,953	100,758
185	6	1	"Baroque"	143,499	129,149
185	6	1	Louis XVI	143,499	129,149
200CS	6	7	"Conservatory" Satin Ebony	92,999	83,699
200DE3	6	7	"Conservatory" Satin Ebony with Disklavier	114,998	104,698
200DE3	6	7	Polished Ebony with Disklavier	132,998	124,998
200	6	7	Satin and Polished Ebony	112,999	101,699
200	6	7	Satin and Polished White, other colors	122,999	110,699
200	6	7	Polished, Satin, Open-pore: Walnut, Cherry, Mahogany, Pomele, Bubinga, Wenge	125,999	113,399
200	6	7	Polished, Satin, Open-pore: Pyramid Mahogany, Amboyna, Rio Rosewood, Burl Walnut, Birdseye Maple, Yew, Macassar	129,999	116,999
200	6	7	"Johann Strauss" Satin and Polished Ebony	124,876	112,388

*See pricing explanation on page 195.

<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," other finish	147,980	133,182
200	6	7	"Franz Schubert" Satin and Polished Ebony	124,876	112,388
200	6	7	"Franz Schubert," other finish	147,980	133,182
200	6	7	"Vienna"	169,295	152,366
200	6	7	"Senator"	138,623	124,761
200	6	7	"Chopin"	166,012	149,411
200	6	7	"Liszt"	147,980	133,182
200	6	7	"Yacht"	152,485	137,237
200	6	7	"Artisan," Satin and Polished	213,710	192,339
200	6	7	"Edge"	123,469	111,122
200	6	7	"Baroque"	158,261	142,435
200	6	7	Louis XVI	158,261	142,435
200	6	7	Liszt Anniversary	133,617	117,584
214CS	7		"Conservatory" Satin Ebony	99,999	89,999
214	7		Satin and Polished Ebony	133,999	120,599
214	7		Satin and Polished White, other colors	142,799	128,519
214	7		Polished, Satin, Open-pore: Walnut, Cherry, Mahogany, Pomele, Bubinga, Wenge	146,899	132,209
214	7		Polished, Satin, Open-pore: Pyramid Mahogany, Amboyna, Rio Rosewood, Burl Walnut, Birdseye Maple, Yew, Macassar	152,999	137,699
214	7		"Johann Strauss" Satin and Polished Ebony	145,463	130,917
214	7		"Johann Strauss," other finish	172,376	155,138
214	7		"Franz Schubert" Satin and Polished Ebony	145,463	130,917
214	7		"Franz Schubert," other finish	172,376	155,138
214	7		"Vienna"	189,734	170,761
214	7		"Senator"	161,476	145,328
214	7		"Chopin"	188,254	169,429
214	7		"Porsche Design," Satin and Polished Ebony	188,389	169,550
214	7		"Porsche Design," Polished Colors	197,808	178,027
214	7		"Liszt"	172,376	155,138
214	7		"Yacht"	177,624	159,862
214	7		"Artisan," Satin and Polished	248,942	224,048
214	7		"Edge"	143,824	129,442
214	7		"Baroque"	184,352	165,917
214	7		Louis XVI	184,352	165,917
225	7	4	Satin and Polished Ebony	139,999	125,999
225	7	4	Satin and Polished White, other colors	149,999	134,999
225	7	4	Polished, Satin, Open-pore: Walnut, Cherry, Mahogany, Pomele, Bubinga, Wenge	154,999	139,499
225	7	4	Polished, Satin, Open-pore: Pyramid Mahogany, Amboyna, Rio Rosewood, Burl Walnut, Birdseye Maple, Yew, Macassar	159,999	143,999
225	7	4	"Johann Strauss" Satin and Polished Ebony	152,506	137,255
225	7	4	"Johann Strauss," other finish	180,722	162,650
225	7	4	"Franz Schubert" Satin and Polished Ebony	152,506	137,255
225	7	4	"Franz Schubert," other finish	180,722	162,650
225	7	4	"Vienna"	198,921	179,029
225	7	4	"Senator"	169,294	152,365
225	7	4	"Chopin"	197,369	177,632
225	7	4	"Liszt"	180,722	162,650
225	7	4	"Yacht"	186,224	167,602
225	7	4	"Artisan," Satin and Polished	260,995	234,896
225	7	4	"Edge"	150,788	135,709
225	7	4	"Baroque"	193,278	173,950
225	7	4	Louis XVI	193,278	173,950
280	9	2	Satin and Polished Ebony	179,999	161,999
280	9	2	Satin and Polished White, other colors	194,999	175,499
280	9	2	Polished, Satin, Open-pore: Walnut, Cherry, Mahogany, Pomele, Bubinga, Wenge	199,999	179,999

*See pricing explanation on page 195.

Model	Feet	Inches	Description	MSRP*	SMP*
BÖSENDORFER (continued)					
280	9	2	Polished, Satin, Open-pore: Pyramid Mahogany, Amboyna, Rio Rosewood, Burl Walnut, Birdseye Maple, Yew, Macassar	208,999	188,099
280	9	2	“Johann Strauss” Satin and Polished Ebony	197,743	177,969
280	9	2	“Johann Strauss,” other finish	234,328	210,895
280	9	2	“Franz Schubert” Satin and Polished Ebony	197,743	177,969
280	9	2	“Franz Schubert,” other finish	234,328	210,895
280	9	2	“Vienna”	257,926	232,133
280	9	2	“Senator”	219,511	197,560
280	9	2	“Chopin”	255,914	230,323
280	9	2	“Porsche Design,” Satin and Polished	256,097	230,487
280	9	2	“Porsche Design,” Polished Colors	268,901	242,011
280	9	2	“Liszt”	234,328	210,895
280	9	2	“Yacht”	241,462	217,316
280	9	2	“Artisan,” Satin and Polished	290,069	261,062
280	9	2	“Baroque”	250,609	225,548
280	9	2	Louis XVI	250,609	225,548
290	9	6	Satin and Polished Ebony	199,999	179,999
290	9	6	Satin and Polished White, other colors	221,599	199,439
290	9	6	Polished, Satin, Open-pore: Walnut, Cherry, Mahogany, Pomele, Bubinga, Wenge	227,499	204,749
290	9	6	Polished, Satin, Open-pore: Pyramid Mahogany, Amboyna, Rio Rosewood, Burl Walnut, Birdseye Maple, Yew, Macassar	236,999	213,299
290	9	6	“Johann Strauss” Satin and Polished Ebony	224,831	202,348
290	9	6	“Johann Strauss,” other finish	266,428	239,785
290	9	6	“Franz Schubert” Satin and Polished Ebony	224,831	202,348
290	9	6	“Franz Schubert,” other finish	266,428	239,785
290	9	6	“Vienna”	293,258	263,932
290	9	6	“Senator”	249,581	224,623
290	9	6	“Chopin”	290,970	261,873
290	9	6	“Liszt”	266,428	239,785
290	9	6	“Yacht”	274,540	247,086
290	9	6	“Artisan,” Satin and Polished	306,320	275,688
290	9	6	“Baroque”	284,939	256,445
290	9	6	Louis XVI	284,939	256,445
170-280			“CEUS” Computer Grand, add'l	68,404	61,564
290			“CEUS” Computer Grand, add'l	75,400	67,860

BOSTON

Boston MSRP is the price at the New York retail store.

Verticals

UP-118E PE	46		Satin and Polished Ebony	11,100	11,100
UP-118E PE	46		Polished Mahogany	12,800	12,800
UP-118E PE	46		Satin and Polished Walnut	12,800	12,800
UP-118S PE	46		Satin Black Oak	7,100	7,100
UP-118S PE	46		Satin Mahogany	8,600	8,600
UP-126E PE	50		Polished Ebony	13,300	13,300
UP-126E PE	50		Polished Mahogany	15,300	15,300
UP-132E PE	52		Polished Ebony	14,700	14,700

Grands

GP-156 PE	5	1	Satin and Polished Ebony	20,100	20,100
GP-163 PE	5	4	Satin and Polished Ebony	24,600	24,600
GP-163 PE	5	4	Satin and Polished Mahogany	26,900	26,900
GP-163 PE	5	4	Satin and Polished Walnut	27,300	27,300
GP-163 PE	5	4	Polished White	25,300	25,300
GP-178 PE	5	10	Satin and Polished Ebony	28,800	28,800
GP-178 PE	5	10	Satin and Polished Mahogany	31,100	31,100
GP-178 PE	5	10	Satin and Polished Walnut	31,500	31,500

*See pricing explanation on page 195.

Model	Feet	Inches	Description	MSRP*	SMP*
BOSTON (continued)					
GP-193 PE	6	4	Satin and Polished Ebony	37,400	37,400
GP-215 PE	7	1	Satin and Polished Ebony	49,100	49,100

BRODMANN

Verticals

PE 116		45	Polished Ebony	7,470	5,980
CE 118		46	Polished Ebony	6,590	5,390
PE 121		47	Polished Ebony	8,390	6,590
PE 121		47	Polished Mahogany/White	8,990	6,990
PE 123C		48	Italian Provincial Satin Walnut	8,990	6,990
PE 123M		48	French Provincial Polished Mahogany	8,990	6,990
PE 123W		48	Polished Walnut	8,990	6,990
PE 125		49	Polished Ebony	8,990	6,990
PE 125		49	Polished Mahogany/White	9,590	7,390
PE 130		51	Polished Ebony	12,590	9,390
AS 132		52	Polished Ebony	17,990	12,990

Grands

CE 148	4	10	Polished Ebony	15,990	11,660
PE 150	4	11	Polished Ebony	19,490	13,990
PE 162	5	4	Polished Ebony	22,190	15,790
PE 162	5	4	Polished Mahogany/White	23,390	16,590
PE 162	5	4	Two Tone	22,790	16,190
CE 175	5	9	Polished Ebony	18,590	13,390
PE 187	6	2	Polished Ebony	25,900	18,267
PE 187	6	2	Polished Mahogany/White	26,990	18,990
PE 187	6	2	Strauss	26,990	18,990
AS 187	6	2	Polished Ebony	49,990	34,327
PE 212	7		Polished Ebony	34,990	24,327
AS 212	7		Polished Ebony	59,990	40,990
PE 228	7	5	Polished Ebony	42,490	29,327
PE 228R	7	5	Polished Ebony w/Renner action	52,490	35,990
AS 228	7	5	Polished Ebony	69,990	47,660
AS 275	9		Polished Ebony	99,990	67,660

Cable, Hobart M. — see Sejung

CABLE-NELSON

Verticals

CN 116		45	Polished Ebony	3,999	3,999
CN 216		45	Satin Walnut	3,999	3,999

Grands

CN 151		5	Polished Ebony	9,399	9,399	
CN 161		5	3	Polished Ebony	13,399	13,399

Chase, A.B. — see Everett

CRISTOFORI

Verticals

CRV425		42.5	Continental Satin Ebony	3,569	3,569
CRV425		42.5	Continental Polished Ebony	3,569	3,569
CRV425		42.5	Continental Polished Mahogany	3,779	3,779

*See pricing explanation on page 195.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
CRISTOFORI (continued)					
CRV430		43	French Provincial Satin Cherry	4,715	4,715
CRV430		43	Mediterranean Satin Oak	4,409	4,409
CRV430		43	Satin Cherry	4,610	4,610
CRV450S		45	Satin Ebony	5,765	5,093
CRV450S		45	Satin Walnut	5,765	4,988
CRV450S		45	Satin Oak	5,765	5,093
CRV480		48	Satin Ebony	6,605	6,248
CRV480		48	Polished Ebony	6,605	6,038
CRV480		48	Polished Mahogany	6,815	6,248
Grands					
CRG48	4	8	Polished Ebony	7,865	7,865
CRG48	4	8	Polished Mahogany	8,390	8,390
CRG410	4	10	Satin Ebony	9,965	9,083
CRG410	4	10	Polished Ebony	9,965	8,768
CRG410	4	10	Polished Mahogany	10,490	9,188
CRG410	4	10	French Provincial Satin Cherry	11,015	9,608
CRG53	5	3	Satin Ebony	12,590	10,973
CRG53	5	3	Polished Ebony	12,590	10,658
CRG53	5	3	Satin Walnut/Mahogany	13,115	11,078
CRG53	5	3	Polished Walnut/Mahogany	13,115	11,078
CRG53	5	3	French Provincial Satin Cherry	14,165	11,498
CRG53	5	3	Polished Bubinga	14,375	11,498
CRG53	5	3	Polished White	13,115	11,078
CRG57	5	7	Satin Ebony	15,215	11,813
CRG57	5	7	Polished Ebony	15,215	11,498
CRG57	5	7	Satin Walnut/Mahogany	15,740	11,918
CRG57	5	7	Polished Walnut/Mahogany	15,740	11,918
CRG57	5	7	French Provincial Satin Cherry	16,790	12,338
CRG57	5	7	Polished Bubinga	17,105	12,338
CRG57	5	7	Polished White	15,740	11,918
CRG62	6	2	Satin Ebony	17,315	13,283
CRG62	6	2	Polished Ebony	17,315	12,968
CRG62	6	2	Polished Mahogany	18,155	13,388

CUNNINGHAM

Verticals

Studio		48	Polished Ebony	4,890	4,890
Studio		48	Polished Mahogany	5,490	5,490
Full Upright		50	Polished Ebony	6,990	6,720
Full Upright		50	Polished Mahogany	7,390	7,080

Grands

Baby Grand	5		Polished Ebony	11,890	11,890
Baby Grand	5		Polished Mahogany	12,590	12,360
Studio Grand	5	4	Polished Ebony	13,290	13,290
Studio Grand	5	4	Polished Mahogany	13,990	13,980
Parlour Grand	5	10	Polished Ebony	17,490	16,742
Parlour Grand	5	10	Polished Mahogany	18,190	17,420
Chamber Grand	6	6	Polished Ebony	30,790	26,180
Concert Grand	9		Polished Ebony	59,990	50,440

Disklavier — see Yamaha; see also Bösendorfer

*See pricing explanation on page 195.

Model	Feet	Inches	Description	MSRP*	SMP*
EDELWEISS					
Verticals					
UT-49		49	"Transparent"	17,250	17,250
Grands					
G50	4	2	"Butterfly" Polished Ebony	12,950	12,950
G50	4	2	"Half Moon" Polished Ebony	12,950	12,950
G50	4	2	"Butterfly" Polished White	13,400	13,400
GT-66	5	6	"Transparent"	35,995	35,995

ESSEX

Essex MSRP is the price at the New York retail store.

Verticals

EUP-108C		42	Continental Polished Ebony	4,590	4,590
EUP-111E		44	Polished Ebony	5,390	5,390
EUP-111E		44	Polished Sapele Mahogany	5,790	5,760
EUP-116E		45	Polished Ebony	6,290	6,080
EUP-116E		45	Polished Walnut/Sapele Mahogany	6,590	6,180
EUP-116E		45	Polished White	6,790	6,320
EUP-116FC		45	French Country Cherry	6,390	6,180
EUP-116CT		45	Contemporary Sapele Mahogany	6,790	6,420
EUP-116IP		45	Italian Provincial Walnut	6,390	6,390
EUP-116QA		45	Queen Anne Cherry	6,390	6,390
EUP-116ST		45	Sheraton Traditional Sapele Mahogany	6,390	6,390
EUP-116EC		45	English Country Walnut	6,790	6,640
EUP-116ET		45	English Traditional Sapele Mahogany	6,790	6,640
EUP-116FF		45	Formal French Brown Cherry	6,790	6,640
EUP-116FF		45	Formal French Red Cherry	6,790	6,640
EUP-123E		48	Polished Ebony	6,790	6,540
EUP-123E		48	Satin Sapele Mahogany	7,190	6,760
EUP-123E		48	Polished Sapele Mahogany	7,190	6,640
EUP-123E		48	Satin Walnut	7,190	6,640
EUP-123CL		48	French Satin Sapele Mahogany	7,790	7,220
EUP-123FL		48	Empire Satin Walnut	7,790	7,220
EUP-123FL		48	Empire Satin Sapele Mahogany	7,790	7,220
EUP-123S		48	Institutional Studio Polished Ebony	6,290	6,290

Grands

EGP-155	5	1	Satin and Polished Ebony	12,400	12,400
EGP-155	5	1	Polished and Satin Lustre Sapele Mahogany	13,200	13,200
EGP-155	5	1	Polished Kewazinga Bubinga	14,700	14,160
EGP-155	5	1	Polished White	15,700	14,160
EGP-155F	5	1	French Provincial Brown Cherry	15,900	15,840
EGP-173	5	8	Satin and Polished Ebony	15,900	15,900
EGP-173	5	8	Polished Sapele Mahogany	16,800	16,800
EGP-173F	5	8	French Provincial Brown Cherry	18,500	18,500

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	36,700	36,700
L168	5	6	Satin and Polished Mahogany	39,735	39,735
L168	5	6	Satin and Polished Walnut	39,735	39,735
L168	5	6	Satin and Polished Kewazinga Bubinga	43,100	43,100
L168	5	6	"Hidden Beauty" Polished Ebony w/Bubinga	40,650	40,650
L168	5	6	Polished Pyramid Mahogany	47,700	47,700

*See pricing explanation on page 195.

Model	Feet	Inches	Description	MSRP*	SMP*
ESTONIA (continued)					
L168	5	6	Satin and Polished White	39,735	39,735
L190	6	3	Satin and Polished Ebony	44,650	44,650
L190	6	3	Satin and Polished Mahogany	48,050	48,050
L190	6	3	Polished Pyramid Mahogany	57,360	57,360
L190	6	3	Satin and Polished Walnut	48,050	48,050
L190	6	3	Polished Santos Rosewood	57,360	57,360
L190	6	3	Polished Kewazinga Bubinga	51,730	51,730
L190	6	3	Satin and Polished White	48,050	48,050
L190	6	3	"Hidden Beauty" Polished Ebony w/Bubinga	47,440	47,440
L225	7	4	Satin and Polished Ebony	66,800	66,800
L225	7	4	Satin and Polished Mahogany	71,890	71,890
L225	7	4	Polished Pyramid Mahogany	79,800	79,800
L225	7	4	Satin and Polished Walnut	71,890	71,890
L225	7	4	"Hidden Beauty" Polished Ebony w/Bubinga	70,976	70,976
L225	7	4	Satin and Polished White	71,890	71,890
L274	9		Satin and Polished Ebony	106,600	106,600
L274	9		Satin and Polished Mahogany	117,000	117,000
L274	9		Polished Pyramid Mahogany	121,000	121,000
L274	9		Satin and Polished Walnut	117,000	117,000
L274	9		Satin and Polished White	110,000	110,000

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

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	19,900	19,900
132V	52		Polished Ebony	21,900	21,900

Grands

165S	5	5	Polished Ebony w/Mahogany	17,590	17,590
185S-H	6	1	Polished Ebony w/Mahogany	20,590	20,590
185HGS-H	6	1	Polished Ebony w/Mahogany	23,590	23,590
215S-H	7	1	Polished Ebony	34,790	34,790
215HGS-H	7	1	Polished Ebony	37,790	37,790

*See pricing explanation on page 195.

Model	Feet	Inches	Description	MSRP*	SMP*
FAZIOLI					
<i>Fazioli is willing to make custom-designed cases with exotic veneers, marquetry, and other embellishments. Prices on request to Fazioli.</i>					
Grands					
F156	5	2	Satin and Polished Ebony	95,800	95,800
F183	6		Satin and Polished Ebony	106,400	106,400
F212	6	11	Satin and Polished Ebony	120,600	120,600
F228	7	6	Satin and Polished Ebony	138,400	138,400
F278	9	2	Satin and Polished Ebony	179,200	179,200
F308	10	2	Satin and Polished Ebony	196,000	196,000
F308			Fourth pedal and two lyres included in price		
All but F308			Fourth pedal, add'l	11,400	11,400

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			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
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

*See pricing explanation on page 195.

Model	Feet	Inches	Description	MSRP*	SMP*
FÖRSTER, AUGUST (continued)					
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

Studio 110	43.5		"Friedrich Grotrian" Satin Ebony	15,500	15,500
Studio 110	43.5		"Friedrich Grotrian" Polished Ebony	18,193	18,193
Cristal	44		Continental Satin Ebony	20,842	20,842
Cristal	44		Continental Polished Ebony	21,780	21,780
Cristal	44		Continental Open-pore Oak/Walnut/Beech	20,842	20,842
Cristal	44		Continental Polished Walnut/White	23,846	23,846
Studio 115	45		"Friedrich Grotrian" Satin Ebony	20,137	20,137
Canto	45		Continental Satin Ebony	23,846	23,846
Canto	45		Continental Open-pore Beech	23,846	23,846
Canto	45		Continental Polished Ebony	24,409	24,409
Carat	45.5		Polished Ebony	27,417	27,417
Carat	45.5		Open-pore Oak/Walnut	26,476	26,476
Carat	45.5		Polished Walnut/White	29,858	29,858
Compose Exclusif	46.5		Polished Ebony	33,802	33,802
College	48		Satin Ebony	30,169	30,169
College	48		Polished Ebony	31,484	31,484
College	48		Open-pore Beech	30,169	30,169
Classic	49		Polished Ebony	36,932	36,932
Classic	49		Open-pore Oak/Walnut	35,428	35,428
Classic	49		Polished Walnut/White	40,314	40,314
Concertino	52		Polished Ebony	44,960	44,911
Uprights			Sostenuto pedal, add'l	1,600	1,382

Grands

Chambre	5	5	Satin Ebony	66,465	65,000
Chambre	5	5	Polished Ebony	73,603	71,336
Chambre	5	5	Open-pore Oak/Walnut	68,717	66,999
Chambre	5	5	Polished Walnut/White	80,554	77,507
Cabinet	6	3	Satin Ebony	77,547	74,837
Cabinet	6	3	Polished Ebony	86,003	82,343
Cabinet	6	3	Open-pore Oak/Walnut	80,554	77,507
Cabinet	6	3	Polished Walnut/White	94,269	89,681
Charis	6	10	Satin Ebony	88,464	84,527
Charis	6	10	Polished Ebony	97,933	92,933
Concert	7	4	Satin Ebony	106,405	100,453
Concert	7	4	Polished Ebony	119,136	111,755
Concert Royal	9	1	Polished Ebony	147,728	137,136
All models			Chippendale/Empire, add'l	3,700	3,234
All models			CS Style, add'l	5,650	4,998
All models			Rococo, add'l	14,250	12,642

HAESSLER

Prices do not include bench.

Verticals

115 K	45		Satin and Polished Ebony	18,755	18,755
115 K	45		Satin Beech/Ash/Waxed Alder	18,447	18,447
115 K	45		Satin and Polished White	19,470	19,470
118 K	47		Satin and Polished Ebony	20,570	20,570

*See pricing explanation on page 195.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
HAESSLER (continued)					
118 K		47	Satin Ebony with Walnut Accent	22,143	22,143
118 K		47	Satin and Polished Mahogany	21,703	21,703
118 K		47	Satin and Polished Walnut	21,176	21,176
118 K		47	Satin and Polished Cherry	23,265	23,265
118 K		47	Satin and Polished Cherry with Yew Inlay	23,265	23,265
118 K		47	Satin Oak	19,679	19,679
118 K		47	Polished Bubinga	23,518	23,518
118 K		47	Satin and Polished White	21,450	21,450
118 KM		47	Satin and Polished Ebony	21,615	21,615
118 KM		47	Satin and Polished White	22,418	22,418
118 CH		47	Chippendale Satin and Polished Mahogany	23,199	23,199
118 CH		47	Chippendale Satin and Polished Walnut	23,199	23,199
124 K		49	Satin and Polished Ebony	23,552	23,552
124 K		49	Satin Ebony with Walnut Accent	22,990	22,990
124 K		49	Satin and Polished Mahogany	23,507	23,507
124 K		49	Satin and Polished Walnut	23,507	23,507
124 K		49	Satin and Polished Cherry	24,079	24,079
124 K		49	Satin and Polished Cherry with Yew Inlay	25,179	25,179
124 K		49	Satin and Polished White	22,682	22,682
124 KM		49	Satin and Polished Ebony	22,363	22,363
124 KM		49	Satin and Polished White	23,166	23,166
132		52	Satin and Polished Ebony	29,722	29,722
Grands					
175	5	8	Satin and Polished Ebony	56,629	56,629
175	5	8	Satin and Polished Mahogany	58,895	58,895
175	5	8	Satin and Polished Walnut	59,465	59,465
175	5	8	Satin and Polished Cherry	59,179	59,179
175	5	8	Polished Bubinga	62,293	62,293
175	5	8	Satin and Polished White	66,627	66,627
175	5	8	Saxony Polished Pyramid Mahogany	74,723	74,723
175	5	8	Saxony Polished Burl Walnut	75,439	75,439
175	5	8	"President" Polished Ebony	63,227	63,227
175	5	8	"President" Polished Mahogany	65,758	65,758
175	5	8	"President" Polished Walnut	66,386	66,386
175	5	8	"President" Polished Bubinga	69,553	69,553
175	5	8	Louis XV Ebony, Satin and Polished	66,099	66,099
175	5	8	Louis XV Mahogany, Satin and Polished	69,410	69,410
175	5	8	Louis XV Walnut, Satin and Polished	68,751	68,751
175	5	8	"Kaiser Wilhelm II" Polished Ebony	66,670	66,670
175	5	8	"Kaiser Wilhelm II" Polished Mahogany	69,345	69,345
175	5	8	"Kaiser Wilhelm II" Polished Walnut	70,014	70,014
175	5	8	"Kaiser Wilhelm II" Polished Cherry	69,673	69,673
175	5	8	"Ambassador" Satin East Indian Rosewood	77,595	77,595
175	5	8	"Ambassador" Satin Walnut	71,851	71,851
175	5	8	"Nicolas II" Satin Walnut w/Burl Inlay	77,593	77,593
175	5	8	Louis XIV Rococo Satin White w/Gold	83,346	83,346
175	5	8	"Classic Alexandra" Polished Ebony	64,342	64,342
175	5	8	"Classic Alexandra" Polished Mahogany	67,594	67,594
175	5	8	"Classic Alexandra" Polished Walnut	66,957	66,957
186	6	1	Satin and Polished Ebony	63,811	63,811
186	6	1	Satin and Polished Mahogany	66,363	66,363
186	6	1	Satin and Polished Walnut	67,002	67,002
186	6	1	Satin and Polished Cherry	66,681	66,681
186	6	1	Polished Bubinga	70,190	70,190
186	6	1	Satin and Polished White	67,002	67,002
186	6	1	Saxony Polished Pyramid Mahogany	84,194	84,194
186	6	1	Saxony Polished Burl Walnut	84,997	84,997

*See pricing explanation on page 195.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
HAESSLER (continued)					
186	6	1	"President" Polished Ebony	71,236	71,236
186	6	1	"President" Polished Mahogany	74,084	74,084
186	6	1	"President" Polished Walnut	74,799	74,799
186	6	1	"President" Polished Bubinga	78,352	78,352
186	6	1	Louis XV Ebony, Satin and Polished	74,470	74,470
186	6	1	Louis XV Mahogany, Satin and Polished	78,199	78,199
186	6	1	Louis XV Walnut, Satin and Polished	77,451	77,451
186	6	1	"Kaiser Wilhelm II" Polished Ebony	75,118	75,118
186	6	1	"Kaiser Wilhelm II" Polished Mahogany	78,122	78,122
186	6	1	"Kaiser Wilhelm II" Polished Walnut	78,871	78,871
186	6	1	"Kaiser Wilhelm II" Polished Cherry	78,506	78,506
186	6	1	"Ambassador" Satin East Indian Rosewood	87,427	87,427
186	6	1	"Ambassador" Satin Walnut	80,949	80,949
186	6	1	"Nicolas II" Satin Walnut w/Burl Inlay	87,427	87,427
186	6	1	Louis XIV Rococo Satin White w/Gold	93,908	93,908
186	6	1	"Classic Alexandra" Polished Ebony	72,534	72,534
186	6	1	"Classic Alexandra" Polished Mahogany	76,153	76,153
186	6	1	"Classic Alexandra" Polished Walnut	75,426	75,426

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
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

*See pricing explanation on page 195.

Model	Feet	Inches	Description	MSRP*	SMP*
HAILUN (continued)					
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.

Heritage Collection Verticals

H-C43R	43		Satin Cherry/Oak (Roung Leg)	5,775	4,300
H-C43F	43		French Provincial Satin Cherry/Oak	5,775	4,300
H-108	43		Continental Polished Ebony	4,750	3,710
H-108	43		Continental Polished Mahogany	4,950	3,810
H-116	46		Satin Ebony School Classic	5,950	4,390
H-117H	46		Polished Ebony Studio	5,250	3,990
H-118F	46		Demi-Chippendale Polished Mahogany	5,595	4,190

Signature Collection Verticals

HS-112C	44		Continental Polished Ebony	5,250	3,990
HS-112C	44		Continental Polished Mahogany/Walnut/Cherry/White	5,425	4,100
HS-114E	45		Classic Studio Polished Ebony	5,775	4,300
HS-114E	45		Classic Studio Polished Mahogany/Walnut/Cherry	5,975	4,390
HS-115EC	45		Chippendale Polished Ebony	5,775	4,300
HS-115EC	45		Chippendale Polished Mahogany/Walnut/Cherry	5,975	4,390
HS-123E	48		Polished Ebony	6,275	4,590
HS-123E	48		Polished Mahogany/Walnut/Cherry	6,475	4,700
HS-125E	50		Polished Ebony	6,995	4,990
HS-125E	50		Polished Mahogany	7,175	5,100
HS-132E	52		Polished Ebony	8,750	5,990
HS-132E	52		Polished Mahogany	8,925	6,100

Heritage Collection Grands

H-142C	4	7	Polished Ebony	11,995	7,790
H-142C	4	7	Polished Mahogany	12,995	8,390
H-142F	4	7	Queen Anne Polished Mahogany	13,650	8,790

Signature Collection Grands

HS-148A	4	10	Polished Ebony	13,295	8,590
HS-148A	4	10	Polished Mahogany	13,995	8,990
HS-152A	5		Polished Ebony	14,695	9,390
HS-175A	5	9	Polished Ebony	17,195	10,790
HS-186A	6	1	Polished Ebony	18,895	11,790

Imperial Collection Grands

HD-146C	4	9	Satin Ebony	16,195	10,190
HD-146C	4	9	Polished Ebony	15,495	9,790
HD-146C	4	9	"Metropolitan" Polished Ebony/Silver Plate	16,195	10,190
HD-146C	4	9	Polished Mahogany/White	16,195	10,190
HD-146C	4	9	Satin Mahogany/Walnut	17,195	10,790
HD-146C	4	9	Polished Walnut	16,895	10,590
HD-146S	4	9	Queen Anne Polished Ebony	16,495	10,390
HD-146S	4	9	Queen Anne Polished Mahogany/Walnut	17,195	10,790
HD-152C	5		Satin Ebony	17,195	10,790
HD-152C	5		Polished Ebony	16,495	10,390
HD-152C	5		"Metropolitan" Polished Ebony/Silver Plate	17,195	10,790
HD-152C	5		Polished Mahogany/White	17,195	10,790
HD-152C	5		Satin Mahogany/Walnut	18,195	11,390
HD-152C	5		Polished Walnut	17,895	11,190
HD-152D	5		Victorian Polished Ebony	17,495	10,990
HD-152D	5		Victorian Polished Mahogany	18,195	11,390

*See pricing explanation on page 195.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
<i>HALLET, DAVIS & CO. (continued)</i>					
HD-152D	5		Victorian Satin Mahogany/Walnut	19,295	11,990
HD-152D	5		Victorian Polished Walnut	18,895	11,790
HD-152S	5		Queen Anne Polished Ebony	17,495	10,990
HD-152S	5		Queen Anne Satin Mahogany/Walnut	19,295	11,990
HD-152S	5		Queen Anne Polished Mahogany	18,195	11,390
HD-152S	5		Queen Anne Polished Walnut	18,895	11,790
HD-165C	5	5	Satin Ebony	18,195	11,390
HD-165C	5	5	Polished Ebony	17,495	10,990
HD-165C	5	5	"Metropolitan" Polished Ebony/Silver Plate	18,195	11,390
HD-165C	5	5	Polished Mahogany/White	18,195	11,390
HD-165C	5	5	Satin Mahogany/Walnut	19,295	11,990
HD-165C	5	5	Polished Walnut	18,895	11,790
HD-165D	5	5	Period Polished Ebony	18,595	11,590
HD-165D	5	5	Period Satin Mahogany/Walnut	20,295	12,590
HD-165D	5	5	Period Polished Mahogany	19,295	11,990
HD-165D	5	5	Period Polished Walnut	19,995	12,390
HD-165S	5	5	Queen Anne Polished Ebony	18,595	11,590
HD-165S	5	5	Queen Anne Satin Mahogany/Walnut	20,295	12,590
HD-165S	5	5	Queen Anne Polished Mahogany	19,295	11,990
HD-165S	5	5	Queen Anne Polished Walnut	19,995	12,390
HD-185C	6	1	Satin Ebony	20,295	12,590
HD-185C	6	1	Polished Ebony	19,595	12,190
HD-185C	6	1	Polished Mahogany/Walnut	20,995	12,990
HD-185C	6	1	Satin Mahogany/Walnut	21,395	13,190
HD-215C	7	1	Polished Ebony	48,995	28,990

HARDMAN, PECK & CO.

Verticals

R110S	44		Polished Ebony	4,750	3,710
R110S	44		Polished Mahogany	4,925	3,810
R45F	45		French Provincial Satin Cherry	6,145	4,490
R115LS	45		Polished Ebony	5,095	3,890
R115LS	45		Polished Mahogany	5,250	3,990
R116	46		School Polished Ebony	5,595	4,190
R116	46		School Satin Cherry	5,775	4,290
R117XK	46		Chippendale Polished Mahogany	5,595	4,190
R120LS	48		Polished Ebony	5,425	4,090
R120LS	48		Polished Mahogany	5,595	4,190
R132HA	52		Polished Ebony	8,395	5,790

Grands

R143S	4	8	Satin Ebony	12,945	8,390
R143S	4	8	Polished Ebony	11,895	7,790
R143S	4	8	Polished Mahogany	12,945	8,390
R143S	4	8	Satin Cherry	12,945	8,390
R143F	4	8	French Provincial Polished Ebony	12,945	8,390
R143F	4	8	French Provincial Polished Mahogany	13,645	8,790
R143F	4	8	French Provincial Satin Cherry	13,645	8,790
R143R	4	8	Polished Ebony (round legs)	12,945	8,390
R143R	4	8	Polished Mahogany (round legs)	13,645	8,790
R143R	4	8	Satin Cherry (round legs)	13,645	8,790
R150S	5		Satin Ebony	13,995	8,990
R150S	5		Polished Ebony	13,295	8,590
R150S	5		Polished Ebony w/Chrome	14,695	9,390
R150S	5		Polished Mahogany	13,995	8,990
R150S	5		Satin Cherry	14,695	8,990
R150F	5		French Provincial Polished Ebony	13,995	8,990

*See pricing explanation on page 195.

Model	Feet	Inches	Description	MSRP*	SMP*
HARDMAN, PECK & CO. (continued)					
R150F	5		French Provincial Polished Mahogany	14,695	9,390
R150F	5		French Provincial Satin Cherry	14,695	9,390
R150R	5		Polished Ebony (round legs)	13,995	8,990
R150R	5		Polished Mahogany (round legs)	14,695	9,390
R150R	5		Satin Cherry (round legs)	14,695	9,390
R158S	5	3	Satin Ebony	14,695	9,390
R158S	5	3	Polished Ebony	13,995	8,990
R158S	5	3	Polished Mahogany	14,695	9,390
R158S	5	3	Satin Cherry	14,695	9,390
R158F	5	3	French Provincial Polished Ebony	14,695	9,390
R158F	5	3	French Provincial Polished Mahogany	15,395	9,790
R158F	5	3	French Provincial Satin Cherry	15,395	9,790
R158R	5	3	Polished Ebony (round legs)	14,695	9,390
R158R	5	3	Polished Mahogany (round legs)	15,395	9,790
R158R	5	3	Satin Cherry (round legs)	15,395	9,790
R168S	5	7	Satin Ebony	16,095	10,190
R168S	5	7	Polished Ebony	15,395	9,790
R168S	5	7	Polished Mahogany	16,095	10,190
R168S	5	7	Satin Cherry	16,095	10,190
R185S	6	1	Satin Ebony	18,895	11,790
R185S	6	1	Polished Ebony	18,195	11,390
R185S	6	1	Polished Mahogany	18,895	11,790
R185S	6	1	Satin Cherry	18,895	11,790

HEINTZMAN & CO.

Heintzman Verticals

121DL	48		Satin and Polished Mahogany		6,990
123B	48.5		Polished Mahogany		7,500
123F	48.5		French Provincial Polished Ebony		6,800
123F	48.5		French Provincial Polished Mahogany		6,900
126C	50		Polished Ebony		7,600
126C	50		Polished Mahogany		7,700
132D	52		Polished Mahogany, Decorative Panel		8,480
132E	52		French Provincial Satin and Polished Mahogany		8,480
140CK	55		Polished Mahogany		10,500

Heintzman Grands

168	5	6	Polished Ebony		16,990
168	5	6	Polished Mahogany		17,390
186	6	1	Polished Ebony		18,780
186	6	1	Polished Mahogany		19,180
203	6	8	Polished Ebony		20,180
203	6	8	Polished Mahogany		20,780
275	9		Polished Ebony		on request

Gerhard Heintzman Verticals

G118	46.5		Polished Ebony w/Silver Plate and Trim		5,200
G118	46.5		Polished Mahogany w/Silver Plate and Trim		5,400
G120	47		Polished Ebony w/Silver Plate and Trim		5,600
G120	47		Polished Mahogany w/Silver Plate and Trim		5,800
G126	49.5		Polished Ebony w/Silver Plate and Trim		6,400
G126	49.5		Polished Mahogany w/Silver Plate and Trim		6,600

Gerhard Heintzman Grands

G152	5		Polished Ebony		11,600
G152	5		Polished Mahogany		12,200
G152R	5		Empire Polished Ebony		11,800
G152R	5		Empire Polished Mahogany		12,400

*See pricing explanation on page 195.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
HEINTZMAN & CO. (continued)					
G168	5	6	Polished Ebony		12,800
G168R	5	6	Empire Polished Mahogany		13,600

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

IRMLER

Studio Edition Verticals

P108	42.5		Polished Ebony	5,968	5,968
P108	42.5		Polished Mahogany/Walnut	6,144	6,144
P108	42.5		Polished White	6,054	6,054
P110	43		Polished Ebony	5,796	5,796
P118I	46.5		"Ren Vindetti" Polished Ebony	6,356	6,356
P118L	46.5		"Ren Vindetti" Polished Mahogany	6,756	6,756
P118	47		Polished Ebony	6,226	6,226
P118	47		Polished Mahogany/Walnut	6,403	6,403
P118	47		Polished White	6,359	6,359
P121B	47.5		"Ren Vindetti" Polished Ebony	7,104	7,104
P121I	47.5		"Ren Vindetti" Polished Mahogany	6,456	6,456
P122	48		Polished Ebony	6,487	6,487
P122	48		Polished Ebony w/Burr Walnut Accents	6,844	6,844
P122	48		Polished Mahogany/Walnut	6,588	6,588
P122	48		Polished White	6,657	6,657
P132	52		Polished Ebony	7,385	7,385
P132	52		Polished Mahogany/Walnut	7,656	7,656
P132	52		Polished White	7,555	7,555

*See pricing explanation on page 195.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
IRMLER (continued)					
Art Design Verticals					
Mia	47.5		Polished Ebony	7,048	7,048
Gina	48.5		Polished Ebony	6,928	6,928
Monique	49		Polished Ebony	7,618	7,618
Louis	49		Polished Ebony	7,060	7,060
Titus	49		Polished Ebony	8,348	8,348
Alexa	49		Polished Ebony	9,020	9,020
Hugo	49		Polished Ebony	9,538	9,538
Paolo	49		Polished Ebony	10,046	10,046
Professional Edition Verticals					
P116E	46		Polished Ebony	8,597	8,597
P116E	46		Satin Mahogany/Walnut/Cherry	8,598	8,598
P116E	46		Polished Mahogany/Walnut/Cherry	8,732	8,732
P116E	46		Satin and Polished Bubinga	9,688	9,688
P122E	48		Polished Ebony	9,150	9,150
P122E	48		Satin Mahogany/Walnut/Cherry	9,148	9,148
P122E	48		Polished Mahogany/Walnut/Cherry	9,286	9,286
P122E	48		Satin and Polished Bubinga	10,219	10,219
P132E	52		Polished Ebony	10,248	10,248
P132E	52		Satin Mahogany/Walnut/Cherry	10,800	10,800
P132E	52		Polished Mahogany/Walnut/Cherry	11,351	11,351
P132E	52		Satin and Polished Bubinga	12,253	12,253
Studio Edition Grands					
F142	4	8	Polished Ebony	16,464	16,464
F142	4	8	Polished Mahogany/Walnut/White	17,275	17,275
F160	5	3	Polished Ebony	19,373	19,373
F160	5	3	Polished Mahogany/Walnut	20,241	20,241
F160	5	3	Polished White	20,083	20,083
F188	6	2	Polished Ebony	27,702	27,702
F188	6	2	Polished Mahogany/Walnut	28,482	28,482
F188	6	2	Polished White	28,396	28,396
F213	7		Polished Ebony	33,247	33,247
F213	7		Polished White	34,500	34,500
Professional Edition Grands					
F160E	5	3	Polished Ebony	36,155	36,155
F160E	5	3	Satin Mahogany/Walnut/Cherry	36,155	36,155
F160E	5	3	Polished Mahogany/Walnut/Cherry	37,914	37,914
F160E	5	3	Satin and Polished Bubinga	41,049	41,049
F175E	5	9	Polished Ebony	38,798	38,798
F175E	5	9	Satin Mahogany/Walnut/Cherry	38,798	38,798
F175E	5	9	Polished Mahogany/Walnut/Cherry	40,781	40,781
F175E	5	9	Satin and Polished Bubinga	44,151	44,151
F190E	6	3	Polished Ebony	41,442	41,442
F190E	6	3	Satin Mahogany/Walnut/Cherry	41,442	41,442
F190E	6	3	Polished Mahogany/Walnut/Cherry	43,424	43,424
F190E	6	3	Satin and Polished Bubinga	46,157	46,157
F210E	6	10.5	Polished Ebony	51,142	51,142
F210E	6	10.5	Satin Mahogany/Walnut/Cherry	51,142	51,142
F210E	6	10.5	Polished Mahogany/Walnut/Cherry	53,563	53,563
F210E	6	10.5	Satin and Polished Bubinga	56,294	56,294
F230E	7	6.5	Polished Ebony	60,840	60,840

*See pricing explanation on page 195.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
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	13,195	11,590
SI-17		47	FINO Demi-Chippendale Polished Mahogany	15,995	13,790
K-3		48	Satin and Polished Ebony	8,995	8,190
K-3		48	Satin and Polished Mahogany	9,695	8,790
K-3		48	Polished Snow White	9,695	8,790
K-5		49	Satin and Polished Ebony	11,695	10,390
K-5		49	Polished Sapele Mahogany	13,495	11,790
K-6		52	Polished Ebony	16,195	13,990
K-8		52	Polished Ebony	19,195	16,390
Grands					
GM-10K		5	Satin and Polished Ebony	14,195	12,390
GM-10K		5	Satin and Polished Mahogany	15,495	13,390
GM-10K		5	French Provincial Polished Mahogany	16,695	14,390
GM-12		5	Satin and Polished Ebony	18,495	15,790
GM-12		5	Polished Mahogany/Snow White	20,195	17,190
GE-30		5 5	Satin and Polished Ebony	24,495	20,590
GE-30		5 5	Polished Walnut/Sapele Mahogany	27,195	22,790
GE-30		5 5	Satin Walnut	26,695	22,390
GE-30		5 5	Polished Snow White	26,195	21,990
RX-1BLK		5 5	Satin and Polished Ebony	31,695	26,390
RX-1BLK		5 5	Satin Walnut	35,995	29,790
RX-1BLK		5 5	Polished Walnut/Sapele Mahogany	36,995	30,590
RX-1BLK		5 5	Polished Snow White	35,995	29,790
RX-2BLK		5 10	Satin and Polished Ebony	36,195	29,990
RX-2BLK		5 10	Satin Mahogany/Walnut/Cherry/Oak	40,495	33,390
RX-2BLK		5 10	Polished Walnut/Sapele Mahogany	42,195	34,790
RX-2BLK		5 10	Polished Rosewood	47,495	38,990
RX-2BLK		5 10	Polished Snow White	38,995	32,190
RX-2BLK		5 10	French Provincial Polished Mahogany	46,995	38,590
RX-3BLK		6 1	Satin and Polished Ebony	46,995	38,590
CR40N		6 1	Plexiglass	192,495	154,990
RX-5BLK		6 6	Satin and Polished Ebony	53,195	43,590
RX-6BLK		7	Satin and Polished Ebony	59,495	48,590
RX-7BLK		7 6	Satin and Polished Ebony	68,995	56,190
EXG		9 1	Polished Ebony	167,495	134,990

*See pricing explanation on page 195.

Model	Feet	Inches	Description	MSRP*	SMP*
KAWAI, SHIGERU					
Grands					
SK-2	5	10	Polished Ebony	52,500	43,200
SK-2	5	10	Polished Sapele Mahogany	59,000	48,400
SK-2	5	10	Polished Mahogany	59,000	48,400
SK-2	5	10	Classic Noblesse w/Burl Walnut Inlay	81,000	65,800
SK-3	6	1	Polished Ebony	61,000	50,000
SK-3	6	1	Polished Sapele Mahogany	65,000	53,000
SK-3	6	1	Polished Ebony & Claro Walnut	89,500	72,600
SK-3	6	1	Harlequin Limited Edition Polished Ebony & Black Limba	99,500	80,800
SK-5	6	6	Polished Ebony	70,500	57,600
SK-5	6	6	Polished Sapele Mahogany	76,000	61,800
SK-6	7		Polished Ebony	79,500	64,800
SK-7	7	6	Polished Ebony	88,500	71,800
SK-7	7	6	Polished Pyramid Mahogany	133,500	108,000
SK-7	7	6	Classic Noblesse w/Burl Walnut Inlay	121,500	98,400
SK-EX	9		Polished Ebony	199,500	166,400

KIMBALL

Verticals

A49		49	Polished Ebony	11,900	10,990
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Grands

K1	5	1	Polished Ebony	14,300	12,990
A2	5	8	Polished Ebony	32,500	30,800
K3	6	2	Polished Ebony	17,300	15,990

KINGSBURG

Verticals

KU 120		48	Polished Ebony/Mahogany/Walnut	6,495	5,590
KU 120C		48	French Polished Ebony/Mahogany/Walnut	6,495	5,590
KG 125		50	Polished Ebony/Mahogany/Walnut	7,695	6,590
KG 133		52	Polished Ebony/Mahogany/Walnut	8,295	6,990

Grands

KG 158	5	2	Polished Ebony/Mahogany/Walnut	13,995	12,990
KG 185	6	1	Polished Ebony/Mahogany/Walnut	16,995	13,990

KNABE, WM.

Verticals

WKV-118F		46.5	French Provincial Lacquer Semigloss Cherry	8,400	8,550
WKV-118R		46.5	Renaissance Lacquer Satin Ebony	8,800	8,550
WKV-118R		46.5	Renaissance Lacquer Semigloss Walnut	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	19,390
WKG-53	5	3	Polished Ebony	20,800	18,590
WKG-53	5	3	Polished Mahogany/Ivory/White	22,400	20,100
WKG-58	5	8	Satin Ebony	25,000	23,600
WKG-58	5	8	Polished Ebony	24,300	23,000

*See pricing explanation on page 195.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
KNABE (continued)					
WKG-58	5	8	Polished Mahogany/Ivory/White	25,800	24,300
WKG-58A	5	8	"170th Anniversary" Satin Ebony	31,600	29,600
WKG-58A	5	8	"170th Anniversary" Lacquer Semigloss Walnut	31,600	29,600
WKG-58F	5	8	French Provincial Satin Ebony	28,400	28,000
WKG-58F	5	8	French Provincial Polished Ebony	27,800	27,000
WKG-58F	5	8	French Provincial Polished Mahogany/Ivory/White	29,200	28,600
WKG-58M	5	8	Empire Satin Ebony	25,700	25,400
WKG-58M	5	8	Empire Polished Ebony	25,000	24,800
WKG-58M	5	8	Empire Polished Mahogany/Ivory/White	26,700	26,000
WKG-64	6	4	Satin Ebony	33,400	30,000
WKG-64	6	4	Polished Ebony	29,600	28,000
WKG-64	6	4	Polished Mahogany/Ivory/White	31,400	30,000
WKG-70	7		Satin Ebony	38,600	32,000
WKG-70	7		Polished Ebony	37,800	31,400
WKG-76	7	6	Satin Ebony	39,800	33,600
WKG-76	7	6	Polished Ebony	38,600	32,600

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

*See pricing explanation on page 195.

Model	Feet	Inches	Description	MSRP*	SMP*
KOHLER & CAMPBELL (continued)					
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
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

*See pricing explanation on page 195.

Model	Feet	Inches	Description	MSRP*	SMP*
KOHLER & CAMPBELL (continued)					
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

MASON & HAMLIN

Verticals

50	50		Satin and Polished Ebony	21,098	17,541
50	50		Satin Mahogany	21,460	17,826

Grands

B	5	4	Satin Ebony	47,989	38,624
B	5	4	Polished Ebony	48,716	39,194
B	5	4	Satin Mahogany/Walnut	50,198	40,355
B	5	4	Polished Pyramid Mahogany	57,308	45,930
B	5	4	Satin Rosewood	52,675	42,298
B	5	4	Polished Bubinga	54,621	43,824
B	5	4	Satin Macassar Ebony	56,117	44,995
B	5	4	Polished Macassar Ebony	57,308	45,930
A	5	8	Satin Ebony	54,610	43,814
A	5	8	Polished Ebony	56,287	45,130
A	5	8	Satin Mahogany/Walnut	57,621	46,176
A	5	8	Polished Pyramid Mahogany	70,045	55,915
A	5	8	Satin Rosewood	63,957	51,142
A	5	8	Polished Bubinga	66,195	52,898
A	5	8	Satin Macassar Ebony	67,675	54,058
A	5	8	Polished Macassar Ebony	70,045	55,915
A	5	8	"Monticello" Polished Ebony	61,050	48,864
A	5	8	"Monticello" Satin Mahogany	61,341	49,091
A	5	8	"Monticello" Satin Walnut/Rosewood	74,363	59,301
AA	6	4	Satin Ebony	61,832	49,477
AA	6	4	Polished Ebony	63,204	50,552
AA	6	4	Satin Mahogany/Walnut	65,087	52,029
AA	6	4	Polished Pyramid Mahogany	74,770	59,621
AA	6	4	Satin Rosewood	68,682	54,848
AA	6	4	Polished Bubinga	70,920	56,602
AA	6	4	Satin Macassar Ebony	72,400	57,762
AA	6	4	Polished Macassar Ebony	74,770	59,621
AA	6	4	"Monticello" Polished Ebony	68,290	54,539
AA	6	4	"Monticello" Satin Mahogany	68,807	54,946
AA	6	4	"Monticello" Satin Walnut/Rosewood	83,987	66,846
BB	7		Satin Ebony	70,073	55,938
BB	7		Polished Ebony	72,090	57,518
BB	7		Satin Mahogany/Walnut	72,555	57,883
BB	7		Polished Pyramid Mahogany	86,385	68,726
BB	7		Satin Rosewood	81,220	64,677
BB	7		Polished Bubinga	83,235	66,256
BB	7		Satin Macassar Ebony	84,293	67,085
BB	7		Polished Macassar Ebony	86,385	68,726
BB	7		"Monticello" Polished Ebony	75,351	60,216
BB	7		"Monticello" Satin Mahogany	76,275	60,800
BB	7		"Monticello" Satin Walnut/Rosewood	93,608	74,389
CC	9	4	Satin Ebony	104,185	82,682
CC	9	4	Polished Ebony	108,910	86,386
CC	9	4	Satin Mahogany/Walnut	111,518	88,430
CC	9	4	Polished Pyramid Mahogany	126,960	100,536
CC	9	4	Satin Rosewood	117,857	93,400
CC	9	4	Polished Bubinga	121,806	96,496

*See pricing explanation on page 195.

Model	Feet	Inches	Description	MSRP*	SMP*
MASON & HAMLIN (continued)					
CC	9	4	Satin Macassar Ebony	124,935	98,949
CC	9	4	Polished Macassar Ebony	126,960	100,536
All models			Chrome Art Case, add'l	4,000	3,200

MAY BERLIN

Verticals

M 121	48		Tradition Polished Ebony w/brass hardware	7,225	6,780
M 121	48		Tradition Polished Mahogany/White w/brass hardware	7,475	6,980
M 121	48		Tradition Satin Walnut w/brass hardware	7,475	6,980
M 121	48		Tradition Polished Ebony w/chrome hardware	7,725	7,180
M 121	48		Tradition Polished White w/chrome hardware	7,750	7,200
M 121	48		"Modern Cubus" Polished Ebony	7,725	7,180
M 126	50		"Noblesse" Polished Ebony	7,725	7,180

Grands

M 178	5	10	Polished Ebony	21,725	18,380
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MILLER, HENRY F.

Verticals

HMV-044	44		Continental Polished Ebony	3,726	3,726
HMV-046	45.5		Satin Ebony	4,934	4,934
HMV-046	45.5		Satin Walnut	5,039	5,039
HMV-046	45.5		Satin Oak	4,789	4,789
HMV-047	46.5		Satin Ebony	4,619	4,619
HMV-047	46.5		Polished Ebony	4,304	4,304
HMV-047	46.5		Polished Mahogany	4,829	4,829
HMV-048	48		Italian Provincial Cherry	5,301	5,301
HMV-048	48		French Provincial Cherry	5,301	5,301
HMV-52	52		Polished Ebony	6,824	6,824

Grands

HMG-058S	4	10	Satin Ebony	10,866	10,866
HMG-058S	4	10	Polished Ebony	10,446	10,446
HMG-058S	4	10	Polished Mahogany	10,866	10,866
HMG-058S	4	10	French Provincial Satin Cherry	11,601	11,601
HMG-064S	5	4	Satin Ebony	13,124	13,124
HMG-064S	5	4	Polished Ebony	12,704	12,704
HMG-064S	5	4	Polished Mahogany	13,124	13,124
HMG-067S	5	7	Polished Ebony	15,434	15,434
HMG-067S	5	7	Polished Mahogany	15,749	15,749
HMG-074S	6	2	Polished Ebony	17,586	17,586

PALATINO

Verticals

PUP-110TS	43		"Capri" Polished Ebony	4,050	4,050
PUP-123T	48		"Lucca" Polished Ebony	5,130	5,130
PUP-123T	48		"Lucca" Polished Brown Mahogany	5,290	5,290
PUP-123C	50		"Carved Contessa" French Satin Brown Mahogany	5,380	5,380
PUP-126TU	50		"Messina" Polished Ebony	5,730	5,730

Grands

PGD-46	4	6	"Cesaro" Polished Ebony	8,790	8,790
PGD-46	4	6	"Cesaro" Polished Brown Mahogany	8,990	8,990
PGD-50	5		"Salerno" Polished Ebony	10,700	10,700
PGD-59	5	9	"Palermo" Polished Ebony	13,710	13,710

*See pricing explanation on page 195.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
PEARL RIVER					
Verticals					
UP-108D3	42.5		Continental Polished Ebony	3,795	3,590
UP-108D3	42.5		Continental Polished Mahogany/Walnut	3,995	3,790
UP-108M	42.5		Polished Ebony	4,195	3,790
UP-108T2	42.5		Polished Ebony	4,195	3,790
UP-110P8	43		French Provincial Satin Cherry	5,495	4,550
UP-110P9	43		Mediterranean Satin Walnut	5,495	4,550
UP-110P10	43		Italian Provincial Satin Mahogany	5,495	4,550
UP-115E	45		Satin Ebony/Oak/Walnut (School)	5,495	4,550
UP-115M2/M5	45		Polished Ebony	4,595	3,990
UP-115M2/M5	45		Polished Mahogany/Walnut	4,895	4,190
T1	46		Polished Ebony	4,755	4,590
T1	46		Polished Mahogany	4,945	4,730
T2	47.25		Polished Ebony	5,125	4,870
T2	47.25		Polished Walnut	5,285	4,990
EU122	48		Polished Ebony	5,995	4,890
T3	48		Polished Ebony	5,495	5,150
UP-130T	51.5		Polished Ebony	6,995	5,190
Grands					
GP-150	4	11	Hand-rubbed Satin Ebony	11,495	8,490
GP-150	4	11	Polished Ebony	10,995	8,090
GP-150	4	11	Polished Mahogany/Walnut/White	11,495	8,490
GP-160	5	3	Polished Ebony	11,995	8,990
GP-160	5	3	Satin Mahogany/Walnut	12,495	9,390
GP-160A	5	3	European Renaissance Polished Ebony	12,995	9,790
GP-170	5	7	Polished Ebony	13,995	10,590
GP-188A	6	2	Polished Ebony	16,995	12,990
GP-188A	6	2	Polished White	17,995	14,590
GP-212	7		Polished Ebony	24,995	18,990
GP-275	9		Polished Ebony	74,995	56,990

PERZINA, GEBR.

Verticals

GP-112	44		Polished Ebony	6,398	5,265
GP-112	44		Polished Mahogany/Walnut/Oak/White	6,650	5,433
GP-112	44		Satin Finishes	6,650	5,433
GP-112	44		Queen Anne Polished Ebony (with molding)	6,598	5,399
GP-112	44		Queen Anne Polished Mahogany/Walnut (with molding)	6,850	5,567
GP-112	44		Queen Anne Satin Walnut (with molding)	6,850	5,567
PQ-116	46		Deco Leg Polished Ebony	7,098	5,732
PQ-116	46		Deco Leg Polished Mahogany/Oak/"Two-Tone"	7,398	5,932
GP-122	48		Polished Ebony	7,650	6,100
GP-122	48		Polished Ebony with Pommele Center	7,850	6,233
GP-122	48		Polished Mahogany/Walnut/Oak/White	7,998	6,332
GP-122	48		Satin Finishes	7,998	6,332
GP-122	48		Deco Leg Polished Ebony	7,798	6,199
GP-122	48		Deco Leg Polished "Two-Tone" Ebony w/Oak Trim	8,050	6,367
GP-122	48		Deco Leg Polished Mahogany/Oak/White	8,250	6,500
GP-122	48		Deco Leg Polished "Two-Tone" Ebony w/Bubinga or Pommele Front	8,380	6,587
GP-122	48		Queen Anne Polished Ebony	7,798	6,199
GP-122	48		Queen Anne Polished Mahogany/Walnut	8,250	6,500
GP-122	48		Queen Anne Satin Walnut	8,250	6,500
GP-122	48		Queen Anne Polished Ebony w/Molding	7,998	6,332
GP-122	48		Queen Anne Polished Mahogany/Walnut w/Molding	8,380	6,587
GP-122	48		Queen Anne Satin Walnut w/Molding	8,380	6,587
GP-122R	48		GP-122 with Renner AA or Abel Deluxe Hammers, add	650	433

*See pricing explanation on page 195.

<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 Ebony	8,650	6,767
GP-129	51		Polished Ebony w/Pommele Center	8,790	6,860
GP-129	51		Polished Mahogany/Walnut/Oak/White	8,990	6,993
GP-129	51		Satin Finishes	8,990	6,993
GP-129	51		Deco Leg Polished Ebony	8,790	6,860
GP-129	51		Deco Leg Polished "Two-Tone" Ebony w/Oak Trim	9,090	7,060
GP-129	51		Deco Leg Polished Mahogany/Oak/White	9,290	7,193
GP-129	51		Deco Leg Polished "Two-Tone" Ebony w/Bubinga or Pommele Front	9,390	7,260
GP-129	51		Queen Anne Polished Ebony	8,790	6,860
GP-129	51		Queen Anne Polished Mahogany/Walnut	9,290	7,193
GP-129	51		Queen Anne Polished Mahogany/Walnut w/Molding	9,390	7,260
GP-129	51		Queen Anne Satin Walnut w/Molding	9,390	7,260
GP-129R	51		GP-129 with Renner AA or Abel Deluxe Hammers, add	600	400
GP-130R	51		Satin Ebony	10,590	8,060
GP-130R	51		Polished Ebony	10,190	7,793
GP-130R	51		Polished Mahogany/Walnut	10,590	8,060
GP-133R	52.5		"Schwerin" Polished Ebony	10,590	8,060
GP-133R	52.5		"Schwerin" Polished Mahogany/Walnut	10,990	8,327
Grands					
T-152	5		Polished Ebony	14,330	10,553
T-152	5		Polished Mahogany/Walnut/Oak/White	15,050	11,033
T-152	5		Satin Finishes	15,050	11,033
T-152	5		Polished Ebony (round leg)	14,750	10,833
T-152	5		Polished Mahogany/Walnut (round leg)	15,490	11,327
T-152	5		Queen Anne Polished Ebony	14,750	10,833
T-152	5		Queen Anne Polished Mahogany/Walnut	15,490	11,327
T-152	5		Designer Polished Ebony w/Bubinga Fallboard/Lid	15,990	11,660
T-152	5		Designer Polished Ebony w/Sapele Fallboard/Lid	15,990	11,660
T-152	5		Designer Polished Ebony w/Bubinga Legs/Fallboard/Desk	16,950	12,300
T-161	5	3	Polished Ebony	20,950	14,967
T-161	5	3	Polished Mahogany/Walnut/Oak/White	21,750	15,500
T-161	5	3	Satin Finishes	21,750	15,500
T-161	5	3	Polished Ebony (round leg)	21,390	15,260
T-161	5	3	Polished Mahogany/Walnut (round leg)	22,090	15,727
T-161	5	3	Queen Anne Polished Ebony	21,390	15,260
T-161	5	3	Queen Anne Polished Mahogany/Walnut	22,090	15,727
T-161	5	3	Designer Polished Ebony w/Sapele Fallboard/Lid	22,790	16,193
T-161	5	3	Designer Polished Ebony w/Bubinga Fallboard/Lid	22,790	16,193
T-161	5	3	Designer Polished Ebony w/Bubinga Legs/Fallboard/Desk	23,690	16,793
T-161	5	3	Designer Satin Bubinga	23,990	16,993
T-175	5	9	Polished Ebony	22,490	15,993
T-175	5	9	Polished Mahogany/Walnut/Oak/White	22,990	16,327
T-175	5	9	Satin Finishes	22,990	16,327
T-175	5	9	Polished Ebony (round leg)	22,990	16,327
T-175	5	9	Polished Mahogany/Walnut (round leg)	24,090	17,060
T-175	5	9	Queen Anne Polished Ebony	22,990	16,327
T-175	5	9	Queen Anne Polished Mahogany/Walnut	24,090	17,060
T-175	5	9	Designer Polished Ebony w/Sapele Fallboard/Lid	24,390	17,260
T-175	5	9	Designer Polished Ebony w/Bubinga Fallboard/Lid	24,390	17,260
T-175	5	9	Designer Polished Ebony w/Bubinga Legs/Fallboard/Desk	25,690	18,127
T-175	5	9	Designer Satin Bubinga	26,490	18,660
T-188	6	1	Polished Ebony	24,090	17,060
T-188	6	1	Polished Mahogany/Walnut/Oak/White	25,190	17,793
T-188	6	1	Satin Finishes	25,190	17,793
T-188	6	1	Polished Ebony (round leg)	24,490	17,327
T-188	6	1	Polished Mahogany/Walnut (round leg)	25,690	18,127
T-188	6	1	Queen Anne Polished Ebony	24,490	17,327

*See pricing explanation on page 195.

Model	Feet	Inches	Description	MSRP*	SMP*
PERZINA, GEBR. (continued)					
T-188	6	1	Queen Anne Polished Mahogany/Walnut	25,690	18,127
T-188	6	1	Designer Polished Ebony w/Sapele Fallboard/Lid	25,990	18,327
T-188	6	1	Designer Polished Ebony w/Bubinga Fallboard/Lid	25,990	18,327
T-188	6	1	Designer Polished Ebony w/Bubinga Legs/Fallboard/Desk	27,590	19,393
T-188	6	1	Designer Satin Bubinga	28,390	19,927
Most grands			With Detoa action, add	2,000	1,333
Most grands			With Renner action, add	7,600	5,067

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	3,590	3,590
LV-108	42		Continental Polished Mahogany/Walnut/Ivory	3,730	3,590
LV-43F	43		French Provincial Satin Cherry	4,380	4,380
LV-43T	43		Satin Mahogany/Walnut	4,380	4,380
LV-118	46.5		Satin Ebony	4,810	4,810
LV-118	46.5		Polished Ebony	4,610	4,610
LV-118	46.5		Polished Mahogany	4,810	4,810

*See pricing explanation on page 195.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
PRAMBERGER (continued)					
Signature Series Verticals					
PV-118F	46.5		French Provincial Satin Cherry	5,710	5,710
PV-118R	46.5		Renaissance Satin Walnut	5,710	5,710
PV-118T	46.5		Satin Mahogany	5,710	5,710
PV-118S	46.5		Satin Ebony	6,710	5,910
PV-118S	46.5		Polished Ebony	6,510	5,770
PV-118S	46.5		Satin Mahogany/Walnut	6,710	5,910
PV-118S	46.5		Polished Mahogany/Walnut	6,710	5,910
PV-121	48		Satin Ebony	6,160	6,130
PV-121	48		Polished Ebony	6,020	6,020
PV-121	48		Polished Mahogany	6,160	6,130
PV-131	52		Satin Ebony	6,720	6,600
PV-131	52		Polished Ebony	6,460	6,380
PV-131	52		Polished Mahogany	6,720	6,600
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	11,600	10,100
JP-118T	46.5		Lacquer Semigloss Mahogany	11,600	10,100
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	8,830
LG-145	4	8	Polished Mahogany/Walnut	10,490	9,380
LG-150	4	11.5	Satin Ebony	11,190	10,190
LG-150	4	11.5	Polished Ebony	10,590	9,590
LG-150	4	11.5	Polished Mahogany	11,190	10,190
LG-157	5	2	Satin Ebony	12,390	11,110
LG-157	5	2	Polished Ebony	11,790	10,400
LG-157	5	2	Polished Mahogany	12,390	11,110
LG-157	5	2	Polished Pommele/Bubinga w/Ebony	12,710	11,480
LG-175	5	9	Satin Ebony	13,990	12,790
LG-175	5	9	Polished Ebony	13,190	11,990
LG-175	5	9	Polished Mahogany	13,990	12,790
Signature Series Grands					
PS-157	5	2	Satin Ebony	14,810	13,340
PS-157	5	2	Polished Ebony	13,790	12,440
PS-157	5	2	Polished Mahogany/Walnut	14,810	13,340
PS-157	5	2	Polished Pommele/Bubinga w/Ebony	15,350	13,790
PS-175	5	9	Satin Ebony	16,800	15,000
PS-175	5	9	Polished Ebony	15,660	14,040
PS-175SKAF	5	9	Louis XVI Lacquer Semigloss Cherry/Dark Walnut	18,400	16,310
PS-185	6	1	Satin Ebony	17,750	15,790
PS-185	6	1	Polished Ebony	16,800	14,990
PS-208	6	10	Satin Ebony	24,400	21,320
PS-208	6	10	Polished Ebony	23,100	20,250

*See pricing explanation on page 195.

Model	Feet	Inches	Description	MSRP*	SMP*
PRAMBERGER (continued)					
J.P. Pramberger Platinum Series Grands					
JP-160S	5	3	Satin Ebony	24,700	19,590
JP-160S	5	3	Polished Ebony	24,000	18,590
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	28,300
JP-179L	5	10	Satin Ebony	28,200	24,200
JP-179L	5	10	Polished Ebony	27,500	23,700
JP-179L	5	10	Lacquer Semigloss Mahogany/Walnut	29,600	25,400
JP-179L	5	10	Polished Bubinga/Pommele	33,200	28,300
JP-190A	6	3	Satin Ebony	32,700	28,000
JP-190A	6	3	Polished Ebony	32,000	27,400
JP-190A	6	3	Lacquer Semigloss Mahogany/Walnut	34,000	29,000
JP-190A	6	3	Polished Bubinga/Pommele	34,400	29,400
JP-208B	6	10	Satin Ebony	35,400	30,600
JP-208B	6	10	Polished Ebony	34,600	30,200
JP-228C	7	6	Satin Ebony	39,600	33,600
JP-228C	7	6	Polished Ebony	38,400	33,000
JP-280E	9	2	Polished Ebony	94,500	81,600

RITMÜLLER

Verticals

UP-110RB1	43.5		Satin Walnut/Cherry	6,995	4,990
UP-110RB	43.5		French Provincial Satin Walnut/Cherry	6,995	4,990
UH-118R	46.5		Polished Ebony	8,995	6,432
UP-121RB	47.5		Polished Ebony	6,995	4,990
UP-121RB	47.5		Polished Mahogany/White	7,495	5,190
UH-121R	48		Chippendale Polished Ebony	9,495	6,752
UH-121R	48		Chippendale Polished Sapele	9,995	6,992
UH-132R	52		Polished Ebony	11,995	7,960

Grands

GH-148R	4	10	Polished Ebony (spade leg)	15,995	10,292
GH-148R	4	10	Polished Sapele Mahogany (spade leg)	16,495	10,742
GH-148R2	4	10	Polished Ebony (round leg)	16,495	10,592
GH-148R2	4	10	Polished Sapele Mahogany (round leg)	16,995	11,042
R8	4	11.5	Polished Ebony	12,995	8,990
R8	4	11.5	Polished Mahogany/White	13,495	9,390
GH-160R	5	3	Hand-rubbed Satin Ebony	18,495	12,400
GH-160R	5	3	Polished Ebony	17,995	12,176
GH-160R	5	3	Polished Sapele Mahogany	18,495	12,626
GH-170R	5	7	Polished Ebony	19,995	14,126
GH-188R	6	2	Polished Ebony	24,995	18,176
GH-212R	7		Polished Ebony	29,995	20,350
GH-275R	9		Polished Ebony	79,995	58,000

SAMICK

Verticals

JS-042	42		Continental Polished Ebony	3,590	3,590
JS-042	42		Continental Polished Mahogany/Walnut/Ivory	3,710	3,710
JS-042	42		Continental Satin Cherry/Walnut	3,590	3,590
JS-143F	43		French Provincial Satin Cherry	4,690	4,690
JS-143M	43		Mediterranean Satin Brown Oak	4,690	4,690
JS-143T	43		Satin Mahogany	4,690	4,690
JS-115	45		Satin Ebony	4,370	4,370

*See pricing explanation on page 195.

Model	Feet	Inches	Description	MSRP*	SMP*
SAMICK (continued)					
JS-115	45		Polished Ebony	4,220	4,220
JS-115	45		Satin Mahogany/Walnut	4,220	4,220
JS-115	45		Polished Mahogany/Walnut	4,370	4,370
JS-118H	46.5		Satin Ebony	4,810	4,810
JS-118H	46.5		Polished Ebony	4,610	4,610
JS-118H	46.5		Polished Mahogany/Walnut	4,810	4,810
JS-247	46.5		Satin Ebony	6,590	5,910
JS-247	46.5		Polished Ebony	6,450	5,770
JS-247	46.5		Satin Mahogany/Walnut	6,450	5,770
JS-247	46.5		Polished Mahogany/Walnut	6,590	5,910
JS-121M/F	48		Satin Ebony	5,640	5,640
JS-121M/F	48		Polished Ebony	5,380	5,380
JS-121M/F	48		Polished Mahogany	5,640	5,640
JS-131	52		Satin Ebony	6,600	6,490
JS-131	52		Polished Ebony	6,400	6,280
JS-131	52		Polished Mahogany	6,600	6,490
Grands					
SIG-48	4	8	Polished Ebony	9,790	8,830
SIG-48	4	8	Polished Mahogany/Walnut	10,490	9,380
SIG-50	4	11.5	Satin Ebony	11,190	10,190
SIG-50	4	11.5	Polished Ebony	10,590	9,590
SIG-50	4	11.5	Polished Mahogany/Walnut	11,190	10,190
SIG-54	5	4	Satin Ebony	12,290	11,110
SIG-54	5	4	Polished Ebony	11,690	10,400
SIG-54	5	4	Polished Mahogany/Walnut	12,290	11,110
SIG-54	5	4	Polished Bubinga/Pommele w/Ebony	12,710	11,480
SIG-54 KBF	5	4	French Provincial Satin Mahogany/Walnut/Cherry	15,590	13,390
SIG-57	5	7	Satin Ebony	14,620	13,190
SIG-57	5	7	Polished Ebony	13,760	12,470
SIG-57	5	7	Polished Mahogany/Walnut	14,620	13,190
SIG-57L	5	7	Empire Satin Ebony	16,430	14,690
SIG-57L	5	7	Empire Polished Ebony	15,400	13,830
SIG-57L	5	7	Empire Polished Mahogany	16,430	14,690
SIG-61	6	1	Satin Ebony	16,200	14,480
SIG-61	6	1	Polished Ebony	15,140	13,620
SIG-61L	6	1	Empire Satin Ebony	17,450	15,540
SIG-61L	6	1	Empire Polished Ebony	16,430	14,690
SIG-61L	6	1	Empire Polished Mahogany	17,450	15,540

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

*See pricing explanation on page 195.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
SAUTER (continued)					
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
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

Classic Series Verticals

C 116	46		Tradition Polished Ebony	20,225	17,180
C 116	46		Tradition Satin Alder	20,975	17,780
C 116	46		Tradition Satin Beech	19,725	16,780
C 116	46		Tradition Satin Walnut	20,225	17,180
C 116	46		Tradition Satin Cherry	21,725	18,380
C 116	46		Tradition Polished Mahogany/White	22,725	19,180
C 116	46		Modern Polished Ebony	23,475	19,780
C 116	46		Modern Polished White	25,975	21,780

*See pricing explanation on page 195.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
SCHIMMEL (continued)					
C 116	46		"Modern Cubus" Polished Ebony	23,475	19,780
C 116	46		"Modern Cubus" Polished White	25,975	21,780
C 120	48		Tradition Polished Ebony	22,225	18,780
C 120	48		Tradition Satin Alder/Beech	22,225	18,780
C 120	48		Tradition Satin Walnut	22,725	19,180
C 120	48		Tradition Satin Cherry	25,225	21,180
C 120	48		Tradition Polished Mahogany/White	24,725	20,780
C 120	48		Tradition Marketerie Polished Mahogany	27,475	22,980
C 120	48		"International" Polished Ebony	20,975	17,780
C 120	48		"International" Polished Mahogany/White	23,475	19,780
C 120	48		"Royal" Polished Ebony	25,975	21,780
C 120	48		"Royal Intarsie Flora" Polished Mahogany	28,475	23,780
C 126	49		Tradition Polished Ebony	26,475	22,180
C 126	49		Tradition Polished Mahogany	28,975	24,180
C 130	51		Tradition Polished Ebony	28,975	24,180
C 130	51		Tradition Polished Mahogany	31,475	26,180
Konzert Series Verticals					
K 122	48		"Elegance" Polished Ebony	31,475	26,180
K 122	48		"Modern Cubus" Polished Ebony	33,225	27,580
K 122	48		"Modern Cubus" Polished White	35,225	29,180
K 122	48		"Tradition Akademie" Polished Ebony	31,475	26,180
K 125	49		Tradition Polished Ebony	34,975	28,980
K 125	49		Tradition Polished Mahogany	37,975	31,380
K 132	52		Tradition Polished Ebony	37,475	30,980
K 132	52		Tradition Polished Mahogany	40,225	33,180
K 132	52		"Wilhelmina" Satin Mahogany/Walnut	49,975	40,980
Classic Series Grands					
C 182	6		Tradition Polished Ebony	44,725	36,780
C 182	6		Tradition Polished Mahogany/White	48,475	39,780
C 182	6		"Art Nouveau" Polished Ebony	48,975	40,180
C 182	6		"Art Nouveau" Polished Mahogany/White	52,725	43,180
C 208	6	10	Tradition Polished Ebony	55,975	45,780
C 208	6	10	Tradition Polished Mahogany	59,225	48,380
C 208	6	10	"Art Nouveau" Polished Ebony	60,225	49,180
C 208	6	10	"Art Nouveau" Polished Mahogany	63,975	52,180
Konzert Series Grands					
K 169	5	7	Tradition Polished Ebony	57,725	47,180
K 169	5	7	Tradition Polished Mahogany/White	62,725	51,180
K 169	5	7	Tradition Polished Exquisite Woods	78,975	64,180
K 169	5	7	Tradition Intarsie Harp Polished Ebony	65,725	53,580
K 169	5	7	Tradition Intarsie Vase Polished Mahogany	78,975	64,180
K 169	5	7	"Belle Epoque" Polished Ebony	68,225	55,580
K 169	5	7	"Royal" Polished Ebony	60,475	49,380
K 169	5	7	"Royal" Polished Mahogany/White	65,475	53,380
K 169	5	7	"Royal Intarsie Flora" Polished Mahogany	78,975	64,180
K 189	6	3	Tradition Polished Ebony	62,975	51,380
K 189	6	3	Tradition Polished Mahogany/White	67,975	55,380
K 189	6	3	Tradition Polished Exquisite Woods	84,225	68,380
K 189	6	3	Tradition Akademie Polished Ebony	62,975	51,380
K 189	6	3	"Tradition Intarsie Harp" Polished Ebony	73,475	59,780
K 189	6	3	"Tradition Intarsie Vase" Polished Mahogany	84,225	68,380
K 189	6	3	"Belle Epoque" Polished Ebony	73,475	59,780
K 189	6	3	"Edition N.W. Schimmel" Polished Ebony	84,225	68,380
K 189	6	3	"Royal" Polished Ebony	65,725	53,580
K 189	6	3	"Royal" Polished Mahogany/White	70,725	57,580
K 189	6	3	"Royal Intarsie Flora" Polished Mahogany	84,225	68,380

*See pricing explanation on page 195.

Model	Feet	Inches	Description	MSRP*	SMP*
SCHIMMEL (continued)					
K 213	7		Tradition Polished Ebony	66,975	54,580
K 213	7		Tradition Polished Mahogany/White	71,975	58,580
K 213	7		Tradition Polished Exquisite Woods	88,225	71,580
K 213	7		Tradition Akademie Polished Ebony	66,975	54,580
K 213	7		"Edition N.W. Schimmel" Polished Ebony	88,225	71,580
K 213	7		"Royal" Polished Ebony	69,725	56,780
K 213	7		"Royal" Polished Mahogany/White	74,725	60,780
K 213	7		"Glas" Clear Acrylic and White or Black	162,725	131,180
K 213	7		"Otmar Alt" Polished Ebony w/Color Motifs	186,725	150,380
K 230	7	6	Tradition Polished Ebony	91,975	74,580
K 256	8	4	Tradition Polished Ebony	102,475	82,980
K 280	9	2	Tradition Polished Ebony	133,975	108,180

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

*See pricing explanation on page 195.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
SEILER (continued)					
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
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					
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

*See pricing explanation on page 195.

Model	Feet	Inches	Description	MSRP*	SMP*
SEILER (continued)					
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
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. Models with a slow-close fallboard have model numbers ending with "D." However, most models, both grand and vertical, regardless of how listed here, are available with or without a slow-close fallboard at a cost of about \$100 more or 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. Falcone Georgian grand (FG) models are shown only where a particular style or finish is available only under that label.

Verticals

U 09	43	Continental Polished Ebony	4,400	3,514
U 09	43	Continental Polished Other Finishes	4,600	3,614
U 09	43	Continental Satin Finishes	4,500	3,563
U 09A	43	Continental Polished Ebony (no back posts)	4,100	3,346
U 09A	43	Continental Polished Other Finishes (no back posts)	4,300	3,446
U 09L	43	Polished Ebony	4,500	3,563
U 09L	43	Polished Other Finishes	4,700	3,664
C 12F	44	French Provincial Satin Cherry/Brown Oak	5,100	3,904
C 12F1	44	French Provincial Satin Cherry/Brown Oak	4,900	3,819
C 12IP	44	Italian Provincial Satin Walnut/Mahogany/Cherry/Oak	5,500	4,162
C 12M	44	Mediterranean Satin Cherry/Brown Oak	5,100	3,904
C 12M1	44	Mediterranean Satin Cherry/Brown Oak/Sapele	4,900	3,819
U 12F	44	French Provincial Polished Ebony	5,000	3,837
U 12F	44	French Provincial Other Polished Finishes	5,100	3,939
U 12F	44	French Provincial Satin Finishes	5,100	3,888
U 12FC	44	12F Satin with Decorated Front Panel	5,100	3,922
U 12T	44	Polished Ebony	4,800	3,733
U 12T	44	Polished Other Finishes	5,000	3,837
U 12T	44	Satin Finishes	4,900	3,784
C 13FD	44.5	French Provincial Satin Cherry/Mahogany	5,700	4,264
C 13F1D	44.5	French Provincial Satin Cherry/Brown Oak/Mahogany	6,000	4,435
C 13MD	44.5	Designer Satin Cherry/Dark Cherry/Mahogany	5,700	4,264
C 13M1D	44.5	Designer Satin Cherry/Brown Oak/Mahogany	6,000	4,435

*See pricing explanation on page 195.

<i>Model</i>	<i>Feet Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
SEJUNG (continued)				
C 16AT	45.5	Satin Cherry/Brown Oak	5,800	4,333
C 16F	45.5	French Provincial Satin Cherry/Brown Oak/Walnut	5,400	4,075
C 16FP	45.5	French Provincial Satin Cherry/Brown Oak	5,500	4,128
C 16IP	45.5	Italian Provincial Satin Cherry/Walnut	5,500	4,128
C 16QA	45.5	Queen Anne Satin Cherry/Brown Oak/Mahogany	6,000	4,419
U 16IC	46	Italian Provincial Polished Ebony	4,900	3,784
U 16IC	46	Italian Provincial Other Polished Finishes	5,100	3,888
U 16ST	46	Satin Finishes (school)	5,000	3,837
U 16STL	46	Polished Ebony (school with lock)	5,000	3,853
U 16STL	46	Polished Other Finishes (school with lock)	5,200	3,955
U 16STL	46	Satin Finishes (school with lock)	5,100	3,904
U 16TC	46	Polished Ebony w/Decorated Front Panel	5,000	3,853
U 16TC	46	Polished Other Finishes w/Decorated Front Panel	5,200	3,955
U 18MS	46.5	Designer Other Polished Finishes w/Front Inlay	5,100	3,939
C 19F	47	Country French Satin Cherry/Brown Oak/Mahogany	5,700	4,248
C 19F1D	47	Country French Satin Cherry/Brown Oak	5,900	4,350
C 19M	47	Mediterranean Satin Brown Oak/Cherry/Mahog.	5,700	4,248
C 19M1D	47	Mediterranean Satin Cherry/Oak/Brown Oak	5,900	4,350
C 19QAD	47	Queen Anne Satin Cherry/Brown Oak	6,500	4,693
C 47CI	47	Modern Designer C Polished Ebony	7,000	5,018
C 47CI	47	Modern Designer C Polished Other Finishes	7,200	5,122
C 47FD	47	French Provincial Satin Cherry/Mahogany	7,700	5,378
C 47MD	47	Mediterranean Satin Mahogany	7,700	5,378
C 47R	47	Modern Designer R Other Polished Finishes	7,400	5,206
C 47V	47	Modern Designer V Polished Ebony	7,800	5,446
U 19F	47	French Provincial Polished Ebony	5,100	3,904
U 19F	47	French Provincial Polished Other Finishes	5,300	4,008
U 19F	47	French Provincial Satin Finishes	5,200	3,955
U 19FC	47	Polished Other Finishes w/Decorated Front Panel	5,400	4,075
U 19PD	47	Designer Polished Finishes	5,400	4,059
U 19ST	47	Polished Ebony	4,900	3,819
U 19ST	47	Polished Other Finishes	5,100	3,922
U 19ST	47	Satin Finishes	5,000	3,870
U 19T	47	Polished Ebony	4,900	3,819
U 19T	47	Polished Other Finishes	5,100	3,922
U 19T	47	Satin Finishes	5,000	3,870
U 20T	47	Designer Polished Ebony	5,400	4,075
U 20T	47	Designer Other Polished Finishes	5,600	4,179
U 210MD	47.5	Designer Special Other Polished Finishes	5,600	4,179
U 22F	48	French Provincial Polished Ebony	5,400	4,093
U 22F	48	French Provincial Polished Other Finishes	5,600	4,195
U 22ITD	48	Italian Designer Polished Ebony	5,700	4,264
U 22T	48	Polished Ebony	5,200	3,990
U 22T	48	Polished Other Finishes	5,400	4,093
U 22T	48	Satin Finishes	5,300	4,042
U 22WTD	48	Metropolitan Designer Polished Ebony	5,700	4,264
U 23FD	48	French Provincial Polished Ebony	5,900	4,350
U 23FD	48	French Provincial Polished Other Finishes	6,000	4,453
U 23FD	48	French Provincial Satin Finishes	6,000	4,402
U 23TD	48	Designer Professional Polished Ebony	5,700	4,248
U 23TD	48	Designer Professional Polished Other Finishes	5,900	4,350
U 23TD	48	Designer Professional Satin Finishes	5,800	4,299
U 26T	48	Designer Polished Ebony	5,300	4,042
U 28D	48	Designer Special Polished Bubinga	6,800	4,899
U 28SD	48	Designer Special Polished Bubinga w/Inlay	7,000	5,018
U 230CD	48.5	Designer Medieval Special Satin Finishes	6,600	4,762
U 25BD	49.5	Designer w/HM on Front Panel Polished Ebony	6,000	4,419

*See pricing explanation on page 195.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
SEJUNG (continued)					
U 25S	49.5		Designer w/BLK Oval Polished Ebony	5,700	4,264
U 25SM	49.5		Designer w/BSP Oval Polished Ebony	5,800	4,299
U 32E	52		Professional Designer LHM Polished Ebony	7,800	5,446
U 32F	52		French Provincial Polished Ebony	5,700	4,264
U 32FD	52		French Provincial Polished Other Finishes	6,100	4,470
U 32HD	52		Professional Designer Polished Bubinga	7,000	5,018
U 32T	52		Polished Ebony	5,500	4,162
U 32T	52		Polished Other Finishes	5,700	4,264
U 32T	52		Satin Finishes	5,600	4,213
Grands					
G 42D	4	8	Satin Ebony	13,700	8,826
G 42D	4	8	Polished Ebony	13,400	8,656
G 42D	4	8	Satin Wood Finishes	14,300	9,162
G 42D	4	8	Polished Wood Finishes	14,000	8,994
G 42D	4	8	Polished Ivory/White	13,700	8,826
FG 42D	4	8	Polished Bubinga	15,100	9,614
G 42F	4	8	French Provincial Polished Ebony	13,900	8,960
G 42FD	4	8	French Provincial Satin Wood Finishes	14,800	9,565
G 42FD	4	8	French Provincial Polished Wood Finishes	14,500	9,397
FG 42LD	4	8	Louis XVI Polished Ebony	14,100	9,043
G 52D	5		Satin Ebony	15,500	9,834
G 52D	5		Polished Ebony	15,200	9,662
G 52D	5		Satin Wood Finishes	16,100	10,176
G 52D	5		Polished Wood Finishes	15,800	10,005
G 52D	5		Polished Bubinga	16,700	10,518
FG 52FD	5		French Provincial Polished Ebony	16,100	10,227
G 52FD	5		French Provincial Satin Wood Finishes	16,800	10,587
G 52FD	5		French Provincial Polished Wood Finishes	16,500	10,416
FG 52FD	5		French Provincial Polished Ivory/White	16,400	10,398
G 52FAD	5		FrenchAnn Polished Wood Finishes	17,000	10,691
G 52LD	5		Louis XVI Polished Ebony	15,600	9,936
G 52LD	5		Louis XVI Polished Wood Finishes	16,200	10,278
G 62D	5	4	Satin Ebony	17,000	10,691
G 62D	5	4	Polished Ebony	16,700	10,518
G 62D	5	4	Satin Wood Finishes	17,600	11,034
G 62D	5	4	Polished Wood Finishes	17,300	10,862
G 62D	5	4	Polished Ivory/White	17,000	10,691
G 62F	5	4	French Provincial Satin Ebony	17,500	10,998
G 62FD	5	4	French Provincial Polished Ebony	17,400	10,930
G 62FD	5	4	French Provincial Satin Wood Finishes	18,300	11,445
G 62FD	5	4	French Provincial Polished Wood Finishes	18,000	11,274
G 62FD	5	4	French Provincial Polished Ivory/White	17,700	11,102
G 62HLED	5	4	Louis XVI Polished Ebony (Hexagonal)	17,700	11,136
G 62HLED	5	4	Louis XVI Polished Sapele (Hexagonal)	19,200	11,992
FG 62HLED	5	4	Louis XVI Polished Wood Finishes (Hexagonal)	19,800	12,318
G 62PLBD	5	4	Louis XVI Polished Bubinga (Octagonal)	19,200	11,992
G 62QAD	5	4	Queen Anne Polished Wood Finishes	18,500	11,547
G 72D	5	8	Satin Ebony	18,500	11,547
G 72D	5	8	Polished Ebony	18,200	11,376
G 72D	5	8	Satin Wood Finishes	19,100	11,890
G 72D	5	8	Polished Wood Finishes	18,800	11,718
G 72D	5	8	Polished Bubinga	19,700	12,232
G 72D	5	8	Polished Ivory/White	18,500	11,547
G 72FD	5	8	French Provincial Polished Ebony	18,900	11,787
G 72FD	5	8	French Provincial Satin Wood Finishes	19,800	12,301
G 72FD	5	8	French Provincial Polished Wood Finishes	19,500	12,130
G 72FD	5	8	French Provincial Polished Ivory/White	19,200	11,958

*See pricing explanation on page 195.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
SEJUNG (continued)					
FG 72FF	5	8	Rococo Polished Ivory/White	20,000	12,456
G 72HLD	5	8	Louis XVI Satin Wood Finish (Hexagonal)	20,000	12,405
G 72HLD	5	8	Louis XVI Polished Bubinga (Hexagonal)	22,400	13,774
G 72LD	5	8	Louis XVI Polished Ebony	18,600	11,650
FG 72LD	5	8	Louis XVI Satin Wood Finishes	20,100	12,490
G 72LD	5	8	Louis XVI Polished Wood Finishes	19,200	11,992
G 72PLD	5	8	Louis XVI Polished Wood Finishes (Octagonal)	19,700	12,232
G 72PLSD	5	8	Louis XVI Polished Wood Finishes (Octagonal)	20,400	12,661
G 72PLSD	5	8	Louis XVI Polished Sapele (Octagonal)	21,300	13,174
G 72QAD	5	8	Queen Anne Satin Wood Finishes	20,100	12,507
G 87BCD	6	2	Polished Bubinga w/Rim Band/Beveled Lid	21,600	13,363
G 87D	6	2	Satin Ebony	20,000	12,405
G 87D	6	2	Polished Ebony	19,700	12,232
G 87D	6	2	Polished Wood Finishes	20,300	12,576
G 87D	6	2	Polished Bubinga	21,200	13,090
G 87D	6	2	Polished Ivory/White	20,000	12,405
G 87FD	6	2	French Provincial Polished Ebony	20,400	12,643
G 87FD	6	2	French Provincial Satin Wood Finishes	21,300	13,158
G 87FD	6	2	French Provincial Polished Wood Finishes	21,000	12,987
FG 87FFBD	6	2	Rococo Polished Wood Finishes	22,200	13,690
FG 87HLBCD	6	2	Louis XVI Polished Beech Ebony (Hexagonal)	24,300	14,888
G 87HLD	6	2	Louis XVI Satin Wood Finish (Hexagonal)	21,500	13,261
G 87LD	6	2	Louis XVI Satin Ebony	20,400	12,678
G 87LD	6	2	Louis XVI Polished Ebony	20,100	12,507
G 87LD	6	2	Louis XVI Satin Wood Finishes	21,000	13,021
G 87LD	6	2	Louis XVI Polished Wood Finishes	20,700	12,850
G 87LD	6	2	Louis XVI Polished Ivory/White	20,400	12,678
G 87PLD	6	2	Louis XVI Satin Wood Finishes (Octagonal)	21,500	13,261
G 87PLSD	6	2	Louis XVI Polished Wood Finishes/Inlays (Octagonal)	22,100	13,603
G 208D	6	10	Satin Ebony	24,300	14,872
G 208D	6	10	Polished Ebony	24,000	14,701
G 208D	6	10	Satin Wood Finishes	24,900	15,214
G 208HLBCD	6	10	Louis XVI Satin Wood Finish (Hexagonal)	26,300	16,003
G 208HLBCD	6	10	Louis XVI Polished Wood Finish (Hexagonal)	26,000	15,832
G 208HLD	6	10	Louis XVI Satin Wood Finish (Hexagonal)	25,800	15,728

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

Steck, Geo. — see Sejung

*See pricing explanation on page 195.

Model	Feet	Inches	Description	MSRP*	SMP*
STEINBERG, WILH.					
Verticals					
IQ 16	46		Polished Ebony		17,890
IQ 16	46		Satin Beech/Oak/Alder		18,010
IQ 16	46		Satin Walnut/Mahogany		18,620
IQ 16	46		Polished White		19,780
AC 118	46.5		Polished Ebony		15,140
AC 118	46.5		Polished White		15,810
IQ 24	48		Polished Ebony		20,210
IQ 24	48		Satin Beech/Oak/Alder		20,210
IQ 24	48		Satin Walnut/Mahogany		20,880
IQ 24	48		Polished White		22,280
IQ 24	48		Amadeus Polished Ebony		21,950
IQ 24	48		Amadeus Satin Walnut/Mahogany		23,230
IQ 24	48		Amadeus Polished White		23,840
AC 123	48.5		Polished Ebony		16,420
AC 130	51		Polished Ebony		18,800
IQ 28	51		Polished Ebony		24,180
IQ 28	51		Satin Beech/Alder/Oak		24,180
IQ 28	51		Satin Walnut/Mahogany		24,660
IQ 28	51		Polished White		26,160
IQ 28	51		Amadeus Polished Ebony		26,800
IQ 28	51		Amadeus Satin Walnut/Mahogany		27,290
IQ 28	51		Amadeus Polished White		28,690
IQ 28	51		Passione Polished Ebony		28,880
IQ 28	51		Passione Satin Walnut/Mahogany		30,130
Grands					
IQ 77	5	8	Polished Ebony		59,070
IQ 77	5	8	Satin Walnut/Mahogany		63,160
IQ 77	5	8	Satin Cherry		64,110
AC 188	6	2	Polished Ebony		38,290
AC 188	6	2	Polished White		41,520
AC 212	6	11.5	Polished Ebony		46,100

STEINGRAEBER & SÖHNE

Euro = \$1.25. For pricing information on Steingraeber-Phoenix pianos, please contact the distributor.

Verticals

122 T	48		Satin Ebony	35,910	35,910
122 T	48		Polished Ebony	36,529	36,529
122 T	48		Satin Sapele/Walnut	35,437	35,437
122 T	48		Polished Sapele/Walnut	41,349	41,349
130 PS/S	51		Satin Ebony	43,186	43,186
130 PS/S	51		Polished Ebony	47,439	47,439
130 PS/S	51		Polished Ebony w/Twist & Change Panels	51,219	51,219
130 PS/S	51		Satin Sapele/Walnut	42,577	42,577
130 PS/S	51		Polished Sapele/Walnut	48,699	48,699
130 PS/S	51		Satin Special Veneers	44,604	44,604
130 PS/S	51		Polished Special Veneers	50,725	50,725
130			With SFM action, add'l	1,397	1,397
130 K	51		Classic Satin Ebony	43,186	43,186
130 K	51		Classic Polished Ebony	47,439	47,439
130 K	51		Classic Polished Ebony w/Twist & Change	51,219	51,219
130 K	51		Classic Satin Sapele/Walnut	42,577	42,577
130 K	51		Classic Polished Sapele/Walnut	48,699	48,699
130 K	51		Classic Satin Special Veneers	44,604	44,604
130 K	51		Classic Polished Special Veneers	50,725	50,725

*See pricing explanation on page 195.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
STEINGRAEBER & SÖHNE (continued)					
138 K		54	Classic Satin Ebony	50,463	50,463
138 K		54	Classic Polished Ebony	52,290	52,290
138 K		54	Classic Polished Ebony w/Twist & Change	56,112	56,112
138 K		54	Classic Satin Sapele/Walnut	49,759	49,759
138 K		54	Classic Polished Sapele/Walnut	55,912	55,912
138 K		54	Classic Satin Special Veneers	51,828	51,828
138 K		54	Classic Polished Special Veneers	57,970	57,970

Grands

A170 N	5	7	Satin and Polished Ebony	86,649	86,649
A170 N	5	7	Studio Anti-Scratch Lacquer Polished Ebony	84,339	84,339
A170 N	5	7	Satin Sapele/Walnut	96,992	96,992
A170 N	5	7	Polished Sapele/Walnut	100,740	100,740
A170 N	5	7	Satin Special Veneers	98,409	98,409
A170 N	5	7	Polished Special Veneers	102,137	102,137
A170 K	5	7	"Classicism"/Chippendale Satin and Polished Ebony	99,753	99,753
A170 K	5	7	"Classicism"/Chippendale Studio Anti-Scratch Lacquer Polished Ebony	97,485	97,485
A170 S	5	7	"Studio" Satin and Polished Ebony	82,281	82,281
A170 S	5	7	"Studio" Studio Anti-Scratch Lacquer Polished Ebony	79,961	79,961
A170 S	5	7	"Studio" Satin Sapele/Walnut	92,655	92,655
A170 S	5	7	"Studio" Polished Sapele/Walnut	96,414	96,414
A170 S	5	7	"Studio" Satin Special Veneers	94,073	94,073
A170 S	5	7	"Studio" Polished Special Veneers	97,800	97,800
C212 N	7		Satin and Polished Ebony	120,240	120,240
C212 N	7		Studio Anti-Scratch Lacquer Polished Ebony	117,059	117,059
C212 N	7		Satin Sapele/Walnut	131,727	131,727
C212 N	7		Polished Sapele/Walnut	135,665	135,665
C212 N	7		Satin Special Veneers	133,407	133,407
C212 N	7		Polished Special Veneers	137,345	137,345
C212 K	7		"Classicism"/Chippendale Satin and Polished Ebony	133,355	133,355
C212 K	7		"Classicism"/Chippendale Studio Anti-Scratch Lacquer Polished Ebony	130,184	130,184
C212 S	7		"Studio" Satin and Polished Ebony	116,691	116,691
C212 S	7		"Studio" Studio Anti-Scratch Lacquer Polished Ebony	113,510	113,510
C212 S	7		"Studio" Satin Sapele/Walnut	128,462	128,462
C212 S	7		"Studio" Polished Sapele/Walnut	132,399	132,399
C212 S	7		"Studio" Satin Special Veneers	130,142	130,142
C212 S	7		"Studio" Polished Special Veneers	134,079	134,079
D-232	7	7	Semi-Concert Satin and Polished Ebony	146,871	146,871
D-232	7	7	Semi-Concert Studio Anti-Scratch Lacquer Polished Ebony	143,710	143,710
D-232	7	7	Semi-Concert Satin Sapele/Walnut	159,901	159,901
D-232	7	7	Semi-Concert Polished Sapele/Walnut	164,385	164,385
D-232	7	7	Semi-Concert Satin Special Veneers	161,760	161,760
D-232	7	7	Semi-Concert Polished Special Veneers	166,201	166,201
E-272	8	11	Concert Satin and Polished Ebony	205,713	205,713
E-272	8	11	Concert Studio Anti-Scratch Lacquer Polished Ebony	202,542	202,542
E-272	8	11	Concert Satin Sapele/Walnut	227,889	227,889
E-272	8	11	Concert Polished Sapele/Walnut	233,139	233,139
E-272	8	11	Concert Satin Special Veneers	229,989	229,989
E-272	8	11	Concert Polished Special Veneers	235,207	235,207

*See pricing explanation on page 195.

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	24,900	24,900
4510	45		Sheraton Mahogany	27,700	27,700
4510	45		Sheraton Walnut	28,800	28,800
1098	46.5		Satin Ebony	23,400	23,400
1098	46.5		Mahogany	25,700	25,700
1098	46.5		Walnut	26,500	26,500
K-52	52		Satin Ebony	30,600	30,600
K-52	52		Mahogany	34,600	34,600
K-52	52		Walnut	35,700	35,700

Grands

S	5	1	Satin Ebony	51,400	51,400
S	5	1	Mahogany	57,600	57,600
S	5	1	Walnut	60,100	60,100
S	5	1	Figured Sapele	62,700	62,700
S	5	1	Dark Cherry	63,800	63,800
S	5	1	Kewazinga Bubinga	65,500	65,500
S	5	1	Santos Rosewood	72,600	72,600
S	5	1	East Indian Rosewood	73,400	73,400
S	5	1	African Pommele	74,000	74,000
S	5	1	Macassar Ebony	80,700	80,700
S	5	1	Chinoiserie	70,500	70,500
S	5	1	Hepplewhite Dark Cherry	66,700	66,700
M	5	7	Satin Ebony	57,900	57,900
M	5	7	Mahogany	64,900	64,900
M	5	7	Walnut	67,500	67,500
M	5	7	Figured Sapele	70,300	70,300
M	5	7	Dark Cherry	71,400	70,960
M	5	7	Kewazinga Bubinga	73,200	73,200
M	5	7	Santos Rosewood	80,400	80,400
M	5	7	East Indian Rosewood	81,700	81,700
M	5	7	African Pommele	82,200	82,200
M	5	7	Macassar Ebony	89,600	89,600
M	5	7	Chinoiserie	76,600	76,600
M	5	7	Hepplewhite Dark Cherry	74,600	74,180
M 1014A	5	7	Chippendale Mahogany	81,400	80,400
M 1014A	5	7	Chippendale Walnut	83,400	82,260
M 501A	5	7	Louis XV Walnut	104,900	104,600
M 501A	5	7	Louis XV East Indian Rosewood	122,200	121,180
M	5	7	“John Lennon Imagine” Polished White	89,900	89,900
O	5	10.5	Satin Ebony	65,200	65,200
O	5	10.5	Mahogany	72,700	72,700
O	5	10.5	Walnut	75,400	74,740
O	5	10.5	Figured Sapele	78,400	77,700
O	5	10.5	Dark Cherry	79,600	79,080
O	5	10.5	Kewazinga Bubinga	81,600	81,600
O	5	10.5	Santos Rosewood	89,400	89,400
O	5	10.5	East Indian Rosewood	90,800	90,800
O	5	10.5	African Pommele	91,500	91,500
O	5	10.5	Macassar Ebony	100,800	100,660
O	5	10.5	Chinoiserie	84,100	84,100
O	5	10.5	Hepplewhite Dark Cherry	83,400	78,960
O	5	10.5	“John Lennon Imagine” Polished White	98,200	98,200

*See pricing explanation on page 195.

Model	Feet	Inches	Description	MSRP*	SMP*
STEINWAY & SONS (continued)					
A	6	2	Satin Ebony	75,100	73,780
A	6	2	Mahogany	83,100	82,860
A	6	2	Walnut	85,700	84,540
A	6	2	Figured Sapele	89,100	88,200
A	6	2	Dark Cherry	90,400	89,700
A	6	2	Kewazinga Bubinga	92,900	92,440
A	6	2	Santos Rosewood	101,900	101,900
A	6	2	East Indian Rosewood	103,400	103,400
A	6	2	African Pommele	104,200	104,200
A	6	2	Macassar Ebony	114,600	113,540
A	6	2	Chinoiserie	97,100	97,100
A	6	2	"William Steinway Limited Edition" Satin Ebony	93,900	93,900
A	6	2	"John Lennon Imagine" Polished White	110,100	110,100
B	6	10.5	Satin Ebony	84,900	82,700
B	6	10.5	Mahogany	93,600	92,640
B	6	10.5	Walnut	96,400	94,720
B	6	10.5	Figured Sapele	100,300	98,940
B	6	10.5	Dark Cherry	101,700	100,780
B	6	10.5	Kewazinga Bubinga	104,700	103,640
B	6	10.5	Santos Rosewood	114,700	114,700
B	6	10.5	East Indian Rosewood	116,500	116,480
B	6	10.5	African Pommele	117,500	116,940
B	6	10.5	Macassar Ebony	128,500	127,040
B	6	10.5	Chinoiserie	106,700	106,700
B	6	10.5	Hepplewhite Dark Cherry	107,500	104,560
B	6	10.5	"William Steinway Limited Edition" Satin Ebony	108,900	108,900
B	6	10.5	"John Lennon Imagine" Polished White	124,200	122,700
D	8	11.75	Satin Ebony	130,800	125,740
D	8	11.75	Mahogany	145,800	136,780
D	8	11.75	Walnut	149,300	139,020
D	8	11.75	Figured Sapele	157,100	145,200
D	8	11.75	Dark Cherry	161,100	148,020
D	8	11.75	Kewazinga Bubinga	163,500	151,080
D	8	11.75	Santos Rosewood	179,100	167,800
D	8	11.75	East Indian Rosewood	181,500	169,320
D	8	11.75	African Pommele	183,000	169,800
D	8	11.75	Macassar Ebony	200,100	185,240
D	8	11.75	Chinoiserie	156,300	155,400
D	8	11.75	Hepplewhite Dark Cherry	167,900	153,740
D	8	11.75	"John Lennon Imagine" Polished White	180,100	175,300

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	71,800	71,800
M-170	5	7	Polished Ebony	78,700	78,700
O-180	5	10.5	Polished Ebony	83,500	83,500
A-188	6	2	Polished Ebony	89,100	89,100
B-211	6	11	Polished Ebony	103,800	103,800
C-227	7	5.5	Polished Ebony	121,900	121,900
D-274	8	11.75	Polished Ebony	156,100	156,100

*See pricing explanation on page 195.

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	5,195	5,190
H6		44	Continental Polished Mahogany	5,195	5,190
H6		44	"Huntington" Satin Lacquer Oak/Mahogany	5,795	5,790
H6		44	"Calais" Satin Lacquer Cherry	5,795	5,790
H7		46	"Academy" Satin Lacquer or Polished Ebony	6,095	6,095
H7		46	"Academy" Satin Lacquer Oak	6,095	6,095
H8		48	"Deluxe" Polished Ebony/Mahogany/Walnut	5,595	5,390
H8		48	"Deluxe" Queen Anne Polished Ebony/Mahogany/Walnut	5,595	5,595
H9		51	"Artist" Polished Ebony/Mahogany/Walnut	7,195	6,790
Signature Series Verticals					
S7		46	"Cosmopolitan" Hybrid Polished Ebony	4,995	4,995
S8		48	"Cosmopolitan" Polished Ebony	7,195	6,930
Heritage Series Grands					
H50	4	9	"Prelude" Polished Ebony	10,995	9,590
H50	4	9	"Prelude" Polished Mahogany	10,995	9,990
H60	5	1	"Academy" Satin Ebony	11,895	10,790
H60	5	1	"Academy" Polished Ebony	11,895	10,390
H60	5	1	"Academy" Polished Mahogany	11,895	10,790
H60	5	1	"Academy" Polished White	11,895	10,790
H60 QA	5	1	French Provincial Polished Ebony	13,695	11,790
H60 QA	5	1	French Provincial Satin and Polished Mahogany	13,695	12,390
H70	5	7	"Artist" Conservatory Polished Ebony	12,595	10,990
H70	5	7	"Artist Conservatory" Polished Mahogany	12,595	11,390
H80	6	1	"Artist Professional" Polished Ebony	17,495	15,590
H90	6	8	"Artist Semi-Concert" Polished Ebony	25,395	21,590
Signature Series Grands					
S500	4	11	"Manhattan" Semigloss Ebony w/Birdseye Maple Accents	19,595	17,790
S500	4	11	"Manhattan" Semigloss Teak w/Birdseye Maple Accents	19,595	17,790
S600	5	4	"Cosmopolitan" Polished Ebony	21,595	17,190
S600	5	4	"Melrose" Polished Ebony/Mahogany	21,595	19,390
S600	5	4	"Park West" Satin Ebony	21,595	16,590
S600	5	4	"Park West" Polished Ebony	21,595	17,390
S700	5	9	"Fairfax" Polished Ebony	21,095	19,190
S700	5	9	"Versailles" Satin Lacquer Cherry	21,095	18,990
S700	5	9	"Versailles" Satin Antique Ivory	21,095	19,590
S700	5	9	"Park West" Polished Ebony	21,095	17,590
S800	6	2	"Islander" British Colonial Satin Walnut	22,295	20,190
S800	6	2	"Park West" Polished Ebony	22,295	18,190
S900	7		"Park West" Satin Ebony	24,495	24,495

SUZUKI

The models and prices shown are those listed on Suzuki's website or on Costco.com, through which the pianos are sold.

Verticals

AU-8		48	Polished Ebony	3,500	3,500
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Grands

GR-51	5	1	Polished Ebony	7,000	7,000
GR-57	5	7	Polished Ebony	7,900	7,900

*See pricing explanation on page 195.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
TAYLOR LONDON					
Verticals					
TU 110	44		Satin Ebony	5,390	4,590
TU 110	44		Polished Ebony	5,090	4,390
TU 110	44		Satin and Polished Mahogany/Walnut	5,390	4,590
TU 123	48		Satin Ebony	6,290	5,190
TU 123	48		Polished Ebony	5,990	4,990
TU 123	48		Satin and Polished Mahogany/Walnut	6,290	5,190
TU 133	52		Satin Ebony	7,790	6,190
TU 133	52		Polished Ebony	7,490	5,990
TU 133	52		Polished Mahogany/Walnut	7,790	6,190
Grands					
TG 145	4	9	Satin Ebony	12,890	9,590
TG 145	4	9	Polished Ebony	11,990	8,990
TG 145	4	9	Satin and Polished Mahogany/Walnut	12,890	9,590
TG 145	4	9	Chippendale	14,250	10,500
TG 166	5	5	Satin Ebony	14,090	10,390
TG 166	5	5	Polished Ebony	13,490	9,990
TG 166	5	5	Satin and Polished Mahogany/Walnut	14,090	10,390
TG 166	5	5	Chippendale	15,890	11,590
TG 185	6	1	Satin Ebony	19,990	14,327
TG 185	6	1	Polished Ebony	19,109	13,739
TG 185	6	1	Polished Mahogany/Walnut	19,990	14,327

VOGEL

Verticals

V 115	45		Tradition Polished Ebony	13,725	11,980
V 115	45		Tradition Polished Mahogany/White	14,975	12,980
V 115	45		Modern Polished Ebony	13,725	11,980
V 121	48		Tradition Polished Ebony	15,475	13,380

Grands

V 180	6		Tradition Polished Ebony	30,975	25,780
V 180	6		Tradition Polished Mahogany/White	33,475	27,780
V 180	6		Tradition Polished Mahogany Drapée Intarsie Liaison	44,725	36,780
V 180	6		Chippendale Polished Ebony	34,475	28,580
V 180	6		Chippendale Polished Mahogany/White	36,975	30,580
V 180	6		“Royal” Polished Ebony	35,225	29,180
V 180	6		“Royal” Polished Mahogany/White	37,725	31,180
V 180	6		“Royal” Polished Mahogany Drapée Intarsie Oval	44,725	36,780
V 180	6		Royal Marketerie” Polished Flame Khaya Mahogany Coffin	44,725	36,780

Vose & Sons — see Everett

*See pricing explanation on page 195.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
WALTER, CHARLES R.					
Verticals					
1520	43		Satin Ebony	13,169	11,974
1520	43		Semi-Gloss Ebony	13,289	12,074
1520	43		Polished Ebony	13,409	12,174
1520	43		Satin and Polished Walnut	12,784	11,654
1520	43		Satin and Polished Cherry	12,748	11,624
1520	43		Satin and Polished Oak	12,352	11,294
1520	43		Satin and Polished Mahogany	13,000	11,834
1520	43		Italian Provincial Satin Ebony	13,169	11,974
1520	43		Italian Provincial Semi-Gloss Ebony	13,289	12,074
1520	43		Italian Provincial Polished Ebony	13,409	12,174
1520	43		Italian Provincial Satin and Polished Walnut	12,809	11,674
1520	43		Italian Provincial Satin and Polished Mahogany	13,025	11,854
1520	43		Italian Provincial Satin and Polished Oak	12,365	11,304
1520	43		Country Classic Satin and Polished Cherry	12,640	11,534
1520	43		Country Classic Satin and Polished Oak	12,427	11,356
1520	43		French Provincial Satin and Polished Oak	12,809	11,674
1520	43		French Provincial Satin and Polished Cherry/Walnut/Mahogany	13,166	11,972
1520	43		Riviera Satin and Polished Oak	12,320	11,266
1520	43		Queen Anne Satin and Polished Oak	12,905	11,754
1520	43		Queen Anne Satin and Polished Mahogany/Cherry	13,167	11,972
1500	45		Satin Ebony	11,950	10,956
1500	45		Semi-Gloss Ebony	12,160	11,134
1500	45		Polished Ebony (Lacquer)	12,292	11,244
1500	45		Polished Ebony (Polyester)	12,532	11,444
1500	45		Satin and Polished Oak	11,400	10,506
1500	45		Satin and Polished Walnut	12,070	11,056
1500	45		Satin and Polished Mahogany	12,235	11,196
1500	45		Gothic Satin and Polished Oak	12,080	11,066
1500	45		Satin and Polished Cherry	12,196	11,164
Verticals			Chinese-made action instead of Renner, less	1,560	1,300
Grands					
W-175	5	9	Satin Ebony	50,760	43,300
W-175	5	9	Semi-Polished and Polished Ebony (Lacquer)	52,080	44,400
W-175	5	9	Polished Ebony (Polyester)	52,800	45,000
W-175	5	9	Satin Mahogany/Walnut/Cherry	53,064	45,220
W-175	5	9	Semi-Polished and Polished Mahogany/Walnut/Cherry	54,432	46,360
W-175	5	9	Open-Pore Walnut	51,768	44,140
W-175	5	9	Chippendale Satin Mahogany/Cherry	54,720	46,600
W-175	5	9	Chippendale Semi-Polished and Polished Mahogany/Cherry	56,064	47,720
W-190	6	4	Satin Ebony	52,104	44,420
W-190	6	4	Semi-Polished and Polished Ebony (Lacquer)	53,433	45,528
W-190	6	4	Polished Ebony (Polyester)	54,153	46,128
W-190	6	4	Satin Mahogany/Walnut/Cherry	54,403	46,336
W-190	6	4	Semi-Polished & Polished Mahogany/Walnut/Cherry	55,771	47,476
W-190	6	4	Open-Pore Walnut	53,112	45,260
W-190	6	4	Satin Oak	50,104	42,754
W-190	6	4	Chippendale Satin Mahogany/Cherry	56,092	47,744
W-190	6	4	Chippendale Semi-Polished and Polished Mahogany/Cherry	57,408	48,840

*See pricing explanation on page 195.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
WEBER					
Traditional/Legend Series Verticals					
W112	44		Continental Satin Ebony	4,554	4,308
W112	44		Continental Polished Ebony	4,324	4,178
W112	44		Continental Polished Mahogany/White	4,554	4,308
W112F	44		French Provincial Satin Cherry	4,784	4,518
W112F	44		Satin Mahogany	4,784	4,518
W114	45		Satin Ebony	5,014	4,650
W114	45		Polished Ebony	4,784	4,480
W114	45		Polished Mahogany/White	5,014	4,650
W116	46.5		Satin Ebony/Oak	5,474	5,338
W121	48		Satin Ebony	5,474	5,338
W121	48		Polished Ebony	5,244	5,166
W121	48		Polished Mahogany	5,474	5,338
W121N	48		Polished Ebony	5,394	5,370
W131	52		Satin Ebony	5,934	5,758
W131	52		Polished Ebony	5,704	5,594
W131	52		Polished Mahogany	5,934	5,758
Sovereign Series Verticals					
WSF 44	44		French Provincial Satin Cherry	8,239	7,046
WSF 44	44		Mediterranean Satin Oak	8,009	6,878
WSF 44	44		Satin Mahogany	8,009	6,878
WSF 44	44		Queen Anne Satin Cherry/Oak	8,469	7,214
WSE 46	46		Satin Ebony	7,549	7,078
WSE 46	46		Satin Oak/Walnut/Cherry	7,779	7,262
WSE 47	47		Satin and Polished Ebony	7,549	7,078
WSE 47	47		Polished Mahogany	7,779	7,262
WSE 48	48		Satin and Polished Ebony	7,779	7,262
WSE 48	48		Polished Mahogany	8,009	7,446
WSE 52	52		Satin and Polished Ebony	8,929	8,186
Albert Weber Verticals					
AW 48	48		Polished Ebony	9,159	8,370
AW 48	48		Satin Mahogany	9,619	8,740
AW 48	48		Satin Cherry/Bubinga/Rosewood	9,849	8,926
AW49	49		Satin Mahogany	10,539	9,444
AW 52	52		Polished Ebony	11,459	10,218
AW 52	52		Satin Bubinga/Rosewood	12,149	10,774
Traditional/Legend Series Grands					
W150	4	11	Satin Ebony	10,902	8,728
W150	4	11	Polished Ebony	10,672	8,514
W150	4	11	Polished Mahogany/Walnut/White	10,902	8,728
W157	5	2	Satin Ebony	12,144	9,544
W157	5	2	Polished Ebony	11,914	9,168
W157	5	2	Polished Mahogany/Walnut/White	12,259	9,544
W175	5	9	Satin Ebony	13,869	10,916
W175	5	9	Polished Ebony	13,294	10,470
W175	5	9	Polished Mahogany/Walnut/White	13,869	10,916
W185	6	1	Satin Ebony	16,054	13,284
W185	6	1	Polished Ebony	15,364	12,818
W185	6	1	Polished Mahogany/Walnut/White	16,054	13,284
Sovereign Series Grands					
WSG 50	4	11	Satin Ebony	15,824	12,584
WSG 50	4	11	Polished Ebony	15,511	12,290
WSG 50	4	11	Polished Mahogany	16,284	12,780
WSG 50	4	11	Satin and Polished Walnut	16,284	12,780
WSG 50	4	11	Queen Anne Satin Cherry	17,894	13,942

*See pricing explanation on page 195.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
WEBER (continued)					
WSG 50	4	11	Queen Anne Polished Mahogany	17,894	13,942
WSG 51	5	2	Satin Ebony	18,129	14,270
WSG 51	5	2	Polished Ebony	17,899	14,102
WSG 51	5	2	Polished Mahogany/Walnut	18,589	14,606
WSG 51	5	2	Satin Walnut	18,819	14,774
WSG 51	5	2	Satin Cherry	18,589	14,606
WSG 51	5	2	Polished Ivory	18,129	14,270
WSG 51D	5	2	Queen Anne Satin Mahogany	22,269	17,294
WSG 51D	5	2	Queen Anne or Country French Satin Cherry	22,499	17,462
WSG 57	5	9	Satin and Polished Ebony	19,279	15,110
WSG 57	5	9	Polished Mahogany/Walnut	19,969	15,614
WSG 57	5	9	Satin Walnut	19,969	15,614
WSG 57	5	9	Polished Ivory	19,509	15,278
WSG 60	6	1	Satin and Polished Ebony	21,119	15,866
WSG 60	6	1	Polished Mahogany/Walnut	22,269	16,076
WSG 60	6	1	Satin Walnut	22,499	16,076
WSG 60	6	1	Polished Ivory	21,349	16,076

Albert Weber Grands

AW51	5	1	Satin Ebony	21,114	17,908
AW51	5	1	Polished Ebony	20,884	17,648
AW51	5	1	Satin and Polished Mahogany	21,344	18,088
AW 57	5	9	Satin Ebony	26,179	22,882
AW 57	5	9	Polished Ebony	25,949	22,688
AW 57	5	9	Polished Ebony with Pommele Accents	26,639	23,266
AW 57	5	9	Polished Mahogany/Bubinga	26,639	23,266
AW 57	5	9	Satin Cherry	26,639	23,266
AW 60	6	1	Satin Ebony	27,789	24,226
AW 60	6	1	Polished Ebony	27,559	24,034
AW 60	6	1	Polished Ebony with Pommele Accents	28,479	24,804
AW 60	6	1	Polished Mahogany	28,479	24,804
AW 60	6	1	Polished Pommele	32,159	27,878
AW 60	6	1	Polished Bubinga	30,779	26,724
AW 60	6	1	Satin Cherry	28,479	24,804
AW 69	6	10	Satin Ebony	33,148	28,706
AW 69	6	10	Polished Ebony	33,079	28,646
AW 69	6	10	Polished Pommele/Bubinga	40,439	34,798
AW 76	7	6	Satin Ebony	46,189	39,602
AW 76	7	6	Polished Ebony	45,959	39,408
AW 76	7	6	Polished Bubinga/Pommele	46,189	39,602
AW 90	9		Polished Ebony	92,115	74,700

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
WV115	45		Polished Ebony	5,263	4,225
WV115	45		Polished Mahogany/Cherry	5,325	4,281
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

*See pricing explanation on page 195.

Model	Feet	Inches	Description	MSRP*	SMP*
WYMAN (continued)					
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
WG170	5	7	Polished Ebony	14,950	10,813
WG170	5	7	Polished Mahogany	15,475	11,233
WG185	6	1	Polished Ebony	17,588	12,825
WG185	6	1	Polished Mahogany	18,125	13,250
All models			Satin Finishes, add'l		300

YAMAHA

Including Disklavier and Silent Piano

Verticals

M460	44		Satin Cherry/Brown Cherry	5,999	5,998
M560	44		Hancock Satin Brown Cherry	6,599	6,598
M560	44		Sheraton Satin Mahogany	6,599	6,598
M560	44		Queen Anne Satin Cherry	6,599	6,598
P22	45		Satin Ebony/Walnut/Oak/Cherry	5,999	5,999
P660	45		Sheraton Satin Brown Mahogany	7,999	7,798
P660	45		Queen Anne Satin Brown Cherry	7,999	7,798
T118	47		Satin Ebony	5,999	5,999
T118	47		Polished Ebony	5,499	5,499
T118	47		Polished Mahogany/Walnut	5,999	5,999
T121SC	48		Polished Ebony	6,499	6,499
U1	48		Satin and Polished Ebony	9,999	9,998
U1	48		Satin American Walnut	11,999	10,998
U1	48		Open-Pore American Walnut	11,999	10,998
U1	48		Polished American Walnut/Mahogany	12,999	12,398
U1	48		Polished White	12,999	12,798
YUS1	48		Satin and Polished Ebony	13,999	12,998
YUS1	48		Satin American Walnut	14,999	14,198
YUS1	48		Polished American Walnut/Mahogany	17,499	16,398
YUS1	48		Polished White	17,499	16,398
U3	52		Polished Ebony	13,499	12,198
U3	52		Satin American Walnut	13,999	12,598
U3	52		Polished Mahogany	15,999	14,598
YUS3	52		Polished Ebony	15,999	15,398
YUS3	52		Polished Mahogany	19,999	17,998
YUS5	52		Polished Ebony	18,999	16,998

Disklavier Verticals

DU1E3	48		Polished Ebony	25,999	22,998
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Silent Verticals

U1SG	48		Polished Ebony	14,999	13,998
YUS1SG	48		Polished Ebony	17,999	16,398
U3SG	52		Polished Ebony	19,999	17,998
YUS3SG	52		Polished Ebony	21,999	18,998
YUS5SG	52		Polished Ebony	24,999	20,998

Grands

GB1K	5		Polished Ebony	13,499	12,598
GB1K	5		Polished American Walnut/Mahogany	15,999	14,998
GB1K	5		French Provincial Satin Cherry	17,499	16,398
GB1K	5		Georgian Satin Mahogany	16,999	15,998
GC1M	5	3	Satin and Polished Ebony	21,499	20,198

*See pricing explanation on page 195.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
YAMAHA (continued)					
GC1M	5	3	Satin American Walnut	26,999	24,998
GC1M	5	3	Polished Mahogany	26,999	24,998
GC1M	5	3	Polished American Walnut	27,999	25,598
GC1M	5	3	Polished Ivory/White	24,999	23,198
C1	5	3	Satin and Polished Ebony	30,999	26,398
C1	5	3	Satin American Walnut	35,999	30,998
C1	5	3	Polished American Walnut	37,499	34,998
C1	5	3	Satin and Polished Mahogany	35,999	30,998
C1	5	3	Polished White	35,999	32,998
GC2	5	8	Satin and Polished Ebony	24,999	22,998
GC2	5	8	Satin American Walnut	29,999	26,998
GC2	5	8	Polished American Walnut	31,999	28,998
GC2	5	8	Satin Mahogany	31,499	28,598
GC2	5	8	Polished Mahogany	29,999	26,998
GC2	5	8	Polished Ivory/White	28,999	25,998
C2	5	8	Satin and Polished Ebony	34,999	29,998
C2	5	8	Satin American Walnut	38,999	34,998
C2	5	8	Polished American Walnut	39,999	36,998
C2	5	8	Polished Mahogany	38,999	34,998
C2	5	8	Satin Light American Oak	38,999	32,998
C2	5	8	Polished White	38,999	32,998
C3	6	1	Satin and Polished Ebony	45,499	39,998
C3	6	1	Satin American Walnut	51,999	47,598
C3	6	1	Polished Mahogany/American Walnut	51,999	47,598
C3	6	1	Polished White	51,999	47,598
S4BB	6	3	Polished Ebony	64,999	60,998
CF4	6	3	Polished Ebony	84,999	84,398
C5	6	7	Satin and Polished Ebony	49,999	42,998
C5	6	7	Polished Mahogany	57,999	50,998
C6	7		Satin and Polished Ebony	55,999	47,998
C6	7		Polished Mahogany	63,999	55,998
S6BB	7		Polished Ebony	79,999	70,998
CF6	7		Polished Ebony	99,999	94,998
C7	7	6	Satin and Polished Ebony	64,999	54,998
C7	7	6	Polished Mahogany	73,999	62,998
CFX	9		Polished Ebony	149,999	140,998
Disklavier Grands					
DGB1KE3	5		Polished Ebony	25,999	20,998
DGB1KE3	5		Polished Mahogany/American Walnut	29,999	26,998
DGC1ME3	5	3	Polished Ebony	35,999	30,998
DGC1ME3	5	3	Satin American Walnut	39,999	36,998
DGC1ME3	5	3	Polished Mahogany/American Walnut	39,999	36,998
DGC1MM4	5	3	Satin and Polished Ebony	49,999	40,998
DGC1MM4	5	3	Satin American Walnut	54,999	44,998
DGC1MM4	5	3	Polished American Walnut/Mahogany	54,999	44,998
DGC1MM4	5	3	Polished Ivory/White	54,999	44,998
DC1E3	5	3	Polished Ebony	42,999	38,998
DC1E3	5	3	Polished American Walnut/Mahogany	50,999	42,998
DC1M4	5	3	Satin and Polished Ebony	57,999	46,998
DC1M4	5	3	Satin and Polished American Walnut	61,999	50,998
DC1M4	5	3	Satin and Polished Mahogany	61,999	50,998
DC1M4	5	3	Polished White	61,999	50,998
DGC2E3	5	8	Polished Ebony	39,999	36,998
DGC2E3	5	8	Polished Mahogany/American Walnut	47,999	40,998
DC2E3	5	8	Polished Ebony	44,999	40,998
DC2E3	5	8	Polished Mahogany/American Walnut	52,999	44,998
DC2M4	5	8	Satin and Polished Ebony	63,999	52,998

*See pricing explanation on page 195.

Model	Feet	Inches	Description	MSRP*	SMP*
YAMAHA (continued)					
DC2M4	5	8	Satin American Walnut/Mahogany	67,999	56,998
DC2M4	5	8	Polished American Walnut/Mahogany	67,999	56,998
DC2M4	5	8	Polished White	67,999	56,998
DC3M4	6	1	Satin and Polished Ebony	76,999	62,998
DC3M4	6	1	Satin American Walnut	82,999	68,998
DC3M4	6	1	Polished American Walnut/Mahogany	82,999	68,998
DC3M4	6	1	Polished White	82,999	68,998
DC5M4	6	7	Satin and Polished Ebony	82,999	68,998
DC5M4	6	7	Polished Mahogany	89,999	74,998
DC6M4	7		Polished Ebony	87,999	72,998
DC6M4	7		Polished Mahogany	95,999	78,998
DC7M4	7	6	Polished Ebony	95,999	78,998
DC7M4	7	6	Polished Mahogany	99,999	84,998
DC7M4	7	6	Polished White	99,999	84,998

Disklavier Pro Grands

DC3M4PRO	6	1	Polished Ebony	79,999	66,998
DC5M4PRO	6	7	Polished Ebony	87,999	72,998
DC6M4PRO	7		Polished Ebony	92,999	76,998
DC7M4PRO	7	6	Polished Ebony	97,999	82,998
DCFX	9		Polished Ebony	224,999	180,998

Silent Grands

GB1KS	5		Polished Ebony	27,999	17,798
C1SG	5	3	Polished Ebony	35,999	30,998
C2SG	5	8	Polished Ebony	37,999	32,998
C3SG	6	1	Polished Ebony	49,999	42,998
C5SG	6	7	Polished Ebony	53,999	46,998
C6SG	7		Polished Ebony	58,999	50,998
C7SG	7	6	Polished Ebony	66,999	56,998

YOUNG CHANG

Traditional Series Verticals

Y112	44		Continental Satin Ebony	4,324	4,214
Y112	44		Continental Polished Ebony	4,094	4,088
Y112	44		Continental Polished Mahogany/White	4,324	4,214
Y112F	44		French Provincial Satin Cherry	4,554	4,418
Y112F	44		Satin Mahogany	4,554	4,418
Y114	45		Polished Ebony	4,554	4,382
Y114	45		Polished Mahogany/White	4,784	4,546
Y114E	45		Polished Ebony w/Chrome	4,704	4,546
Y116	46.5		Satin Ebony/Oak	5,244	5,214
Y121	48		Satin Ebony	5,244	5,214
Y121	48		Polished Ebony	5,014	5,048
Y121	48		Polished Mahogany	5,244	5,214
Y131	52		Polished Ebony	5,474	5,462
Y131	52		Polished Mahogany	5,704	5,622

Professional Artist Series Verticals

PF-110	43.5		Satin Mahogany	8,009	6,878
PF-110	43.5		French Provincial Satin Cherry	8,239	7,046
PF-110	43.5		Mediterranean Satin Oak	8,009	6,878
PF-110	43.5		Queen Anne Satin Cherry/Oak	8,469	7,214
PE-116	46.5		Satin Ebony	7,549	7,078
PE-116	46.5		Polished Ebony	7,319	6,868
PE-116	46.5		Satin Oak/Walnut/Cherry	7,779	7,262
PF-116	46.5		Satin Mahogany	9,159	7,716
PF-116	46.5		Mediterranean Satin Oak	9,159	7,716

*See pricing explanation on page 195.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
YOUNG CHANG (continued)					
PE-118	47		Satin Ebony	7,779	7,262
PE-118	47		Polished Ebony	7,549	7,078
PE-118	47		Polished Mahogany	7,779	7,262
PE-121	48		Satin Ebony	8,009	7,446
PE-121	48		Polished Ebony	7,779	7,262
PE-121	48		Polished Mahogany	8,009	7,446
PE-131	52		Satin Ebony	9,159	8,340
PE-131	52		Polished Ebony	8,929	8,186
Platinum Edition Verticals					
YP-48	48		Polished Ebony	9,154	8,370
YP-48	48		Satin Mahogany	9,619	8,740
YP-48	48		Satin Bubinga/Rosewood/Cherry	9,849	8,926
YP-121	48		Polished Ebony	7,544	7,048
YP-121	48		Polished Ebony w/Pommele Accents	10,079	8,390
YP-121	48		Polished Mahogany	8,234	7,600
YP-49	49		Polished Ebony	10,539	9,480
YP-49	49		Satin Mahogany	10,539	9,480
YP-52	52		Polished Ebony	11,459	10,218
YP-52	52		Satin Bubinga/Rosewood	12,149	10,774
Traditional Series Grands					
Y150	4	11	Satin Ebony	10,672	8,510
Y150	4	11	Polished Ebony	10,442	8,300
Y150	4	11	Polished Mahogany/Walnut/White	10,672	8,510
Y150E	4	11	Polished Ebony w/Chrome	11,374	8,932
Y157	5	2	Polished Ebony	11,684	8,936
Y157	5	2	Polished Mahogany/Walnut/White	12,144	9,146
Y175	5	9	Polished Ebony	13,064	10,288
Y175	5	9	Polished Mahogany/Walnut/White	13,639	10,744
Y185	6	1	Satin Ebony	15,824	13,298
Y185	6	1	Polished Ebony	15,134	12,712
Y185	6	1	Polished Mahogany/Walnut/White	15,824	13,298
Professional Artist Series Grands					
PG-150	4	11	Polished Ebony	15,511	12,290
PG-150	4	11	Polished Walnut	16,284	12,780
PG-150	4	11	Polished Ivory	15,511	12,290
PG-150	4	11	Queen Anne Polished Mahogany/Ivory	17,894	13,942
PG-150	4	11	Queen Anne Satin Cherry	17,894	13,942
PG-157	5	2	Satin Ebony	18,129	14,270
PG-157	5	2	Polished Ebony	17,899	14,102
PG-157	5	2	Polished Mahogany/Walnut	18,589	14,606
PG-157	5	2	Satin Walnut/Cherry	18,819	14,772
PG-157	5	2	Polished Ivory	18,129	14,270
PG-157	5	2	Country French Satin Cherry	18,819	14,772
PG-157D	5	2	Queen Anne Satin Mahogany	22,269	17,294
PG-157D	5	2	Queen Anne and Country French Satin Cherry	22,499	17,462
PG-175	5	9	Satin and Polished Ebony	19,279	15,110
PG-175	5	9	Polished Mahogany/Walnut	19,969	15,614
PG-175	5	9	Polished Ivory	19,509	15,278
PG-175	5	9	Satin Cherry	19,969	15,614
PG-175NCS	5	9	Antique Satin Cherry	22,020	17,112
PG-185	6	1	Satin and Polished Ebony	21,119	15,866
PG-185	6	1	Polished Mahogany/Walnut	22,269	16,076
PG-185	6	1	Satin Walnut	22,499	16,076
PG-185	6	1	Polished Ivory	21,349	16,076

*See pricing explanation on page 195.

<i>Model</i>	<i>Feet</i>	<i>Inches</i>	<i>Description</i>	<i>MSRP*</i>	<i>SMP*</i>
YOUNG CHANG (continued)					
Platinum Edition Grands					
YP-157	5	2	Satin Ebony	21,344	18,088
YP-157	5	2	Polished Ebony	21,114	17,904
YP-157	5	2	Polished Mahogany	21,804	18,364
YP-175	5	9	Satin Ebony	26,179	22,046
YP-175	5	9	Polished Ebony	25,949	21,862
YP-175	5	9	Polished Ebony w/Pommele Accents	26,639	22,416
YP-175	5	9	Polished Mahogany	26,639	22,416
YP-185	6	1	Satin Ebony	27,789	23,340
YP-185	6	1	Polished Ebony	27,559	23,154
YP-185	6	1	Polished Ebony w/Pommele Accents	28,479	23,894
YP-185	6	1	Polished Mahogany	28,479	23,796
YP-185	6	1	Satin Cherry	30,779	25,636
YP-185	6	1	Polished Bubinga	30,779	25,742
YP-185	6	1	Polished Pommele	32,159	26,850
YP-208	6	10	Satin Ebony	33,148	27,646
YP-208	6	10	Polished Ebony	33,079	27,590
YP-208	6	10	Polished Bubinga	39,979	32,996
YP-208	6	10	Polished Pommele	40,439	33,504
YP-228	7	6	Satin Ebony	46,189	38,124
YP-228	7	6	Polished Ebony	45,959	37,938
YP-275	9		Polished Ebony	80,615	65,500

*See pricing explanation on page 195.

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	1,444
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
ussupport@kaysound.com
www.adagiopianos.com

Adagio is a division of Kaysound, a Canadian-based distributor of music products. There are six models of Adagio digitals, including verticals, grands, and ensembles. Kaysound also sells 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. Four models are available: two grands, two verticals.

Bellissimo

See Symphony

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, has entered the digital piano market with six models of vertical piano.

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 four 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 13 models in the Galileo line, including one slab, five 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.

Galileo also makes digital pianos under the brand names Princeton and Viscount.

Kaino

See Omega

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.

After 50 years as a piano builder, Kawai entered the market with its first digital piano in 1985. Today, Kawai's lineup for North America features 18 models, many of them new. Kawai's digital piano line comprises four groups: the Concert Performer (CP) ensemble pianos; the standard digital piano line, consisting of the Concert Artist (CA), Classic Series (CS), CL, and CN models; the ES and EP portable instruments; and Professional Products, including the CE200 and MP series.

Kawai created the first digital piano to use a transducer-driven soundboard for a more natural piano sound, a feature that is available on the flagship CA93. The CP ensemble models have undergone a complete makeover, with all models now sporting touchscreen technology and USB audio. 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. The two newest ones—the Responsive Hammer (RH) and top-of-the-line Realistic Material, Realistic Mechanism, Realistic Motion (RM3) actions—can be found in the CN, CA, CP, CS, and MP piano models. The RM3 action has wood keys, Ivory Touch (simulated ivory) keytops, and, on the MP10, CA93, CS6, CP209, and CP179 models, simulated escapement.

Kawai has initiated on its website an online store that allows customers to purchase certain models of digital piano formerly 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 five 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 SGI, was introduced in 1986. Korg now offers seven models of digital piano, including the new entry-level model SP-170 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 new X-PRO series, which includes a vertical and a mini-grand, and the new MP series, are based on Kurzweil's powerful PC3X professional keyboard. Most Kurzweil products are now available through a combination of musical instrument dealers, piano dealers, and online sources. Most 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.

Nord

American Music & Sound
22020 Clarendon Street, Suite 305
Woodland Hills, California 91367
800-431-2609
nord@americanmusicandsound.com
www.americamusicandsound.com
www.nordkeyboards.com

The Nord Piano 88 is a professional stage piano that comes loaded with 19 different piano and harpsichord sounds, and 120 programs that combine the instrumental sounds with effects. Additional sounds come with the instrument on a DVD or can be downloaded from the Nord Piano website and transferred to the instrument via USB. Nord Keyboards are made in Sweden by Clavia DMI AB.

Omega

Piano Empire, Inc.
13370 East Firestone Blvd., Suite A
Santa Fe Springs, California 90670
800-576-3463
562-926-1906
info@omegapianos.com
www.omegapianos.com

Omega is the brand name used in the U.S. for Kaino digital pianos. Kaino, located in Guangzhou, China, began making portable keyboards in 1986, and digital pianos in 1997.

Princeton

See Galileo

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 postwar 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 more than two dozen 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 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 HP models 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
www.smcmusic.com

Samick is in the process of expanding its presence in the digital piano market. Its line consists of four grands and three verticals marketed under the Kohler brand, and three grands and nine verticals under the Samick label. Samick/Kohler tends to offer more finish options than many other brands. The Kohler KDI65 grand is the only digital available with curved French Provincial-style legs.

Suzuki

Suzuki Corporation
P.O. Box 710459
Santee, California 92072
800-854-1594
www.suzukimusic.com

Suzuki sells its line of digital pianos on its website and through Costco. Models change frequently.

Symphony

Symphony Pianos
90-02 Atlantic Avenue
Ozone Park, New York 11416
718-322-0737
dbrandi@symphonypiano.com
www.symphonypiano.com

Symphony digitals are manufactured by Zhejiang Youyi Electronic Co. Ltd., one of China's larger digital piano makers, located in Zhejiang Province, China. A similar line of digital pianos appears to be distributed in Canada under the Bellissimo label.

Viscount

See Galileo

Williams

Williams Pianos
P.O. Box 5111
Thousand Oaks, California 91359
www.williamspianos.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 five models from Williams, including three verticals, one slab with an optional stand, and one grand. These are entry-level instruments with light-weighted actions.

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 three dozen or so 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. The new CLPS400 models sport a more traditional vertical-piano look while retaining the advantage of a small footprint. The Modus models (model numbers beginning with F, H, and R), 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 (model numbers beginning with YDP) represents Yamaha's economy line of digital verticals, with the long-popular YDP223 now replaced by the YDP181.

Yamaha has introduced physical modeling 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.

Seven 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), Natural Wood Linear Graded Hammer (NW-LGH), 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 physical form (slab, vertical, or grand); within each form, by type (standard digitals, then ensemble digitals); and finally, by price or model number, whichever seems most appropriate. 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
Al	Alder
Bl	Blue
Bk	Black
C	Cherry
DB	Deep Brunette
E	Ebony
G	Gold
Iv	Ivory
M	Mahogany
MD	Mahogany Decor
O	Oak
Or	Orange
P	Polished (used with a wood or color designation)
R	Rosewood
Rd	Red
S	Satin (used with a wood or color designation)
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-8826	V		EP/MP	2,199		128				99	64	60	4	3	
GDP-1500	G	E	EP			128				94	64	60		3	
GDP-8810	G	E	EP			138				100	64	120		3	
Behringer															
EG2180	V		WG-Bk	649	959	14					64	80		3	
EG2280USB	V		WG-Bk	699	1,029	14					64	80		3	
EG8180	G		EP/RdP	1,499	2,209	14					64	80		3	
EG8280USB	G		EP			14					64	80		3	
Brodmann															
BDP 10	V		R	1,271	1,295	8						40	2	3	
BDP 15	V		R/ES	1,362	1,495	8						40	2	3	
BDP 20	V		R/ES	1,507	1,695	16						70	4	3	
BDP 100	V		R/ES/Mpl	1,453	1,895	8						40	4	3	
BDP 150	V		R/ES/Mpl	1,562	1,995	8						40	4	3	
BDP 500	V		EP	1,816	2,495	16						70	4	3	
BDP 500	V		WtP	1,907	2,495	16						70	4	3	
BDP 500	V		WP/EP-WtP	1,998	2,495	16						70	4	3	
Casio															
PX-3	S		Bk	799	1,100	250			Y		128			1(3)	Y
PX-130	S	E	Bk	499	799	16			Y		128	16	2	1(3)	Y
PX-330	S	E	Bk	699	999	250			Y	180	128	16	2	1(3)	Y
PX-830	V	E	ES	999	1,399	16			Y		128	40	2	3	Y
PX-830	V	E	EP	1,299	1,999	16			Y		128	40	2	3	Y
AP-220	V	E	W	799	1,199	16			Y		128	16	2	3	Y
AP-420	V	E	W	1,099	1,499	16			Y		128	40	4	3	Y
AP-620	V	E	ES	1,399	1,799	250			Y	180	128	60	4	3	Y
Galileo															
Milano II	S		R	2,995	3,995	138				100	64	20	2	1	
VP-91	V		WtP	2,495	3,495	11		Y	Y		128	44	2	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>
PDP-100										1	2/2		
KDP-8826											2/2		185
GDP-1500						Y		USB	Y	5	2/2	56x34x35	
GDP-8810						Y		SD	Y	3	2/2	47x54x35	258
EG2180										2	1/1	55x21x35	142
EG2280USB						Y	Y		Y	2	1/1		
EG8180										2	1/1	54x40x33	200
EG8280USB						Y	Y		Y	2	1/1	54x40x33	200
BDP 10									Y	2	1/1	52x11x5	25
BDP 15									Y	2	1/1	57x12x31	90
BDP 20									Y	2	1/1	54x19x34	117
BDP 100									Y	2	1/1	54x18x33	101
BDP 150									Y	2	1/1	52x11x5	25
BDP 500									Y	2	1/1	52x11x5	26
BDP 500									Y	2	1/1	52x11x5	26
BDP 500									Y	2	1/1	52x11x5	26
PX-3	Tri-Sensor							SD	Y		3/3	52x11x5	24
PX-130	Tri-Sensor						Y		Y	2	3/3	52x11x5	25
PX-330	Tri-Sensor						Y	SD	Y	16	3/3	52x11x5	26
PX-830	Tri-Sensor			Y			Y	SD	Y	2	3/3	54x14x35	74
PX-830	Tri-Sensor			Y			Y	SD	Y	2	3/3	54x14x35	74
AP-220	Tri-Sensor						Y		Y	2	3/3	55x17x33	83
AP-420	Tri-Sensor			Y			Y	SD	Y	2	3/3	55x17x33	88
AP-620	Tri-Sensor			Y			Y	SD	Y	17	3/3	55x19x35	126
Milano II	Graded Hammer									3	4/1	56x15x7	54
VP-91	Grand Response										4/1	54X14X6	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
Galileo (continued)															
VP-111	V		R	2,695	3,695	11		Y	Y		128	44	4	3	
VP-121	V		R	3,295	4,295	20		Y	Y		128	100	4	3	
VP-121	V		EP	3,795	4,795	20		Y	Y		128	100	4	3	
Sonata	V		M	4,995	6,495	16					64	180	4	3	
Milano II	V		EP	5,495	6,495	138				100	64	40	4	3	
Milano II	V		R	4,995	5,995	138				100	64	40	4	3	
Milano IIG	G		EP	6,995	7,995	138				100	64	120	4	3	
Aria	G		EP	8,995	10,495	16		Y	Y		64	180	4	3	
Aria	G		MP	9,995	11,495	16		Y	Y		64	180	4	3	
Aria DigiPlay	G		EP	13,995	17,995	16		Y	Y		64	180	4	3	
Aria DigiPlay	G		MP	15,995	19,995	16		Y	Y		64	180	4	3	
Concerto	G		EP	11,995	13,995	16		Y	Y		64	180	4	3	
Concerto	G		MD	15,995	17,995	16		Y	Y		64	180	4	3	
Concerto DigiPlay	G		EP	17,995	21,995	16		Y	Y		64	180	4	3	
Concerto DigiPlay	G		MD	23,995	27,995	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	WtP	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	
Maestro II	G	E	Rd	17,995	19,995	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	
Kawai															
EP3	S			1,099	1,499	21		Y	Y	30	96	26	6	1	Y
MP6	S			1,499	1,799	256	Y	Y	Y		192	0	0	2	Y
MP10	S			2,499	2,999	27	Y	Y	Y		192	0	0	2	Y
ES6	S	E		1,699	2,195	32		Y	Y	100	192	26	6	1 (3)	Y
CL25	V		R	1,099	1,495	8		Y			93	30	2	1	Y
CE200	V		R	1,699	1,999	20		Y	Y	30	96	40	2	3	Y
CN23	V		R	1,799	2,195	15		Y			96	40	2	3	Y
CN33	V		R	2,199	2,795	36		Y	Y		96	40	2	3	Y
CN33	V		M/ES	2,299	2,895	36		Y	Y		96	40	2	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>
VP-111	Grand Response										4/1	54x17x40	119
VP-121	Graded Hammer	Y								1	4/1	54x20x41	138
VP-121	Graded Hammer	Y								1	4/1	54x20x41	138
Sonata	Grand Touch Feeling	Y								2	4/1	54x22x39	234
Milano II	Graded Hammer									3	4/1	56x20x34	154
Milano II	Graded Hammer									3	4/1	56x20x34	154
Milano IIG	Graded Hammer									3	4/1	56x30x35	200
Aria	AGT Pro	Y	Y							2	4/1	54x38x56	315
Aria	AGT Pro	Y	Y						Y	2	4/1	54x38x56	315
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	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 Pro	Y				Y	Y	USB	Y	5	4/1	54x39x35	345
Maestro II	AGT Pro	Y				Y	Y	USB	Y	5	4/1	54x39x35	345
Maestro II	AGT Pro	Y				Y	Y	USB	Y	5	4/1	54x39x35	345
Maestro II	AGT Pro	Y				Y	Y	USB	Y	5	4/1	54x39x35	345
Grande II	AGT Pro	Y				Y	Y	USB	Y	5	4/1	54x48x38	312
EP3	AHA IV-F								Y	2	3/3	55x14x6	46
MP6	RH	Y		Y				USB	Y	1	3/1	53x13x7	45
MP10	RM3	Y	Y	Y				USB	Y	1	3/1	58x18x8	77
ES6	AHA IV-F								Y	2	3/3	55x14x6	46
CL25	AHA IV										3/3	51x11x31	63
CE200	AWA PROII		Y						Y	2	3/3	54x20x35	137
CN23	RH			Y			Y			1	5/5	55x16x34	93
CN33	RH	Y		Y			Y	USB	Y	2	5/5	55x19x35	119
CN33	RH	Y		Y			Y	USB	Y	2	5/5	55x19x35	119

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)															
CN43	V	E	R	2,749	3,395	323		Y	Y	100	192	100	4	3	Y
CN43	V	E	M/ES	2,849	3,495	323		Y	Y	100	192	100	4	3	Y
CA63	V		R	3,173	3,895	60	Y	Y	Y	100	192	100	4	3	Y
CA63	V		M	3,264	3,995	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		ES	4,536	5,745	80	Y	Y	Y	100	192	135	6+SB	3	Y
CS3	V		EP	2,909	3,495	15		Y			96	40	4	3	Y
CS6	V		EP	4,545	5,695	60	Y	Y	Y	100	192	100	4	3	Y
CP119	V	E	R	3,445		700+	Y	Y	Y	183	96	100	2	3	Y
CP119	V	E	M	3,536		700+	Y	Y	Y	183	96	100	2	3	Y
CP139	V	E	R	4,991		900+	Y	Y	Y	306	192	100	4	3	Y
CP139	V	E	M/ES	5,082		900+	Y	Y	Y	306	192	100	4	3	Y
CP179	V	E	CP/EP	8,173		1000+	Y	Y	Y	390	192	100	6	3	Y
CP209	G	E	EP	15,890		1000+	Y	Y	Y	390	192	200	9	3	Y
CP209 CD	G	E	EP	22,950		1000+	Y	Y	Y	390	192	200	9	3	Y
CP209 IQ	G	E	EP	24,750		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	2	
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		Y			60	50	2	3	
KD30	V	E	EP	2,995	2,995	332		Y		128	64	80	4	3	
KD60	V	E	EP	4,995	4,995	332		Y		304	62	360	5	3	
KD7	G		EP/MP	7,907	8,499	30		Y			60	360	6	3	
KD150	G	E	EP	5,995	5,995	660		Y		304	62	360	5	3	
KD150	G	E	MP	6,498	6,995	660		Y		304	62	360	5	3	
KD160	G	E	EP	6,495	6,495	660		Y		304	62	360	5	3	
KD160	G	E	MP	6,995	6,995	660		Y		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>
CN43	RH	Y		Y			Y	USB	Y	16	5/5	55x19x35	125
CN43	RH	Y		Y			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
CS3	RH	Y		Y			Y			1	5/5	55x16x35	121
CS6	RM3	Y	Y	Y			Y	USB	Y	2	5/5	57x19x37	176
CP119	RH			Y			Y	USB	Y	16	5/5	56x23x38	224
CP119	RH			Y			Y	USB	Y	16	5/5	56x23x38	224
CP139	RM3		Y	Y		Y	Y	USB	Y	16	5/5	56x23x38	248
CP139	RM3		Y	Y		Y	Y	USB	Y	16	5/5	56x23x38	248
CP179	RM3	Y	Y	Y		Y	Y	USB	Y	16	5/5	56x29x38	289
CP209	RM3	Y	Y	Y		Y	Y	USB	Y	16	5/5	59x63x39	430
CP209 CD	RM3	Y	Y	Y	Y	Y	Y	USB	Y	16	5/5	59x63x39	430
CP209 IQ	RM3	Y	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											1/1		
K200											1/1		185
KGP10											1/1	49D	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

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
Kohler (continued)															
KD165	G	E	EP/ MP/ lyP	8,495	8,495	660		Y		304	62	360	5	3	
KD165 French	G	E	MP/CP	9,495	9,495	660		Y		304	62	360	5	3	
Korg															
SP170	S			499	599	10					120	18	2	1	Y
SP250	S			699	1,199	30					60	22	2	1	Y
SV1	S			2,199	2,999	36					80	0	0	1 (3)	Y
LP350	V		ES/W	999		30					60	22	2	3	Y
Kurzweil															
MP-10	V		EP	1,799	2,495	88		Y	Y	78	64	30	4	3	
MP-10	V		R	1,499	2,995	88		Y	Y	78	64	30	4	3	
CUP-2	V		EP	4,299	5,995	88		Y	Y	78	64	130	4	3	
Mark Pro ONEi F	V		R	1,816	2,695	64					64	30	2	3	
Mark Pro ONEi F	V		EP	1,998	2,695	64					64	30	2	3	
Mark Pro TWOi	V		R	2,362	3,295	64					64	60	4	3	
Mark Pro TWOi	V		EP	2,544	3,595	64					64	60	4	3	
Mark Pro 3i	V	E	R	3,398	4,495	256				32	64	60	4	3	
Mark Pro 3i	V	E	EP	3,798	4,995	256				32	64	60	4	3	
X-PRO UP	V		EP	5,495	7,995	999		Y	Y	128	128	140	4	3	
X-PRO MG	G		EP	6,999	9,995	999		Y	Y	128	128	140	4	3	
M-Audio															
ProKeys88	S			599	749	14					126	0	0	1	
Nord															
Nord Piano 88	S		Rd	2,699	2,799	19			Y		40-60			3	Y
Omega (Kaino)															
CR-201	V		M	1,545	1,947	12					64	40	2	3	
CR-203	V	E	M	1,727	2,247	100				100	64	30	2	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>
KD165	Fatar TP30				Y	Y				16	3/1		528
KD165 French	Fatar TP30				Y	Y				16	3/1		528
SP170	NH										1/1	52x13x6	27
SP250	HA 3										1/1	51x15x6	42
SV1	RH3								Y		1/1	53x14x6	46
LP350	RH3										1/1	53x11x31	94
MP-10	LK								Y	2	2/3	56x19x35	115
MP-10	LK								Y	2	2/3	56x19x35	115
CUP-2	Fatar		Y						Y	2	2/3	56x17x42	214
Mark Pro ONEi F	Fatar								Y	1	2/3	54x17x32	112
Mark Pro ONEi F	Fatar								Y	1	2/3	54x17x32	112
Mark Pro TWOi	Fatar								Y	2	2/3	54x20x35	125
Mark Pro TWOi	Fatar								Y	2	2/3	54x20x35	125
Mark Pro 3i	Fatar								Y	4	2/3	54x20x35	120
Mark Pro 3i	Fatar								Y	4	2/3	54x20x35	120
X-PRO UP	Fatar							xD	Y	16	2/3	56x36x37	214
X-PRO MG	Fatar							xD	Y	16	2/3	56x36x37	225
ProKeys88									Y		1/1	57x13x6	48
Nord Piano 88									Y		1/1	51x13x5	40
CR-201	Fatar Graded						Y			1	1/90		
CR-203	Fatar Graded						Y			1	1/90		

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
Omega (Kaino) (continued)															
CR-301	V	E	M	1,909	2,547	100				100	64	40	2	3	
LX-501	V	E	M	2,000	2,697	100				100	64	80	4	3	
LX-505	V	E	M	2,273	3,147	100				200	64	80	4	3	
LX-505	V	E	EP	2,273	3,147	100				200	64	80	4	3	
LX-802	G	E	M	4,998	6,447	100				200	64	80	4	3	
Princeton															
SP-88	S	E	Sr	1,495	1,995	350				130	64	20	4	1	
SP-88	V	E	R	1,995	2,495	350				130	64	20	4	1	
HP-310e	V	E	EP	2,995	3,995	142				100	64	100	4	3	Y
Roland															
RD-300GX	S		Bk	1,599	1,829	366	Y	Y	Y	200	128			1 (3)	Y
RD-300NX	S		Bk	1,699	1,999	366	Y	Y	Y	200	128			1 (3)	Y
RD-700GX	S		Bk	2,599	2,949	518	Y	Y	Y	200	128			1 (3)	Y
RD-700NX	S		Bk	2,599	2,999	518	Y	Y	Y	200	128			1 (3)	Y
V-Piano	S		Bk	5,995	6,999	24	Y	Y	Y		264			3	Y
FP-4	S	E	Bk/Wt	1,499	1,719	333	Y	Y	Y	80	128	14	2	1 (3)	Y
FP-4F	S	E	Bk	1,749	1,999	336	Y	Y	Y	80	128	24	2	1 (3)	Y
FP-4F	S	E	Wt	1,849	2,099	336	Y	Y	Y	80	128	24	2	1 (3)	Y
FP-7	S	E	Bk	1,999	2,289	339	Y	Y	Y	80	128	26	2	1 (3)	Y
FP-7F	S	E	Bk	1,899	2,199	339	Y	Y	Y	80	128	24	2	1 (3)	
FP-7F	S	E	Wt	1,999	2,299	339	Y	Y	Y	80	128	24	2	1 (3)	
F-110	V		ES/Wt	1,499	1,999	306	Y	Y	Y		128	24	2	3	Y
RP-201	V		R/ES	1,599	2,099	306	Y	Y	Y		128	24	2	3	Y
DP-990	V		C/ES	2,095	2,299	306	Y	Y	Y		128	24	2	3	Y
DP-990F	V		ES/C	2,299	2,699	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
DP-990RF	V		EP	2,999	3,499	337	Y	Y	Y		128	24	2	3	Y
HP302	V		R/ES	2,499	2,999	337	Y	Y	Y		128	24	2	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>
CR-301	Fatar Graded						Y			5	1/90		
LX-501	Fatar Graded						Y	USB	Y	7	1/90		
LX-505	Fatar Graded						Y	USB	Y	7	1/90		
LX-505	Fatar Graded						Y	USB	Y	7	1/90		
LX-802	Fatar Graded						Y	USB	Y	7	1/90	55x19x33	143
SP-88	Acoustic Response									5	1/90	53x5x14	44
SP-88	Acoustic Response									5	1/90	53x14x31	75
HP-310e	Acoustic Response					Y				5	1/90	55x22x35	131
RD-300GX	PHA all							USB	Y		1/90	57x13x5	36
RD-300NX	PHA III	Y		Y				USB	Y		1/90	57x13x6	39
RD-700GX	PHA II	Y		Y				USB	Y		1/90	57x15x6	55
RD-700NX	PHA III	Y		Y				USB	Y		1/90	57x15x6	55
V-Piano	PHA III	Y		Y				USB	Y	1	3/1	56x21x7	84
FP-4	PHA all								Y	3	1/90	53x12x5	34
FP-4F	PHA III - G	Y		Y				USB	Y	1	1/90	53x12x5	36
FP-4F	PHA III - G	Y		Y				USB	Y	1	1/90	53x12x5	36
FP-7	PHA II							USB	Y	3	1/90	53x15x5	53
FP-7F	PHA III	Y		Y		Y		USB	Y	1	1/90	53x16x6	53
FP-7F	PHA III	Y		Y		Y		USB	Y	1	1/90	53x16x6	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
DP-990F	PHA II	Y						USB	Y	3	5/1	55x14x31	105
DP-990R	PHA II	Y		Y				USB	Y	3	5/1	55x14x31	106
DP-990RF	PHA II	Y		Y				USB	Y	3	5/1	55x14x31	107
HP302	PHA II	Y						USB	Y	3	5/1	55x17x41	117

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)															
HP305	V		R/ES	3,199	3,799	337	Y	Y	Y		128	60	4	3	Y
HP305	V		EP	3,799	4,599	337	Y	Y	Y		128	60	4	3	Y
HP307	V		R/ES	4,199	4,999	337	Y	Y	Y		128	120	4	3	Y
HP307	V		EP	4,799	5,899	337	Y	Y	Y		128	120	4	3	Y
LX-10	V		ES	5,999	6,999	337	Y	Y	Y		128	120	6	3	Y
LX-10F	V		ES/PE	4,999	5,999	337	Y	Y	Y		128	120	6	3	Y
HPi-6s	V		ES	3,999	4,999	445	Y	Y	Y		128	60	4	3	Y
HPi-6F	V		R/ES	3,499	4,199	337	Y	Y	Y		128	60	4	3	Y
HPi-7s	V		M	6,199	7,199	596	Y	Y	Y		128	120	4	3	Y
HPi-7F	V	E	R/ES	4,499	5,999	337	Y	Y	Y		128	120	4	3	Y
FP-4C	V	E	ES	1,699	1,909	333	Y	Y	Y	80	128	14	2	1 (3)	Y
FP-7C	V	E	ES	2,199	2,449	339	Y	Y	Y	80	128	26	2	1 (3)	Y
FP-7FC	V	E	ES	2,099	2,499	339	Y	Y	Y	80	128	24	2	1 (3)	Y
FP-7FC	V	E	Wt	2,199	2,599	339	Y	Y	Y	80	128	24	2	1 (3)	Y
RM-700	V	E	ES/M	7,999	8,999	818	Y	Y	Y		128	120	4	3	Y
RG-1	G		ES	6,199	6,999	20	Y	Y	Y		128	80	4	3	Y
RG-1F	G		ES	6,999	8,399	337	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-3F	G		EP	9,999	11,999	337	Y	Y	Y		128	120	4	3	Y
RG-3M	G		EP	10,999	12,999	20	Y	Y	Y		128	80	4	3	Y
RG-7-R	G		EP	16,999	19,999	20	Y	Y	Y		128	120	6	3	Y
KR-111	G	E	EP	7,995	8,799	400	Y	Y	Y	170	64	50	4	3	Y
KR-115	G	E	EP	12,999	13,999	780	Y	Y	Y	285	128	140	4	3	Y
KR-115M	G	E	EP	17,999	19,999	780	Y	Y	Y	285	128	140	4	3	Y
KR-117M	G	E	EP	24,999	27,999	780	Y	Y	Y	310	128	280	8	3	Y
V-Piano Grand	G		EP	19,950	22,999	30	Y	Y	Y		264	240	8	3	Y
Samick															
Samick CDP-21	V		R	1,195	1,195	8					64		2	3	
Samick CDP-31	V		R	1,295	1,295	16					64		2	3	
Samick SSP-10	V		ES	1,295	1,295	16					64	30	2	1 (3)	
Samick SSP-12	V		ES	1,395	1,395	480					64	10	2	1 (3)	
Samick SSP-30	V		ES	1,395	1,395	480					64	20	2	1 (3)	
Samick SDP-10	V		R	1,495	1,495	9					64	40	2	3	
Samick SDP-31	V		R	1,595	1,595	385					64	120	6	3	
Samick SSP-20	V	E	ES	1,395	1,395	476				260	64	40	2	1 (3)	
Samick SDP-45	V	E	ES	1,895	1,895	476				260	64	40	2	3	
Samick SG-210	G		EP	3,995	3,995	16					64	120	2	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>
HP305	PHA II	Y		Y				USB	Y	3	5/1	55x17x41	127
HP305	PHA II	Y		Y				USB	Y	3	5/1	55x17x41	129
HP307	PHA III	Y		Y				USB	Y	3	5/1	56x21x43	173
HP307	PHA III	Y		Y				USB	Y	3	5/1	56x21x43	176
LX-10	PHA II	Y		Y				USB	Y	3	5/1	56x18x44	209
LX-10F	PHA III	Y		Y				USB	Y	3	5/1	56x18x45	209
HPi-6s	PHA II	Y				Y	Y	USB	Y	16	5/1	55x17x41	125
HPi-6F	PHA II	Y		Y			Y	USB	Y	4	5/1	56x17x41	128
HPi-7s	PHA II	Y		Y		Y	Y	USB	Y	16	5/1	56x21x43	176
HPi-7F	PHA III	Y		Y		Y	Y	USB	Y	16	5/1	56x21x44	176
FP-4C	PHA all								Y	3	1/90	53x13x37	59
FP-7C	PHA II							USB	Y	3	1/90	53x16x37	80
FP-7FC	PHA III	Y		Y		Y		USB	Y	1	1/90	53x16x37	81
FP-7FC	PHA III	Y		Y		Y		USB	Y	1	1/90	53x16x37	81
RM-700	PHA II	Y		Y		Y	Y	USB	Y	16	5/1	56x22x37	187
RG-1	PHA II	Y		Y				USB	Y	1	5/1	56x29x50	165
RG-1F	PHA III	Y		Y				USB	Y	1	5/1	56x29x50	165
RG-3	PHA II	Y		Y		Y		USB	Y	1	5/1	58x37x57	243
RG-3F	PHA III	Y		Y				USB	Y	1	5/1	58x37x57	242
RG-3M	PHA II	Y		Y	Y	Y		USB	Y	1	5/1	58x37x57	298
RG-7-R	PHA II	Y		Y	Y	Y		USB	Y	1	5/1	58x55x69	496
KR-111	PHA							FDD	Y	16	5/1	55x37x63	232
KR-115	PHA	Y		Y		Y	Y	USB	Y	16	5/1	58x37x57	254
KR-115M	PHA	Y		Y	Y	Y	Y	USB	Y	16	5/1	58x37x57	309
KR-117M	PHA	Y		Y	Y	Y	Y	USB	Y	16	5/1	59x62x69	529
V-Piano Grand	PHA III	Y		Y				USB	Y	1	5/1	59x59x61	375
Samick CDP-21		Y							Y	2	3/1		
Samick CDP-31		Y							Y	2	3/1		
Samick SSP-10	Graded									2	3/1	54x14x33	64
Samick SSP-12	Graded							USB	Y	16	3/1	52x13x32	57
Samick SSP-30	Graded							USB	Y	16	3/1	62x13x30	62
Samick SDP-10									Y	2	3/1	54x18x35	148
Samick SDP-31	Graded							USB			3/1	54x20x35	150
Samick SSP-20	Graded							USB	Y	16	3/1	53x13x30	62
Samick SDP-45	Graded							USB	Y	16	3/1	54x20x36	150
Samick SG-210	Graded									2	3/1	57x50x36	260

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
Samick (continued)															
Samick SG-310	G		EP/WtP	4,495	4,495	385					64	120	6	3	
Samick SG-450	G	E	EP/WtP	4,995	4,995	476				260	64	120	6	3	Y
Suzuki															
Home Digital Piano (HDP)	V		EP/R	899		16					64		2	3	
DP-77rw	V		R	999		30					64	120	4	3	
DP-1000	V	E	EP/R			128				100	64		2	3	
TSI-1ei	V	E	EP/R			128				100	64	120	4	3	
HP-99	V	E	EP/R			128				100	64	120	4	3	
MDG-100	G	E	EP	1,799		128				100	64	120	4	3	
S-350	G	E	EP			128				100	64	120	6	3	
MG-350	G	E	EP			128				100	64	120	6	3	
HG-437	G	E	EP			128				100	64	120	6	3	
Symphony															
DL-100	V	E	ES	1,247	1,295	138		Y	Y	100	64	40	2	3	
DL-200A	V	E	ES/R	1,257	1,495	150		Y	Y	118	64	60	2	3	
DL-600	V	E	ES/R	1,363	1,995	138		Y	Y	100	64	60	4	3	
DL-800	V	E	R	1,545	2,495	138		Y	Y	109	64	80	4	3	
DL-800A	V	E	C	1,545	2,495	138		Y	Y	109	64	80	4	3	
DL-900	V	E	R	1,620	2,795	138		Y	Y	100	64	80	4	3	
DL-900A	V	E	EP	1,802	2,995	138		Y	Y	100	64	80	4	3	
DL-1250	G	E	EP	3,480	3,495	138		Y	Y	109	64	100	4	3	
Viscount															
Sinfonia	V	E	ES	3,995	4,795	500+	Y	Y	Y	144	64	75	4	3	
Maestro	G	E	EP	7,995	9,995	500+	Y	Y	Y	144	64	150	4	3	
Maestro	G	E	WtP	8,495	10,495	500+	Y	Y	Y	144	64	150	4	3	
Maestro	G	E	MP/MS	8,995	10,995	500+	Y	Y	Y	144	64	150	4	3	
Maestro	G	E	MDP/MDS	7,995	9,995	500+	Y	Y	Y	144	64	150	4	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>
Samick SG-310	Graded							USB		16	3/1	57x50x36	260
Samick SG-450	Graded							USB	Y	16	3/1	57x50x36	260
Home Digital Piano (HDP)	Graded						Y		Y	1	1/1		
DP-77rw	Graded								Y	3	1/1	56x21x35	168
DP-1000	Graded						Y		Y	1	1/1		
TSI-1ei	Graded					Y		SD	Y	5	1/1	55x18x39	165
HP-99	Graded					Y		SD	Y	5	1/1	55x21x36	165
MDG-100	Graded					Y		SD	Y	3	1/1	55x29x36	165
S-350	Graded					Y		SD	Y	5	1/1	57x39x36	225
MG-350	Graded					Y		SD	Y	5	1/1	57x39x36	225
HG-437	Graded					Y		SD	Y	5	1/1	55x48x35	315
DL-100	TSHA							USB	Y	3	3/3	55x16x33	75
DL-200A	TSHA							USB	Y	6	3/3	54x22x34	85
DL-600	TSHA							USB	Y	6	3/3	54x21x34	95
DL-800	TSHA							USB	Y	6	3/3	55x21x35	110
DL-800A	TSHA							USB	Y	6	3/3	55x21x35	110
DL-900	TSHA							USB	Y	6	3/3	55x20x35	110
DL-900A	TSHA							USB	Y	6	3/3	55x20x35	110
DL-1250	TSHA							USB	Y	6	3/3	55x49x34	180
Sinfonia	Grand Response							FD			2/1		
Maestro	Grand Response							FD		16	2/1	54x38x35	310
Maestro	Grand Response							FD		16	2/1	54x38x35	310
Maestro	Grand Response							FD		16	2/1	54x38x35	310
Maestro	Grand Response							FD		16	2/1	54x38x35	310

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
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	
The Grand	G		EP	1,299	1,999	14					64			3	
Yamaha															
P85	S		Bk/Sr	629	899	10					64	12	2	1(3)	Y
P95	S		Bk/Sr	599	899	10					64	12	2	1(3)	Y
P155	S		BkM/ SrC/ BkEP	1,199	1,699	17	Y	Y			128	24	2	1	Y
CP33	S			1,299	1,700	28	Y	Y			64			2	Y
CP50	S			1,699	2,199	322	Y	Y	Y	100	128			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			1(2)	Y
CP1	S			4,999	5,999	17	Y	Y	Y		128			3	Y
YDPS31	V		Al	949	1,299	6					64	12	2	3	Y
YDP141	V		R	1,149	1,499	6					64	12	2	3	Y
YDP161	V		R	1,349	1,999	10					64	40	2	3	Y
YDP181	V		R	1,799	2,199	14					128	40	2	3	Y
CLP430	V		BW/ M/R	2,533	2,999	14					128	60	2	3	Y
CLP430	V		EP	2,931	3,999	14					128	60	2	3	Y
CLP440	V		BW/ M/R	3,164	3,899	28	Y	Y	Y		256	80	4	3	Y
CLP440	V		EP	3,705	4,699	28	Y	Y	Y		256	80	4	3	Y
CLP470	V		R	3,813	4,799	28	Y	Y	Y		256	80	4	3	Y
CLP470	V		EP	4,196	5,599	28	Y	Y	Y		256	80	4	3	Y
CLP480	V		R	5,364	6,999	532	Y	Y	Y		256	200	8	3	Y
CLP480	V		EP	6,164	7,899	532	Y	Y	Y		256	200	8	3	Y
CLPS406	V		W	3,364	4,499	28	Y	Y	Y		256	80	4	3	Y
CLPS408	V		EP	4,364	5,699	28	Y	Y	Y		256	80	4	3	Y
R01	V		Wt	4,899	7,199	1	Y	Y			128	24	2	3	Y
F01	V		EP/ BIP/ RdP/ OrP	4,999	7,699	20	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>
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
The Grand										2	1/1	55x41x33	165
P85	GHS									1	1/1	52x12x6	29
P95	GHS									1	1/1	52x12x6	26
P155	GH							USB		2	1/1	53x6x14	41
CP33	GHE								Y		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
YDP141	GHS									1	3/3	54x17x32	91
YDP161	GHE									1	3/3	54x17x32	95
YDP181	GHE								Y	2	3/3	54x34x20	110
CLP430	GH3							USB	USB	2	5/5	56x20x36	146
CLP430	GH3							USB	USB	2	5/5	56x20x36	157
CLP440	GH3			Y				USB	USB	2	5/5	56x20x36	146
CLP440	GH3			Y				USB	USB	2	5/5	56x20x36	157
CLP470	NW-LGH		Y	Y				USB	USB	2	5/5	56x20x36	163
CLP470	NW-LGH		Y	Y				USB	USB	2	5/5	56x20x36	176
CLP480	NW-LGH		Y	Y				USB	USB	16	5/5	56x20x37	193
CLP480	NW-LGH		Y	Y				USB	USB	16	5/5	56x20x37	201
CLPS406	GH3			Y				USB	USB	2	5/5	57x17x38	153
CLPS408	NW-LGH		Y	Y				USB	USB	2	5/5	57x17x39	171
R01	NW		Y	Y								55x15x38	88
F01	NW		Y					USB	Y	1	5/5	56x16x39	168

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)															
F11	V		EP/ BIP/ RdP/ OrP	7,499	13,999	20	Y	Y			128	80	4	3	Y
N1	V		EP	8,180	9,999	5	Y	Y	Y		256	175	6	3	Y
N2	V		EP	11,280	14,999	5	Y	Y	Y		256	500	12	3	Y
DGX640	V	E	C/W	799	1,299	523				165	64	12	4	1(3)	(Y)
YDP-V240	V	E	R	1,899	2,399	491				161	64	40	2	3	Y
CVP501	V	E	R	3,984	4,499	776	Y	Y		191	128	40	2	3	Y
CVP501	V	E	EP	4,698	5,399	776	Y	Y		191	128	40	2	3	Y
CVP503	V	E	R	5,664	6,999	876	Y	Y		272	128	80	4	3	Y
CVP503	V	E	EP	6,224	7,999	876	Y	Y		272	128	80	4	3	Y
CVP505	V	E	R	7,160	8,999	1169	Y	Y	Y	362	128	80	4	3	Y
CVP505	V	E	EP	7,992	10,099	1169	Y	Y	Y	362	128	80	4	3	Y
CVP505	V	E	MP	8,064	10,799	1169	Y	Y	Y	362	128	80	4	3	Y
CVP509	V	E	R	9,238	11,999	1291	Y	Y	Y	442	256	195	8	3	Y
CVP509	V	E	EP	10,396	13,999	1291	Y	Y	Y	442	256	195	8	3	Y
CVP509	V	E	MP	10,600	13,999	1291	Y	Y	Y	442	256	195	8	3	Y
CLP265GP	G		EP	5,706	6,399	14					64	80	4	3	Y
CLP295GP	G		EP	9,316	10,799	518	Y	Y	Y		128	160	8	3	Y
CLP465GP	G		EP	5,500	5,999	14					128	60	2	3	Y
H01	G		AG/ VR/ DB	7,499	13,199	10	Y	Y			64	80	4	3	Y
H11	G		AG/ VR/ DB	9,999	20,799	10	Y	Y			64	80	4	3	Y
N3	G		EP	17,000	19,999	5	Y	Y	Y		256	500	12	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>
F11	NW		Y		Y			USB	Y	1	5/5	56x16x39	198
N1	Grand	Y	Y					USB		1	5/5	58x24x39	266
N2	Grand	Y	Y	Y				USB	Y	1	5/5	58x21x40	313
DGX640	GHS						Y	USB	Y	6	1/90	55x18x30	61
YDP-V240	GHS						Y	USB	Y	6	3/3	54x20x34	108
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
CLP265GP	GH3									2	5/5	57x45x37	214
CLP295GP	NW		Y	Y				USB	Y	16	5/5	57x45x37	238
CLP465GP	GH3							USB	USB	2	5/5	56x45x37	216
H01	NW		Y					USB			5/5	58x30x30	181
H11	NW		Y		Y			USB			5/5	58x30x30	216
N3	Grand	Y	Y	Y				USB		1	5/5	58x47x40	439
CGP1000	NW		Y	Y		Y	Y	USB	Y	16	5/5	58x60x39	412

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FALL 2011
Supplement to
THE PIANO BOOK

ISBN 978-192914532-4



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A PIANO is one of the most expensive consumer purchases many people will ever make. Yet when you shop for a piano, you'll find that honest, unbiased information about price, quality, features—even country of origin—is mysteriously scarce. For over 20 years, *The Piano Book: Buying & Owning a New or Used Piano*, by Larry Fine, has guided piano buyers through the maze of competing claims, strange terminology, and myriad possibilities presented by the piano market. Now, *Acoustic & Digital Piano Buyer*, the twice-yearly companion volume to *The Piano Book*, makes the task of buying a piano—new or used, acoustic or digital—even simpler and more enjoyable.

Acoustic & Digital Piano Buyer is a hybrid book/magazine. The first half consists of a series of short articles, illustrated in full color and written in a no-nonsense style, that are filled with only the most important information on a wide variety of topics related to buying a piano. Here you will find advice on:

- Piano Buying Basics
- Acoustic vs. Digital: What's Best For Me?
- Digital Piano Basics
- The New-Piano Market Today, including brand ratings
- Buying a Used or Restored Piano
- Buying a High-End Piano
- Buying Pianos for an Institution
- How to Acoustically Optimize a Room for a Piano
- Buying an Electronic Player-Piano System
- Hybrid and Software Pianos
- Piano Care
- Benches, Lamps, and Accessories

The second half of *Acoustic & Digital Piano Buyer* contains invaluable reference material, including:

- Prices for virtually every model and style of new acoustic and digital piano for sale in the U.S.
- Features and specifications for hundreds of digital piano models
- Brand and company profiles for every current manufacturer of acoustic and digital pianos

If you're in the market for a piano, *Acoustic & Digital Piano Buyer* will pay for itself many times over through your greater peace of mind and convenience while shopping, and can potentially save you money on your purchase.

LARRY FINE, Editor, is the author of *The Piano Book: Buying & Owning a New or Used Piano*, for more than 20 years the standard consumer reference in the piano business. A Registered Piano Technician, Fine has been involved in the piano industry for 35 years.