PRICES | SPECIFICATIONS | RATINGS | HOW TO BUY

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



SPRING 2018
Supplement to

THE PIANO BOOK









Welcome to the Spring 2018 issue of *Acoustic & Digital Piano Buyer*, a semiannual publication devoted to the purchase of new, used, and restored acoustic pianos and digital pianos. Published since 2009, *Piano Buyer* is the successor to the well-known reference *The Piano Book*, and its *Annual Supplement*, which from 1987 to 2009 were the principal consumer guides 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 Reprints & 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. With grand pianos from China so inexpensive, and digital pianos sounding so realistic (through headphones, at least), why would anyone still want to buy an acoustic vertical? Well, says Owen Lovell, *Piano Buyer*'s Piano Review Editor, in "The Vertical Piano Is *Not* Dead" (p. 49), if you love "the resonant, visceral, decidedly analog experience" of playing a good acoustic piano but don't have space for a grand, you might want to try a Seiler vertical equipped with a Super Magnet Repetition (SMR) action.

It's easy to forget that the Internet as we know it is barely 20 years old, and that, until fairly recently, the process of advertising a piano for sale primarily consisted of placing a print ad in your local *PennySaver*. But with the Internet's benefits have come some headaches. "My biggest challenge has been trying to stay one step ahead of

the scammers," says Joe Ross, owner of the classified-ad site PianoMart.com, which just celebrated its 20th anniversary online. In our interview with Ross (p. 71), he also gives advice on how to detect and avoid the scammers.

Every now and then, a piano is sold at a charity auction for millions of dollars because a celebrity once owned, played, endorsed, or signed it—or all of the above. But, says Karen E. Lile, an appraiser who specializes in celebrity pianos, "it's more common for a celebrity or a celebrity's heirs to part with a piano in a private transaction than to direct public attention toward their personal property." Read about this fascinating but little-known part of the piano world in Lile's "The Private and Public Sides of Celebrity Pianos" (p. 88).

How do you get rid of the fingerprints on a hand-rubbed satin finish? Why does the high-gloss finish on my piano look so bad after I've applied furniture wax? In "Cleaning and Polishing a Piano's Finish" (p. 106), Dave Swartz, a piano technician and owner of Cory Products, tells us all we need to know about how to properly care for satin, high-gloss, and open-pore piano finishes.

The nuances and refinements in the tone and touch of a digital piano that are required to re-create the experience of playing an acoustic piano—and earn it the designation *hybrid piano*—are many, and not always what you might expect. Piano Review Editor Owen Lovell discovers a new and important one in his review of the Kawai Novus NV10 Hybrid (p. 124).

Piano Buyer's ratings of new pianos are probably the publication's most read, most misunderstood, and most controversial feature. As the quality of lowend pianos rises, and the differences between brands become increasingly subtle and subjective, our ratings have come to represent less our judgments of the instruments than our sense of how manufacturers and dealers position them in the marketplace—partly by price, but also by reputation and country of origin. But we've never been completely satisfied with this, in part because readers who lack the time, interest, and/ or ability to make their own judgments frequently ask that we help them by recommending specific models. We've risen to the challenge with "Staff Picks," our unapologetically subjective assessments of the best in today's acoustic, digital, and hybrid pianos (p.43).

(continued on page 2)





SPRING 2018 Supplement to THE PIANO BOOK

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

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Don't forget to explore the rest of our website. If you're shopping for a new piano, our two searchable online databases of 3,000 acoustic and more than 200 digital models will help you quickly home in on the instruments that match your requirements for size, furniture style, budget, and features. If you're shopping for a used instrument, try our Piano Buyer

Classifieds; using its powerful search engine, browse among thousands of used pianos for sale. If you're in need of piano-related services—tuning, rebuilding, sales, teaching, or moving—use our Local Services Directory. And when you're ready to take a break, treat yourself to some comic relief with our blog, *Piano-Buying Stories*.

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See www.PianoBuyer.com for more information.

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FEATURE ARTICLES

49 The Vertical Piano Is Not Dead: Seiler Brings Premium Action Technology to the Mid-priced ED Series by Dr. Owen Lovell

"Piano geeks, digital-piano zealots, and members of the piano industry in general often speak of the imminent demise of the acoustic vertical, aka upright, piano. Allow me to offer an opposing viewpoint: Seiler's SMR-equipped instruments can provide a means of enhancing the action performance of a vertical piano in a way that requires less of a compromise when compared to a grand."

71 Piano Buyer Interview: Joe Ross, Owner of PianoMart.com

"My biggest challenge has been trying to stay one step ahead of the scammers who relentlessly assault the site almost daily. Fortunately, the e-mails that piano sellers receive from scammers are relatively easy to identify. The safest way to buy or sell a piano on the Internet is to use the PianoMart.com free escrow service."

88 The Private and Public Sides of Celebrity Pianos

by Karen E. Lile

"A piano can acquire a history, through association with a celebrity, that will give it extra value—even (though rarely) into the millions of dollars—above and beyond what it might be worth solely as a musical instrument. Some of these "celebrity pianos" are known to the public through famous people who design and market their celebrity status for a charity or business. But in my experience, it's more common for a celebrity or a celebrity's heirs to part with a piano in a private transaction than to direct public attention toward their personal property."

106 Cleaning and Polishing a Piano's Finish

by Dave Swartz

"The purpose of this article is to explain the proper care of the three most common piano finishes today: satin, high gloss, and open pore. To best care for your piano's finish, you need to know what kind of finish it is, and what its special requirements are."

124 Review: A First Look at Kawai's Novus NV10 Hybrid

by Dr. Owen Lovell

"The Kawai Novus is different in a way that may not show up in the numbers but that strongly matters to pianists, and brings to the digital-piano industry an important first: The Novus's touch weight varies based on whether or not the damper pedal is depressed. The Novus is the first production digital piano from a major manufacturer to re-create this feeling—a subtle and important enhancement of the player's sense of musical control."





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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 eightyear-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 mances 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:

- ² Peter H. Wood, "The Comparative Academic Abilities of Students in Education and in Other Areas of a Multi-focus University," ERIC Document ED327480 (1990).
- ³ *U.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).

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.

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

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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Acoustic or Digital: What's Best for Me?

ALDEN SKINNER AND LARRY FINE

SHOULD YOU BUY an acoustic (traditional) piano or a digital (electronic) piano? 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 instru-

ment 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 accom-

panying 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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Piano Buying Basics

LARRY FINE



Introduction

The purpose of this article is to provide an overview of the process of buying an acoustic (traditional) piano, with an emphasis on the decisions you'll have to make along the way, and on the factors that will affect any purchase of an acoustic piano. References are given to other articles in this publication, or to *The Piano Book*, for further information on selected topics. For an overview of the process of buying a digital (electronic) piano, please read our **article** on that subject.

Why Is Buying a Piano So Hard?

An acoustic (traditional) piano can be one of the most expensive—and difficult—purchases most households will ever make. Why so difficult?

Lack of qualified advice. A person who sets out to buy a piano is unlikely to have a social support network of family and friends who are knowledgeable about pianos to serve

as advisors, as they might if buying a car, house, or kitchen appliance. A "modern" piano is essentially a 19th-century creation about which few people know very much, and about which much of what they think they know may not be accurate or current. Even music

teachers and experienced players often know little about piano construction or the rapidly changing state of piano manufacturing, often relying on their past experience with certain brands, most of which have changed significantly over the years.

Confusing array of choices. Acoustic pianos are marketed nationally

in the United States under some 70 different brand names from a dozen countries (plus dozens of additional names marketed locally), with thousands of models available in dozens of furniture styles and finishes—and that's just new pianos! 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 res-

toration. Just thinking about it can make one dizzy.

Value for the money

unclear. New pianos

vary in price from

\$2,000 to \$200,000.

But unlike many other

consumer items, whose

differences can be mea-

sured or are readily ap-

parent, most pianos,

An acoustic piano can be one of the most expensive—and difficult—purchases most households will ever make.

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.

SHOPPING ADVICE

Dealing With Technical Issues

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 those readers who love reading about the finer technical details, we recommend the author's earlier work, The Piano Book.

Confusing sales practices. 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

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business—you may be ready for a trip to a Middle East bazaar.

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

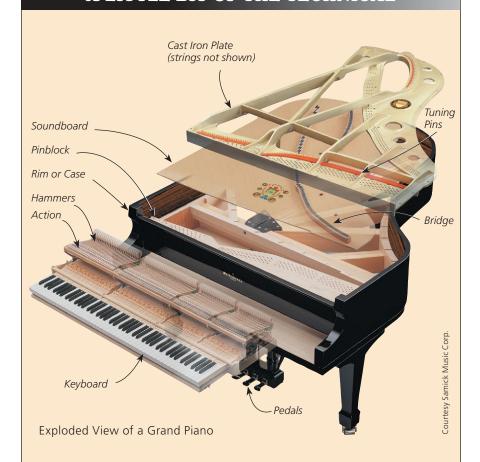
- Sound tends to bounce back into player's face, making subtle control of musical expression more difficult.
- Action is not as advanced as in grand; repetition of notes is slower and less reliable in most cases, and damping is sometimes less efficient.
- Keys are shorter than on grands, making subtle 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 when a more subtle control of musical expression is desired, but where space is at a premium.

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.

A LITTLE BIT OF THE TECHNICAL



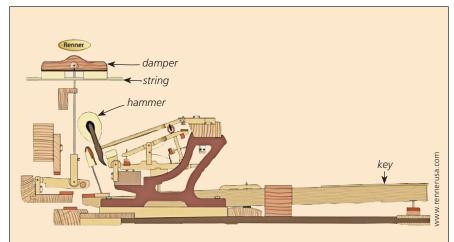
A little bit (but not too much) of technical information about the piano is useful to have while shopping for one. Important words are in **boldface**.

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 and connected to the action

and dampers, 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. 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 (bass sustain), and a mute or practice 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



The key and action parts of a single note from a grand piano [For online animation, click here.]

with copper for the lower-sounding 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 sound the same note. 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 heavyduty 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 this structure stands vertically, and is most commonly placed against a wall. A **grand** piano is one in which this structure lies horizon-

tally. 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 pinblock 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 (including keyboard), and a cabinet or case.

- 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

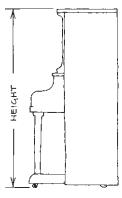
What Size?

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 midrange 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 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 so is not generally significant, 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 died out. Verticals



from 40" to about 43" or 44" tall 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 small verticals 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.

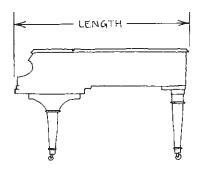
Studio pianos, from about 44" to 47" tall, are more serious instruments. They are called studios because they are commonly found in the practice rooms of music schools. Manufacturers make them in both attractive furniture styles for the home and in functional, durable, but aesthetically bland styles 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 these models.

Verticals about 48" and taller, called uprights, are the best musically. New ones top out at about 52", but in the early part of the 20th century they were made even taller. The tallest verticals take up no more floor space than the shortest ones, but some buyers may find the taller models too

massive for their taste. Most uprights are made in an attractive black, traditional or institutional style, but are also available with exotic veneers, inlays, and other touches of elegance.

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

Grands



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

Grands less than 5' long are usually somewhat 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, potentially becoming professional quality at about 6'. Pianos intended for the home or serious professional top out at about 7' or 7½'. These sizes may also satisfy the needs of smaller concert venues. Larger venues require concert grands, usually about 9' long.

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

Budget

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

- Most new vertical pianos sell in the range of \$4,000 to \$10,000, though some higher-end ones cost two or three times that, and a few cost less.
- New small, inexpensive grand pianos generally go for \$7,000 to \$12,000; mid-size, mid-priced grands from \$12,000 to \$30,000; and high-end grands for \$40,000 to \$100,000 or more.
- Unrestored but playable used pianos cost from perhaps 10% to 80% of the cost of a comparable new instrument, depending on age and condition, with 15-year-old used pianos coming in at about 50%. The cost of restored instruments is discussed below.

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.





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Rent or Buy

If the piano is being purchased for a beginner, there is a significant possibility that he or she will not stick with playing the piano. To handle this and other "high-risk" situations, most dealers offer a rental/purchase program. In the typical program, the dealer would rent you the piano you are considering purchasing for up to six months. You would pay roundtrip moving expenses upfront, usually \$400 to \$600, plus a monthly rental fee, typically \$70 to \$120 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.

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, level of workmanship, and manufacturing location 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. Presently, however, most performance-grade pianos are made in Europe and the United States, while virtually all consumergrade pianos are made in Asia. Due to globalization and other

ization 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 expect the instrument to satisfy your evolving needs, 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

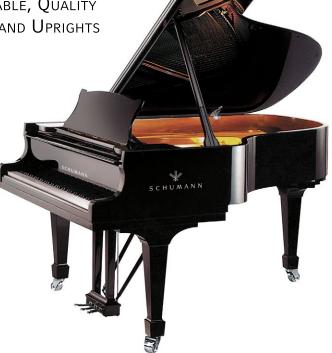
any piano. However, some pianos seem better suited in tone and touch than other pianos to some kinds of music. Quality in piano tone is often defined in terms of the instrument's ability to excel at pleasing players of so-called "classical" music because this kind

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 less expensive instrument.

A useful generalization for the purpose of discussing quality can be had by dividing pianos into performance grade and consumer grade.







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HOW LONG DOES A PIANO LAST?

A note about how long a piano will last—a question I hear every day. The answer varies for pianos almost as much as it does for people. A piano played 16 hours a day in a school practice room might be "dead" in ten years or less, whereas one pampered in a living room in a mild climate might last nearly a century before requiring complete restoration to function again. A rule-of-thumb answer typically given is that an average piano under average conditions will last 40 to 50 years. If past experience is any guide, it would not be unreasonable to predict that the best-made pianos will last about twice as long as entry-level ones, given similar conditions of use and climate.

However—and this is the important

point—most pianos are discarded not because they no longer function—in fact, they may go on to long lives as used pianos for other people—but because they no longer meet the needs or expectations of their owners or players. A player may have musically advanced beyond what the instrument will deliver, or the owner may now be wealthier and have higher expectations for everything he or she buys—or perhaps no one in the house is playing anymore and the piano is just taking up space. Thus, the important consideration for most buyers, especially buyers of new or relatively young pianos, is how long the piano in question will meet their needs and expectations, rather than how long that piano will last.

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

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 older styles and finishes

Used Piano Advantages

- Lower upfront cost
- Greater choice of attractive older 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
- 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 can 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, a technician must pass a series of tests. This provides the customer with some assurance of competence.)

It helps to remember that a new piano becomes "used" the moment it is first sold. Although junk certainly exists, used pianos actually come in a bewildering variety of conditions and situations, many of which can be quite attractive, musically and financially. However, pianos offered for a few hundred dollars or for free on websites such as Craigslist are usually a very poor option. They almost invariably need a great deal of work to bring them into playable condition, and are not worth the considerable cost of moving them. See also our article "Advice About **Used Pianos For Parents of Young** Beginning Piano Students" for a list of brands of used piano probably best avoided.

The subject of used pianos 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. See also our archive of past feature articles for additional articles about buying a used or restored piano.

The Piano Dealer

The piano dealer is a very important part of the piano-buying experience, for several reasons:

- 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.
- 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

BUYING A RESTORED PIANO

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, tuning, and adjusting the action as needed. 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% 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, in their community or online, an entire world of piano buffs, and piano technical and historical trivia.

to some extent by shopping among a number of dealers).

- 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.
- 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, or from soliciting business from 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. (Exception: If a brand of new piano is one that the dealer owns or controls—known as a *house brand*—you may be able to purchase it without ever visiting the dealer.)

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 likely that piano shopping will migrate in that direction as well.

Buying a piano sight unseen (which, in view of the above discussion, is likely to 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, particularly beginners or non-players. In the piano business, we like to say and I say it a lot—that a piano is not a commodity; that is, a product of which one example is more or less interchangeable with another. Each piano is unique, etc., etc., and must be individually chosen. But for someone who is buying a piano for a beginner, who has no preference in touch and tone, and who 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 via 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 apply to every purchase). First, consider whether it's really worth it once you've taken into account the cost of longdistance 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 (to find a technician, use the Piano Technicians Guild website, www.ptg.org) and ask the technician about the dealer's reputation. Make sure the dealer is experienced with arranging longdistance 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.

It bears emphasizing that the above discussion was about buying a piano over the Internet from a commercial dealer, against whom you have at least some possibility of recourse if something goes wrong in the transaction. If buying longdistance from a private individual, in addition to the above advice, consider use of an escrow service, such as that provided by Piano Buyer Classifieds and Pianomart.com. The escrow service will hold your funds and not release them to the seller until you've had an opportunity to make sure that the piano you received is in the condition you expected.

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. 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 megasales (such as college sales, truckload sales, etc.), prices at these events are often actually *higher* than the price you could negotiate any day of the week, and the pressure to buy can be substantial. Shop at these sales only after you've shopped elsewhere, and look for the real bargains that can occasionally be found there.

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 newpiano 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 privateparty sellers are usually negotiable, in part because the seller often has little idea of what the piano should sell for and has made up a price based only on 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 smartphones, iPads and other tablets, notebooks and laptops, MP3s, CDs, 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 and Steinway's Spirio are built into select Yamaha, Steinway, and Bösendorfer models at these companies' factories. PianoDisc and QRS PNOmation, the two major aftermarket systems, can be installed in almost any piano,



The control box for some electronic player-piano systems is attached to the underside of the keybed.

new or used, typically by the dealer or at an intermediate distribution point. Properly installed 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 played through speakers hidden underneath the piano. The aftermarket systems generally add \$5,500 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—a great alternative for late-night practicing. The range of prices reflects the variety of configurations and options available, including what music source you use (smartphone, iPad, CD, MP3 player, etc.). Higher-level systems that reproduce music in audiophile quality cost \$15,000 or more. For more information, see the article "Buying an Electronic Player-Piano System," elsewhere in this issue.

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 *Euro style*). They are usually the smallest (42" to 43" high) and least expensive pianos in a manufacturer's product line.

Pianos with legs supported by toe blocks (struts that connect the body of the piano to the front legs) 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" 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



Continental Style



Decorator Style: French Provincial Cherry







Pramberger Piano Co.

sometimes plain-looking, they are also often purchased for home use 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 or carelessly.

Hybrid styles, containing features of both institutional and decorator styles, are common, especially in Asian pianos.

Grand pianos come in far fewer styles than verticals. As you shop, it's likely you'll 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 finished in 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







Queen Anne Style

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 mirrorlike. Variations on satin include matte, which is completely flat (i.e., reflects no light), and open-pore finishes, common on European pianos, in which the grain is not filled in before finishing, leaving a slightly grainier texture. A few finishes are semigloss, which is partway between satin and high polish. As with furniture style, the finish is an entirely personal matter, though it should be noted that satin finishes tend to show fingerprints more than do high-polish finishes.

Most piano finishes are either lacquer or polyester. Lacquer was the finish on most pianos made in the first three-quarters of the 20th century, but it is gradually being supplanted by polyester. In my opinion, lacquer finishes—especially high-gloss lacquer—are more beautiful than polyester, but

they scratch quite easily, whereas polyester is very durable. (Lacquer finishes can be repaired more easily.) Hand-rubbed satin lacquer is particularly elegant.

Touch and Tone

Touch, in its simplest form, refers to the effort required to press the piano keys. Unfortunately, the specifications provided by the manufacturers, expressed in grams, don't do justice to this complicated subject. The apparent touch can be very different when the piano is played quickly and loudly than when it is played softly and slowly, and this difference is not captured in the numbers—if you're a player, 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 adjust the brightness or mellowness of the tone to a limited degree 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 a sensitivity commensurate with your musical needs.

The Piano Warranty

Most pianos never generate a warranty claim. That said, few people would sleep well if 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.

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 has gone 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 the 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.

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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 or for the piano manufacturer and come with the piano. Benches for performance-grade pianos are more often provided separately by the dealer.





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

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

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

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

Middle Pedal

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



On most new vertical pianos, the middle pedal operates a mute that reduces the sound volume by about 50%, 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 have a smaller, onepiece "drop" fallboard that opens under the music desk. Fallboards on most newer grands (and some newer verticals) are hydraulically damped 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.

Slow-Close Grand Piano Lid

A relatively new device adds hydraulic damping to a grand piano lid, substantially reducing the effort needed to raise and lower this extremely heavy part of the piano, and reducing the chance of injury when doing so. This is a standard feature of a few piano brands, but can also be retrofitted to most grand pianos. For more information, see our review.

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The New-Piano Market Today



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 midpriced 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, lowquality pianos appearing in the U.S. and globally.
- Foreign firms and investors have combined low-cost Chinese and Indonesian labor with highquality 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 computeraided 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.

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To better survive in a global economy, highend companies have diversified their product lines to include lowand 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

Pianos made in China now dominate the North American market, constituting more than a third of all new pianos sold in the U.S. A decade ago, most were just barely acceptable technically, and musically undesirable. 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. Reports sometimes suggest less consistency than with pianos from other countries, and a continuing need for thorough presale preparation by the dealer, but otherwise few major problems. The prices of the better models are ris-

> ing, but for entryand mid-level buyers, many Chinese brands

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 "northeast") in the northern part of the country, and Guangzhou Pearl River in the south. Piano making, though industrial, remained

are still good value.

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

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well as by the lure of cheap goods manufactured for the West, foreign interests have built new piano factories in China, bought existing factories, or contracted with existing factories for the manufacture of pianos. The government has also poured money into its own factories to

make them more quality competitive and to accommodate the growing demand.

From about 2000 to 2005, 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.

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. Many of the brands 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 experienc-

ing great competitive pressure. Already, one of its factories, Dongbei, has been privatized through its sale to Gibson Guitar Corporation, parent of Baldwin Piano Company; and another, Guangzhou Pearl River, has successfully completed an initial public offering to become a public company.

Besides Baldwin, Pearl River, and the government-owned factories, other large makers in China for the North American market are Parsons Music (Hong Kong), Yamaha (Japan), Young Chang (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 AXL (Palatino brand), Bechstein (W. Hoffmann Vision brand), Blüthner (Irmler Studio brand), Brodmann, Cunningham,

Heintzman, Perzina, Schulze Pollmann, and Wilh. Steinberg. Many American distributors and dealers contract with Beijing, Pearl River, and other makers, 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.

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 an entry-level grand and most of their smaller verticals in Indonesia; Kawai makes all its small and medium-sized verticals there, and one entry-level grand; and Samick makes all its pianos for sale in North America 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.



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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, 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 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 few boutique makers, such as Ravenscroft, build high-end pianos to order. Baldwin, for a century one of the largest American producers, finally ceased most production at its American factory in 2009, having moved nearly all piano production to its two plants in China.

Steinway & Sons has been making high-quality pianos in New York City since its founding in 1853 by German immigrants. For most of the past century, the company has had little competition in the U.S.: when one desired to buy a piano of the highest quality, it was simply understood that one meant a Steinway. The

last decade or two has seen a gradual erosion of that status by more than a dozen European firms and our own Mason & Hamlin. Although each by itself is too small to make a dent in Steinway's business, their combined effect has been to claim a substantial share of the market for high-end pianos in the home. (Steinway still dominates the concert-grand market and, to some extent, the institutional market.) This has been made easier by the fact that in certain respects these Europeanmade 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 quaity). Steinways have classic designs and use proven materials and methods of construction, but the musical and aesthetic finishing of the Americanmade pianos has too often been left uncompleted at the factory in the expectation, frequently unmet, that the dealers would finish it off. Fortunately, the past few years have seen a reversal of this trend in the form of many small improvements at the factory, as well as perhaps better performance by dealers. Though there is room for further improvement, the ratio of compliments to complaints, in my experience, has become more favorable. The recent replacement of American Steinway management by personnel from Steinway's European branches may also be having a salutary effect.

Mason & Hamlin, Steinway's principal competitor in the early part of the 20th century, went into a long period of decline after the Great Depression. After a series of bankruptcies and reorganizations in the 1980s and '90s, Mason & Hamlin was purchased in 1996 by the Burgett brothers, owners of Piano-Disc, a leading manufacturer of player-piano systems. Since then, 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

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

or developing high-

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, 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 Euro-

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

Several German companies have started or acquired secondtier 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 W. Hoffmann (by Bechstein) in the Czech Republic, and Wilhelm Schimmel, formerly Vogel (by Schimmel), in Poland. Today, there

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

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. Highend 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 pi-

anos 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 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 highend 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 highend components, such as Renner hammers and Bolduc soundboards. add to the quality and value of consumer-grade pianos in which they're used. But in terms of quality, components such as these are only the tip of the iceberg. Although the difference between performance- and consumer-grade pianos has narrowed, in many ways the two types of manufacturers still live in different worlds. Differences are manifested in such things as the selection, drying, and use of wood; final regulation and voicing; and attention to technical and cosmetic details.

Makers of performance-grade pianos use higher grades of wood, selected for finer grain, more even color, or greater hardness, strength, and/or acoustical properties, as the use requires. Wood is seasoned more carefully and for longer periods of time, resulting in greater dimensional stability and a longer-lasting product. Veneers are more carefully matched, and finishes polished to a greater smoothness. Action assemblies purchased from suppliers may be taken apart and put back together to more exacting tolerances than originally supplied. The workspace is set up to allow workers more time to complete their tasks and a greater opportunity to catch and correct errors. Much more time is spent on final regulation and voicing, with an instrument not leaving the factory, in some cases, until a musician has had an opportunity to play it and be satisfied. Of course, the degree to which these manifestations of quality, and many others not mentioned, are present will vary by brand and circumstance, but underlying them all is this philosophical difference: with performance-grade pianos, the driving force behind decision-making tends to be the quality of the product; with consumer-grade pianos, cost is a greater factor.





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A MAP OF THE MARKET FOR NEW PIANOS

The chart and commentary that follow are intended to provide the newcomer to the piano market with a simple summary of how this market is organized. This summary is not, strictly speaking, a ranking of quality; rather, it is intended as a description of how manufacturers and dealers position their products in the marketplace. That is, if a dealer carried every brand, how would he or she position those brands, in terms of relative quality, when presenting them to prospective purchasers?

For pianos intended for consumer use, this positioning is usually done along lines of price; for high-end and luxury instruments—where price is less likely to be a buyer's primary concern—there is a rough pecking order based on reputation. As will be discussed later, while price and reputation are often associated with quality, that association is far from perfectly consistent. Nevertheless, in the larger picture and speaking very generally, price and reputation are associated with quality closely enough that this chart can be used as a rough guide to the quality of today's new pianos, though not as a precise or authoritative one.

The key to proper use of this chart, then, is not to follow it religiously, but to understand that, given its nature, it should be used only as a learning tool. In addition, use common sense when comparing one brand with another. Compare verticals with other verticals of similar size, and grands with similarly sized grands, or models whose selling prices fall within the same range. Don't get hung up on small differences between one group and the next—the distinctions can be quite subtle. Furthermore, the preparation of the piano by the dealer can be at least as important to the quality of the product you

PERFORMANCE-GRADE PIANOS by Reputation (see text)					
Iconic Verticals: \$30,000-\$70,000 Grands 5' to 7': \$75,000-\$150,000+	C. Bechstein Blüthner Bösendorfer Fazioli Steingraeber & Söhne Steinway & Sons (Hamburg)				
Venerable Verticals: \$20,000-\$50,000 Grands 5' to 7': \$60,000-\$105,000	August Förster Grotrian Sauter Steinway & Sons (New York)				
Distinguished Verticals: \$20,000-\$40,000 Grands 5' to 7': \$50,000-\$90,000	Bechstein (B) Estonia Haessler Shigeru Kawai Mason & Hamlin Petrof Schimmel (Konzert/Classic) Seiler (Germany) Yamaha (CF)				
Notable Verticals: \$18,000-\$27,000 Grands 5' to 7': \$45,000-\$80,000	W. Hoffmann (Tradition/Professional) Rönisch Schulze Pollmann (Masterpiece) Wilh. Steinberg (Signature) Charles R. Walter Yamaha (SX)				

Notes: Unless otherwise stated, brand names refer to both grand and vertical models. Prices are Suggested Maximum Prices (SMP) of vertical models, and of grand models from 5' to 7' in length, regular style, lowest-price finish (usually polished ebony). Substantial discounts from these prices are common—see p.195 for further explanation. The prices shown for a category reflect, in round numbers, the approximate range into which most of the brands and models in that category fall, but a few models may fall outside the range. Also, keep in mind that an individual brand's price range may be narrower than that of the category it is listed under.

receive as some of the distinctions listed in the chart. Note that there may be quality differences within a single product line that, for the sake of simplicity, we do not indicate here; and a few brands have been omitted due solely to lack of sufficient information about them. Within each group, the brands are listed in alphabetical order. No judgment of these brands' relative quality should be inferred from this order.

CONSUMER-GRADE PIANOS by Price Range						
Professional Verticals: \$10,000-\$20,000 Grands 5' to 7': \$28,000-\$55,000	Boston (Japan) Brodmann (AS) J.F. Hessen W. Hoffmann (Vision)	Hupfeld (Europe) grands Irmler (Professional) grands Kawai (GX) grands Kawai verticals (Japan)	Kayserburg (Artist) Wilhelm Schimmel Yamaha verticals (Japan) Yamaha (CX) grands			
Premium Verticals: \$6,000-\$13,000 Grands 5' to 7': \$14,000-\$40,000	Baldwin Boston verticals (118S) Brodmann (PE) Cunningham Fandrich & Sons Feurich Hailun Heintzman verticals Hupfeld (Studio) grands	Irmler verticals Irmler (Studio) grands Kawai (GL) grands Kawai verticals (UST-9) Wm. Knabe (Concert Arist) Perzina J.P. Pramberger (Platinum) Ritmüller (Premium) Samick (International)	Fridolin Schimmel Schulze Pollmann (Studio) Seiler (ED) G. Steinberg Wilh. Steinberg (P) Albert Weber Wertheim (Euro/Platinum) Yamaha (GC) grands Yamaha verticals (P22)			
Mid-Range Verticals: \$5,000-\$8,000 Grands 5' to 7': \$11,000-\$21,000	Brodmann (CE) Cline Essex Heintzman grands Gerhard Heintzman verticals Kawai verticals (Indonesia) Kingsburg	Wm. Knabe (Academy) Palatino Pramberger (Signature) Ritmüller (Performance) verticals Schumann verticals Johannes Seiler	Story & Clark (Signature) Weber Wertheim (Gold) Yamaha verticals (Indonesia) Yamaha (GB) grands Young Chang			
Economy Verticals: \$4,000–\$6,500 Grands		Gerhard Heintzman grands Wm. Knabe (Baltimore) Pearl River Pramberger (Legacy) part is not , strictly speaking, a rati				
5' to 7': \$9,500-\$15,000	performance For explanati	quality. Consumer-grade pianos are listed here by price range, performance-grade pianos are listed by general reputation. For explanation, see the accompanying article. See also Staff Picks , p.43, for recommendations of specific models.				



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WHY WE DON'T PRECISELY RATE PIANO QUALITY

Why don't we strictly judge piano quality in Piano Buyer? During the last half of the 20th century, a great many pianos, especially low-end instruments manufactured in the U.S. and in developing countries, had significant defects that made separating good instruments from bad relatively easy. That is no longer the case. Due to globalization and the computerization of manufacturing, virtually all pianos now sold in the West are competently made and without major defects, and the differences between them are increasingly subtle and subjective. While it's still clear that high-end pianos are better than entry-level ones, comparisons of instruments that are closer in price are less conclusive, and much more subject to the whims of personal preference, how well the pianos have been prepared for sale, room acoustics, and so forth.

In addition, the definition of *quality* itself is extremely vague. Depending on the buyer's priorities, *quality* could refer, among other things, to a piano's musical performance, to the aesthetics of its furniture, to its ability to hold up under the demands of heavy use in a school, or to its ability to survive in difficult climates. If *quality* refers to its musical performance, is that in a

concert venue, a teaching studio, or a living room? If in a concert venue, solo or with an orchestra? For playing Mozart, Debussy, Rachmaninoff, or Gershwin? And whose preferences in tone and touch should we enshrine as the standard by which all pianos should be measured? Each answer to those questions will produce a different ordering of pianos by quality. Furthermore, even those responsible for the technical design of pianos often can't agree on which features and specifications produce the best instruments.

In such a context of extreme subjectivity, varying priorities, and contradictory expert opinions, making too fine a distinction among brands based on their quality tends to give a false impression of scientific objectivity, and inhibits shoppers from making their own judgments and possibly discovering something wonderful for themselves. For these reasons, we have chosen to take a less active but, we think, more honest approach to giving piano-buying advice, by providing newcomers to the market with a simple frame of reference and a few personal recommendations (see our "Staff Picks" section), and otherwise letting them explore and discover for themselves what appeals to them.

Prices shown for each group represent, in round numbers, a typical range of Suggested Maximum Prices (SMP) of new pianos in the least expensive styles and finishes—smaller models toward the low end of each range, larger models toward the high end. (Significant discounts from these prices are likely—see the Model & Pricing Guide.)

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Performance-Grade Pianos

Performance-grade pianos generally have several of the following attributes:

They are built to a single high standard, almost without regard to cost, and the price charged reflects 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, often with fanatical attention to detail.
- Most are made in relatively small quantities by firms that have been in business for generations, often under the ownership of the same family. As a result, many have achieved almost legendary status, and are often purchased as much for their prestige value as for their performance.
- 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; a few are now made in Japan.

Performance-grade pianos are divided here into four groups, based on our perception of their reputation in both the musical and technical spheres of the piano business. (Of course, our perceptions are ultimately subjective, and reasonable people, especially outside the U.S., may disagree with our rankings to varying degrees.) The first two groups are reserved for those brands whose prestige figures prominently in their value. Brands labeled *Iconic* are those that seem, by general agreement, to be the ones that would be the flagship line of any dealer that carried them they are, so to speak, the Maseratis and Lamborghinis of the piano industry. Those labeled Venerable are not quite Iconic, but have a virtually uninterrupted period of 150 years or more of very high quality, and some have been owned by the same family for generations. (The word venerable carries a connotation of respect due in part to age.) Of course, the prestige of these two groups is based in large part on their



M.F. Rachals Piano Shanghai Ltd. set up in China in 2013. The company worked with the Artfield Piano Co., in China, to produce medium-priced pianos sold worldwide.

The M series uses original German scale designs, and European wood, parts, and other materials are shipped to China for assembly. where hammers are installed, and all musical finishing work (tuning, action regulating, voicing) is performed to German standards. The pianos contain high-quality components often found in German pianos: Renner actions (standard in grands, optional in verticals), Renner or Abel hammers, Strunz Bavarian spruce soundboards, Röslau strings, and sharps of real ebony wood. At present there are four vertical models (47", 48", 49, 50") and one grand model (5' 8").

In 2016, the lower-cost F series was introduced. This line uses less expensive components, such as Luo actions (standard in grands, optional in verticals), FFW hammers, Canya soundboards, and Suzuki strings. It comes in verticals sizes 48", 49", and 50½" and a 5' grand.

brand@mfrachals.com www.mf-rachals.com

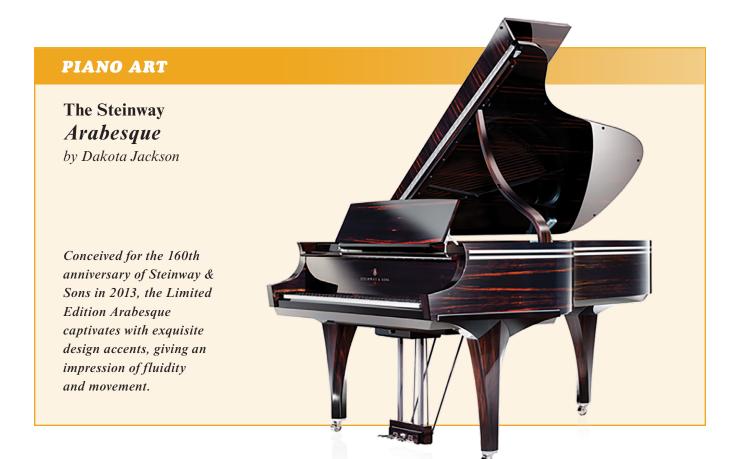
M.F.Rachals Piano Launched
Several New Series Of Pianos To The
Market Worldwide

Size	MSRP
50"	10,998
49"	10,398
48"	9,398
47"	8,598
50.5 "	7,790
49"	7,150
48"	6,900
5 6 "	18,990
5`	16,990
	50" 49" 48" 47" 50.5" 49" 48"









extremely high quality, but marketing success and historical accident also play important roles in the reputations of these and other high-end brands.

The brands in the third group, *Distinguished*, are also of very high quality, but are either fairly recent arrivals to the Performance-Grade category, or have returned to very high quality in the last 20 years or so after a period of decline. Though not Iconic or Venerable, they are nonetheless excellent in every way.

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Preferences among performancegrade pianos in general are greatly dependent on musical taste in tone and touch. For these reasons, a number of brands in the third group have devoted followings and, practically speaking, may be just as good despite not having as much prestige associated with their names.

The last group in this category, *Notable*, consists of a few brands that are less often thought of as Performance Grade, but by price and reputation should probably be separated from the Consumer-Grade category. Most of these are also considerably less expensive than those in the other groups, and may be a better value when the highest levels of quality or prestige are not needed.

Consumer-Grade Pianos

Consumer-grade pianos are built to be sold at a particular price, and adjustments to (i.e., compromises in) materials, workmanship, and method and location of manufacture are made to meet that price. Most are mass-produced in Asia, with less in the way of custom refinement of individual instruments.

Consumer-grade pianos grouped here by price range. As mentioned earlier, in the larger picture, price is a reasonably good guide to quality. But as one focuses more closely on smaller areas of the market, the association of price with quality breaks down somewhat. For example, some brands may offer a better value than others because they are reduced in price to gain a larger market share, or because they are made in a country with lower labor costs. Some brands or models, especially those that are new to the market, may be mispriced because their manufacturers haven't yet learned from experience what the public is actually willing to pay for them. Two brands that are roughly equal

in price and overall quality may have different blends of strengths and weaknesses. In fact, some lowerpriced models may appeal to you more than some higher-priced ones because of their particular characteristics or features.

As can be expected, upper-level consumer-grade pianos generally have premium components and better performance than lower-level instruments. The best of them are made in Japan or Europe, or are partly made in China or Indonesia and then shipped to Europe for completion. Some have become so advanced in their designs, materials, and manufacturing technologies that they now rival some performance-grade pianos in musicality, and are sometimes recommended as substitutes for them, often at considerably lower prices. The economy models, on the other hand, are basic, no-frills pianos suitable for beginners and casual users, but which a conscientious student may outgrow in a few years.

In my view, the brands in the Premium group tend to offer the best ratio of price to performance (i.e., the best value) among consumergrade pianos. However, shoppers on a limited budget, or those looking for something a little more upscale, may benefit from the other groups shown.

STAFF PICKS

by Piano Buyer staff

Due to the highly subjective nature of piano ratings, in "A Map of the Market for New Pianos" (page 38), we purposely avoided making too many judgments about the quality of the various brands. Instead, we provided,

as a frame of reference, a summary of the way pianos are presented in the marketplace by manufacturers and dealers. However, we feel we owe some *specific* recommendations to the many readers who have requested them, in part to simplify the buying process for shoppers who lack the time, ability, or interest to make their own discoveries. To emphasize the subjective nature of these recommendations, we provide them in this list rather than through the Map. This way, too, we don't have to pass judgment on each and every brand and model.

It's important to understand that in any artistic field, "expert" recommendations are only partially recognitions of inherent quality; in other ways, they are simply personal preferences. Thus, while you can probably count on pianos recommended by us to be "good" instruments, it doesn't follow



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Brand/Model	Classics/ Perennial Favorites	Musical Standouts	Good Values	Price (\$)	Comments
ACOUSTIC PIANOS Verticals 43"–45"					
Perzina GP-112 Kompact (45")			/	8,000	Impressive low-bass performance from a small, inexpensive vertical.
Walter, Charles R. 1520/1500 (43"/45")	~	~		18,000	Proof that a 43" piano can be musical, and it's made in the U.S.A.
Yamaha Silent Piano b2SG2 (45")			/	9,798	An affordable acoustic with the flexibility of a digital.
Verticals 46"-52"					
Bechstein, C. Concert 8 (51.5")	"	~		70,070	One of the all-time great upright pianos.
Hailun HU5-P (50")		/	/	8,230	A "total package"—balanced tone, responsive action.
Hessen, J.F. 123 (48")		~		12,800	
Kawai K300 (48")	✓		/	9,990	
Kawai K500 (51")		~		12,790	
Kayserburg KA-132 (52")		✓		16,190	Lovely, singing tone.
Knabe, Wm., WKV132MD (52")		~	/	9,798	
Pearl River EU122 (48")				5,790	
Perzina GP-122 (48")		1		9.090	
Perzina GP-130 (51")		~		11,460	A vertical piano that can hold its own against some far more expensive peers.
Petrof P125F1 (49.25")				19,900	
Ritmüller UH-121RA (48")		1	/	7,990	One of our favorite vertical pianos at this price.
Schimmel K132 (52")		1		36,664	
Schulze Pollmann SU122A (48")		~		10,390	A warm, round tone quality and beautiful case finishes.
Yamaha U1 (48")	1			11,399	The standard against which every 48" vertical is inevitably compared.
Grands 4' 10"–5' 4"					
Cunningham Studio Grand (5' 4")		V	~	20,890	
Geyer, A. GG-150 (4' 11")			✓	9,590	
Ritmüller GH-148R (4' 10")		~	/	11,990	Amazingly good performance for such a small piano.
Seiler, Johannes, GS-160 (5' 3")		V	~	18,798	Pleasantly mellow with an elegant look.
Story & Clark H60A (5' 3")			~	17,495	When you take into account all the technology it comes with (player piano and MIDI record), this piano is a great value.
Weber W150 (4' 11")		V	~	11,580	Surprisingly musical and satisfying tone for such a short grand.
Grands 5' 5"–5' 11"					
Baldwin BP178 (5' 10")			/	23,390	
Estonia L168 (5' 6")		/	✓	39,608	Estonia grands are an excellent value among high-end pianos.
Hailun HG178 (5' 10")		/	/	19,416	
Kawai GX-2BLK (5' 11")	V			34,990	A must-try for those shopping for a grand under 6' long. (continued

Brand/Model	Classics/ Perennial Favorites	Musical Standouts	Good Values	Price (\$)	Comments
ACOUSTIC PIANOS (continued) Grands 5' 5"-5' 11" (continued)					
Mason & Hamlin A (5' 8")	~			61,255	
Perzina GBT-175 (5' 10")			~	19,640	Nicely balanced scale. Some of the nicest wood-veneer case finishes we've seen at this price.
Pramberger PS-175 (5' 9")			~	15,598	
Steinway & Sons M (5' 7")	/			74,300	
Steinway & Sons O (5' 10.5")	/			83,300	
Grands 6'-6' 10"					
				27.700	
Baldwin BP190 (6' 3")				27,790	
Bösendorfer 200 (6' 7")	/			136,998	A lovely and distinct chamber instrument.
Brodmann PE187 (6' 2")		/	/	20,380	Design said to be based on that of a Steinway model A.
Estonia L190 (6' 3") Estonia L210 (6' 10")		/	/	48,139	The tone has lyrical beauty and is without harshness.
, ,		•		57,949	
Förster, August, 190 (6' 4")		1		63,578	
Grotrian Cabinet Grand (6' 3")				93,946	Uniquely diverse timbre. Subject of book Grand Obsession, by Perry Knize.
Haessler 186 (6' 1")		/		74,233	
Mason & Hamlin AA (6' 4")				69,779	
Seiler ED-186 (6' 2")		/		33,198	Clear treble tone and good sustain.
Steinway & Sons A (6' 2")				96,200	Call Chall have of the control of the
Weber W185 (6' 1")		1		16,980	Satisfyingly beautiful tone at a good price.
Yamaha C3X (6' 1")	/			52,298	A workhorse in countless teaching studios and institutional practice rooms.
Yamaha C5X (6' 7")		/		58,098	
Grands over 6' 10"					
Blüthner 2 (7' 8")		/		125,033	
Bosendorfer 214VC (7')		~		150,998	Updated design combines improved projection with classic Bosendorfer sound.
Boston GP215PE (7' 1")		/		52,950	
Kawai, Shigeru, SK-6 (7')		/		78,600	
Mason & Hamlin BB (7')		~		79,047	Prodigious bass register sounds like that of a concert grand.
Sauter 220 "Omega" (7' 3")		~		135,000	An incredibly capable tool for any serious pianist—and for fun, take a look under the lid.
Schimmel C213 (7')		/		63,796	
Schimmel K219 (7' 2")		~		82,796	A fantastic instrument from Schimmel's new Konzert series.
Wilh. Steinberg Signature 212 (6' 11")		"		60,980	
Steingraeber & Söhne C212 (7')		/		133,041	Remarkable tonal subtlety.
Steinway & Sons B (6' 10.5")	V	V		108,700	Very popular model in college and conservatory teaching studios, and the standard against which other high-end grands are measured.
Yamaha C7X (7' 6")	1			74,698	Very popular in recording studios; musically versatile in the hands of the right technician.
Yamaha CF6 (7')		/		119,598	A 7' grand that can compete with the best in the world.

(continued)

Brand/Model	Classics/ Perennial Favorites	Musical Standouts	Good Values	Price (\$)	Comments
DIGITALS & HYBRIDS					
Blüthner e-Klavier PRO-88 EX		V		3,326	An interestingly-styled slab with a unique piano sample.
Casio CGP-700			/	799	Huge feature set and powerful speaker system.
Casio Privia PX-5S			~	999	A professional instrument at a consumer price.
Casio Privia PX-160	~		~	499	One of the first models mentioned when considering better entry-level digital pianos.
Casio Privia PX-870			~	999	Impressive sound from a shallow cabinet.
Kawai ES8		~		1,999	A no-frills slab that performs better than many console-style digital pianos.
Kawai CN37				2,599	New display and samples are a noteworthy improvement over the previous model CN35.
Kawai CA98		~		5,355	Solid action performance, Soundboard Speaker System, and nice variety of piano samples.
Kawai VPC1		V		1,849	Not a digital per se, but rather a dedicated controller keyboard for software (virtual) pianos, with Kawai's great RM3II action.
Kurzweil CUP-2		~		2,999	An extremely compact contemporary design conceals a wealth of voices and features.
Roland FP-30			V	699	A fine example of high-end piano sound generation trickling down to an economy model.
Roland HP601				2,199	A way-above-average starter instrument with Ivory Feel keyboard.
Roland V-Piano Grand (GP-7)	~			19,950	Enclosed in an elegant grand-piano cabinet, the V-Piano gives you the technology to design your own piano.
Yamaha Clavinova CLP-645		~		3,500	Premium features like wooden keys and bi-amped speaker system in a midrange model
Yamaha Clavinova CVP-705		~		6,455	A price/performance sweet spot in ensemble digital pianos.
Yamaha Arius YDP-184	V		1	2,200	A direct descendant of the venerable YDP-223 from 2002. A perennial best-seller.
Yamaha AvantGrand N2/N3X		V		12,635/ 18,816	A game changer that redefined our expectations for the sound and feel of a non-acoustic piano.

from that that you will necessarily like them as much as we do. Our recommendations also say virtually nothing about brands and models that are *not* on the list. Either we haven't had the opportunity to try them out (or, at least, not under favorable conditions), or they just didn't stand out to us as being really special—but that doesn't mean there's anything wrong with them, or that you wouldn't want to take one home with you.

This list focuses on home- and studio-size instruments and does not include concert grands. A work in progress, it is by no means comprehensive, and will likely grow and evolve with future issues of *Piano Buyer*.

Classics/Perennial Favorites are models with a long-standing reputation for performance and durability. They are generally top sellers from well-known manufacturers.

Musical Standouts represent pianos that play and sound great to us. Although the list understandably tends to favor larger instruments, we've also included several smaller models that are noteworthy for having great sound for their size.

Good Values are pianos whose performance per dollar, in our opinion, is particularly attractive.

Vertical piano sizes are shown in inches, grand piano sizes in feet and inches. Prices shown for acoustic pianos are the Suggested Maximum Prices (SMP) of the least expensive style and finish (significant discounts from these prices are likely—see page 194 for explanation). Prices shown for digitals and hybrids are the Estimated Prices of the least expensive finish (see page 255 for explanation).



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UH121RA

Straight Leg Studio Upright Ebony Polish



UH 132R

Concert Upright Ebony Polish



GH 148R

Premium Baby Grand Ebony Polish, Mahogany Polish-Sapele



GH 160R

Ebony Polish Mahogany Polish-Sapele



GH 170R

5'7" Premium Living Room Grand Ebony Polish



GH 188R



GH212R

Premium Recital Hall Grand Ebony Polish



GH 275R

9' Premium Concert Ebony

PERFORMANCE Series >



Studio



Ebony Polish



Conventional Grand Piano

Ebony Polish, Mahogany Polish White Polish





R9

Conventional Medium Grand Ebony Polish,



CLASSIC Series >

UP110RB

43" French Provincial. Cherry Satin



UP110RB1

Continental Walnut Satin



UP120RE

Institutional Mahogany Satin



UP121RB

Studio Upright Ebony Polish, Mahogany Polish White Polish









THE VERTICAL PIANO IS NOT DEAD

Seiler Brings Premium Action Technology to the Mid-priced ED Series

DR. OWEN LOVELL

iano geeks, digital-piano zealots, and members of the piano industry in general often speak of the imminent demise of the acoustic vertical, aka upright, piano. They talk about how inexpensive small grand pianos have become, and about improvements in the simulated grand-piano actions and concertgrand sound samples of digital pianos. Quite correctly, they point out the inherent differences in how sound propagates from a grand piano compared to the "boxedin" design of a vertical, and of the significant design differences between vertical and grand actions: Assisted by gravity, and able to repeat without their keys having to completely return to rest position, grands are typically capable of faster, more reliable repetition than verticals, which rely on springs to assist in resetting the action.

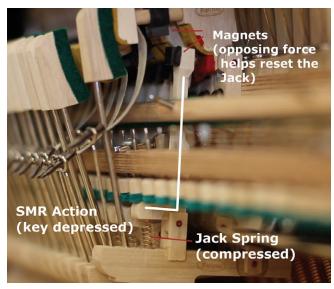
Allow me to offer an opposing and admittedly snobby viewpoint. The smallest grand pianos, especially those that are wider than they are long, tend to look awkward and toylike. They tend not to have smooth tonal transitions between registers, especially from their plain-wire treble strings to the copper-wound bass strings. With only a

couple of exceptions (see Piano Buyer's "Staff Picks" for examples), their bass registers are typically poor, with upper-bass bichords (notes with two strings) whose strings are sonically mismatched, and low-bass monochords (one string per note) whose fundamental pitches are unclear or entirely missing. Entry-level

the feel of a grand piano have certainly improved, but I don't know a professional pianist who really thinks playing one of these actions is the same experience as playing an acoustic piano. Improved sound samples can sound really good through headphones, but the speaker systems of digital pianos can be disappointingly unrealistic compared with the resonant, visceral, decidedly analog experience of playing a good acoustic piano. However, save for a few low-production, esoteric designs that can be found only in expensive instruments, I can't refute the fact of the inherent limitations of the standard vertical-piano action.

At this year's National Association of Music Merchants (NAMM) trade show in Anaheim, California, parent company Samick invited me to sample their new Seiler model ED-132M, a tall (52") vertical piano from this well-known manufacturer's midrange line. This piano was equipped with Seiler's proprietary Super Magnet Repetition (SMR)





Seiler's Super Magnet Repetition (SMR) action



Online readers: watch the video showing how the SMR action works.

action, an option that had previously been available only on their best vertical model at a much higher price.

SMR is a wonderfully simple system that requires no additional maintenance and adds no moving parts to the vertical piano action. Its principle of operation involves magnets of opposed polarity that move closer to one another when a key is pressed and the action cycles. One magnet is attached to the jack, the other to the catcher (see illustration). As the jack pushes the hammer into motion and reaches the point of "escapement" (power release), the jack's magnet gets close enough to the catcher's magnet to produce an opposing force that resets the jack more quickly when the key is released.

The principle of the system was demonstrated to me at the NAMM show by Joe Swenson, Samick's head technician for the U.S. market. With the case disassembled, I could see the parts, and was even able to cycle them by hand and feel the moment when they got close enough to trigger the magnetic effect. Swenson explained that since the 1990s, when the SMR action was introduced, its reliability has been improved by further securing the magnets to the wooden parts with dado joints, in addition to the glue bonding previously used.

With the explanations out of the way, I was able to get after-hours access to Seiler's room at the NAMM show—away from the crowds, noise, and company representatives—to see whether this system made a real improvement or was just a lot of hype. Extremely helpful for this test was the presence, right next to the ED-132M, of a brand-new model ED-132—the same model, but

without the optional SMR action. If you're skeptical that the regular piano may have been poorly regulated for the purposes of my review, I can verify that a dealer liked it well enough that, by the show's second day, the piano was marked "sold."

For the next hour, I just practiced. I tried bits of whatever was in my fingers—snippets of a J.S. Bach keyboard concerto, some Albéniz, the trilled opening of Debussy's L'Isle Joyeuse, and an ornamented early-classical sonata. The ED-132M was unfazed, and my playing of these pieces, which tend to demand a lot from an instrument, was never hindered by an inability of the action to repeat quickly and reliably. At some point I turned to just playing, quickly and evenly, repeated note sequences with fingerings that intermediate and advanced pianists use all the time: "3-2-1" or "4-3-2-1" patterns on the same note. On the regular ED-132 I got fairly consistent repetition throughout the instrument's range, but occasionally I'd lose the attack of one or two consecutive fingers because the action couldn't reset as fast as my fingers demanded—a problem experienced with most vertical pianos, and even with grands that could be better regulated. On the ED-132M, however, I experienced reliable repetition with both my dominant and nondominant hands, from the low bass through the top of the treble. The SMR system definitely improved one of the most commonly cited shortcomings of the vertical piano.

In every other way, the Seiler ED-132M sounded, felt, and looked like any other tall Seiler vertical, with a satisfying evenness of timbre and fullness of tone, particularly in the low bass, that most small grand pianos can't match. The two ED-132 models are facsimiles of the company's completely German-built and widely respected SE-132; however, the ED-series pianos are built in Samick's Indonesian factory using materials sourced both from Germany and Asia, for significant cost savings. As with their ED-186 grand, I've found well-prepared examples of the ED-132 able to credibly duplicate the clear, distinct tone of the higher-priced German model on which it's based.

We live in an era in which downsizing of living spaces is common. As piano owners in the U.S. market consider the possibility of smaller living spaces and music rooms, Seiler's SMR-equipped instruments can provide a means of enhancing the action performance of a vertical piano in a way that requires less of a compromise when compared to a grand. As this premium technology trickles down to mid-level models at affordable prices, more customers can take advantage of a unique option worth their serious consideration.

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(This article is adapted from Chapter 5, "Buying a Used Piano," of The Piano Book, Fourth Edition, by Larry Fine. Before reading this article, be sure to read "Piano Buying Basics"—especially the section "New or Used?"—elsewhere in this publication.)

What to Buy: A Historical Overview

1700-1880

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



Cristofori Piano, circa 1720

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

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

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

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

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



Square Grand, 19th Century

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

ollogA Jewett Baldwin Kimhall **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 Steinway & Sons Hamilton Heintzman Chas. Stieff Hume Vose & Sons Ibach Weber Ivers & Pond Wing

and fancy features, 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



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

of small firms turned out millions of pianos during this time; in fact, far more pianos were made annually then than are made today. If you're shopping for a used full-size upright or a grand, some of the pianos you'll see will probably be from this period. Smaller pianos weren't introduced until later. Although some well-preserved instruments from this period may be usable as is, most will need rebuilding, or at least reconditioning.

Those in the market for a used piano often ask for recommendations of specific brands from this period. This is a problem, because the present condition of the piano, the kind of use you'll be giving it, and the cost of the piano and repairs are far more important factors than the brand when considering the purchase of an old piano. Even a piano of the best brand, if poorly maintained or badly repaired, can be an unwise purchase. 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 playerpiano 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 "graymarket" 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 prices significantly lower than those of new Yamahas or Kawais. 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 climate, 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 somewhat exaggerated. There probably is a 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, while there have been problems, particularly in sections of the country with temperature and humidity extremes, I haven't found evidence of anything close to an epidemic. 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/ussub/pianos/SerialNumberlookup.aspx) 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 postwar period, and you'll sometimes find used pianos from this period, still in reasonably good condition or needing some reconditioning, from such brands as Steinway, Baldwin, Mason & Hamlin, Sohmer, Everett, Knabe, and Wurlitzer.

1960-Present

In the 1960s, the Japanese began exporting pianos to the U.S. in large numbers. Although at first they had some difficulty building pianos to

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

Please see the article "The New-Piano Market Today" for more information on the post-1960 period. See also the article "Advice About Used Pianos for Parents of Young Beginning Piano Students" for a list of specific brands of this period to avoid.

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.

CRACKED SOUNDBOARDS: MYTH and REALITY

Solid spruce soundboards swell and shrink with seasonal changes in humidity and, over time, can develop cracks. One of the problems that comes up most frequently in buying a used piano is judging the significance of a cracked soundboard.

Contrary to popular belief, cracks in the soundboard, while often unattractive, are not necessarily important, as long as the tone is acceptable. Very extensive cracking, however, can indicate that the piano has suffered great climatic extremes, and that its life expectancy may be short. In such a case, other symptoms of this will usually be evident elsewhere in the piano. If the cracks have been filled with wooden shims, this means that, at some point, the piano was rebuilt and the cracks repaired.

The ribs run perpendicular to the grain of the soundboard, and therefore perpendicular to any cracks. Any separation of a rib from the soundboard at a crack is a potential source of buzzing noises. A piano with a cracked soundboard should be carefully checked for rib separations before purchase. Repair of rib separations can usually be done at reasonable cost without rebuilding the piano.

When manufactured, the soundboard has built into it a curvature or crown. In a traditionally made, solid spruce soundboard, the crown is maintained by the compression of the wood fibers, whose elasticity causes the crowned soundboard to push back against the downbearing pressure of the strings on the bridges. Together, these two opposing forces enhance the tone of the piano. Over many years, because of the drying out of the wood and the loss of the wood's elasticity, the soundboard loses some or all of its crown, a condition that can be accompanied by the appearance of cracks.

A related condition is that of compression ridges. When a soundboard's compression exceeds the elastic limit of the wood fibers, those fibers may become crushed, producing slightly raised ridges in the soundboard's surface. This can happen, for example, in humid climates, or due to conditions related to the soundboard's manufacture. Compression ridges are quite common, and do not necessarily affect the piano's tone. However, when crushed, wood fibers lose their elastic properties, so the compression ridges are likely to turn into cracks as the soundboard's crown diminishes over time.

Although, in theory, cracks and a loss of crown should result in a deterioration of tonal quality, the actual results vary greatly from piano to piano; therefore, the tone quality of each such instrument must be evaluated on its own merits. In addition, your tolerance for such imperfections will depend on how expensive the piano is, and on your use of and expectations for it.

For more information on this subject, see *The Piano Book*.

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 noncommercial, within driving distance of your home. That way, you can more easily try out the piano, develop a faceto-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 classifiedad 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 our own Piano Buyer Classifieds (www.pianobuyer.com), which uses the Pianomart database and search engine. These sites either charge a monthly fee to list or a small commission upon sale, but are free to buyers.

You'll also find pianos for sale on the Internet auction site eBay. Search on a variety of keywords, as each keyword will bring up a different group of pianos for sale. This can be frustrating, as either too broad or too specific a search term may yield unsatisfactory results. The bidding process generally provides a window of time during which you can contact the seller for more information, see the piano, and have it inspected before placing a bid. This is definitely not a good way to buy a piano unless

you have the opportunity to first try out the piano and have it inspected. On both eBay and the classified-ad sites mentioned above, many listings that appear to be non-commercial will actually turn out to have been placed by commercial sellers, who may have many more pianos for sale than the one in the ad you answered.

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

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





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To locate your closest dealership, please visit www.perzina-america.com Or call Marti Gordon at Perzina Pianos America on (541) 639-3093 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



Restoring the piano case to like-new condition

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 longdistance 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



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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.



Gluing a new soundboard into the rim of a grand piano

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 nonstructural 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

In practice, however, it may involve much less, depending on the needs and value of the particular instrument, the amount of money available, and the scrupulousness of the rebuilder. Restringing the piano and

replacing the pinblock in a grand, as well as repairing or replacing the soundboard, would typically be parts of a rebuilding job. In the action, rebuilding would include replacing the hammer heads, damper felts,

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and key bushings, and replacing or completely overhauling other sets of parts as well. Refinishing the piano case is also generally part of the rebuilding process. Because of the confusion over the definitions of these terms, sometimes the term *remanufacturing* is used to distinguish the most complete rebuilding job possible—including replacement of the soundboard—from a lesser "rebuilding." However, there is no substitute for requesting from the technician an itemization of the work performed.

When considering buying a rebuilt piano, or having a piano rebuilt, particularly an expensive one, the rebuilder's experience level should count heavily in your decision. The complete rebuilding of a piano requires many dissimilar skills. The skills required for installing a soundboard, for example, are very different from those required for

installing a new set of hammers or for regulating the action. Mastering all of these skills can take a very long time. In a sense, you should be shopping for the rebuilder as much as for the piano.

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

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

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

"Vintage" . . . or New?

"Vintage" pianos are those made during the golden years of pianomaking 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 Steinways by Steinway & Sons itself for rebuilding in its factory.

What makes these vintage pianos so alluring? Many musicians and

technicians believe that these instruments, when rebuilt, sound and play better than new pianos. However, no one knows for sure why this should be so, since most of the components in the piano are replaced during rebuilding. Some point to the fact that Steinway operated its own plate foundry until about World War II, afterward using a commercial plate foundry (which it now owns). Because this radical change in the manufacture of such an important component roughly corresponds with the end of the vintage era, and because the plate is one of the few original parts to survive the rebuilding process, some speculate that it holds the key to the difference. Others say it has to do with changes in the quality of the wood available to Steinway and

other companies. Still others say it wasn't any single thing, but rather a combination of many fortuitous factors, including extremely skilled and talented craftsmen, that enabled these companies to make such special pianos during that period, but allegedly not afterward (though that doesn't explain why the rebuilt ones from that period should be better).

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

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

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

How Much Is It Worth?

The valuation of used pianos is difficult. Prices of used pianos vary

	PRIC	CES OF USED PIANOS ((US\$)			
		Private Seller			Dealer	
	Worse	Average	Better	Reconditioned	Rebuilt	
Vertical, pre-1950, average brand	0-300	0-600	300-1,000	1,000-1,500	N/A	
Vertical, pre-1950, better brand	0–500	300-1,200	700–1,200	1,200-2,000	N/A	
Vertical, pre-1950, best brand	500-2,000	1,000-3,500	2,000-5,000	3,000-6,000	N/A	
Vertical, 1950-1985, average brand	0–600	400-1,000	1,000-2,000	1,200-2,500	N/A	
Vertical, 1950-1985, better brand	0–800	700-1,500	1,000-2,500	2,000-4,500	N/A	
Vertical, 1950-1985, best brand	700–2,000	1,500-4,000	2,000-5,000	4,000-7,000	N/A	
Vertical, 1985-		Us	e Depreciation Sch	nedule		
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	3,000-4,500	N/A	
Grand, pre-1950, average brand, 7'	800–1,500	1,500–3,500	3,000–5,000	4,000–7,000	N/A	
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	2,000-4,000	3,000-6,000	7,000-10,000	15,000-25,000	
Grand, pre-1950, better brand, 7'	1,800–3,500	3,500-7,000	5,000-10,000	8,000-15,000	18,000–30,000	
Grand, pre-1950, best brand, 5'	3,000-6,000	6,000-9,000	8,000-18,000	15,000-23,000	18,000-35,000	
Grand, pre-1950, best brand, 6'	6,000-8,000	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	22,000–35,000	20,000-40,000	35,000-65,000	
Grand, 1950-1985, average brand, 5'	500-1,200	1,000-2,500	1,500-3,000	3,000-5,000	N/A	
Grand, 1950-1985, average brand, 6'	500-2,000	2,000-3,000	3,000-5,000	3,500-6,000	N/A	
Grand, 1950-1985, average brand, 7'	1,500-3,000	2,500-4,000	4,000-6,000	4,000-8,000	N/A	
Grand, 1950-1985, better brand, 5'	800-2,000	2,000-4,000	2,000-6,000	5,000-9,000	N/A	
Grand, 1950-1985, better brand, 6'	1,500-3,000	2,500-5,000	4,000-8,000	8,000-12,000	12,000-22,000	
Grand, 1950-1985, better brand, 7'	2,500-5,000	5,000-9,000	8,000-13,000	10,000-20,000	15,000-30,000	
Grand, 1950-1985, best brand, 5'	4,000-9,000	7,000-14,000	9,000-18,000	15,000-21,000	20,000-35,000	
Grand, 1950-1985, best brand, 6'	6,000-10,000	8,000-15,000	12,000-20,000	20,000-28,000	28,000-50,000	
Grand, 1950-1985, best brand, 7'	8,000-12,000	14,000-22,000	18,000-28,000	20,000-40,000	35,000-65,000	
Grand, 1985-		Us	e Depreciation Sch	nedule		

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 vear (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

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.

wildly, depending on local economies, supply and demand, and the cosmetics and playing condition of the instrument at hand, including the amount and quality of any restoration work done. As if this weren't enough, it's almost a certainty that no two piano technicians or piano salespeople would return exactly the same verdict on any given piano's value. Art being what it is, beauty is in the eye and ear of the potential purchaser, and values are very much subjective.

In addition, 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.

In this article, I've tried to assemble some information and tools to help buyers and sellers understand

the appraisal process and determine the value of a piano within a reasonable range.

Fair market value is the price at which an item would change hands between a willing buyer and a willing seller, neither of whom is compelled to buy or sell, and each of whom has reasonable knowledge of the relevant facts.

Appraisers of used pianos and other consumer goods typically use three different methods to determine fair market value: comparable sales, depreciation, and idealized value minus the cost of restoration.

Comparable Sales

The comparable sales method compares the piano being appraised with recent actual selling prices of other pianos of like brand, model, age, condition, and location. Generally speaking, this is the most accurate method of determining value when one has access to a body of information on recent sale prices of comparable items. The problem here is that, with few exceptions, it's rare to find several recently sold pianos that are perfect matches for all these criteria. There is no central repository for sales information on used pianos, and each appraiser or technician, over a lifetime, sees pianos that are so diverse and scattered as to these criteria that they are likely to be of only limited value as appraisal guides. (Exceptions might be technicians or dealers who specialize in used Yamaha, Kawai, or Steinway pianos, brands that have attained near-commodity status in the piano business.)

To handle this problem, I and my staff have attempted to approximate the fair market value of pianos of various types, ages, and conditions by querying a number of piano technicians about their memories of comparable sales. The result is the accompanying chart, "Prices of Used Pianos," though I stress that we do not have enough data to do

more than make rough estimates. This chart is most useful for determining the approximate value of many brands of older piano for which it would otherwise be difficult to find enough comparable sales to determine a value. Understandably, however, the price ranges shown in the chart are quite broad. The chart is organized by categories of vertical and grand piano broken down by age (pre-1950 and 1950-1985), quality (Average, Better, Best), and condition (Worse, Average, Better, Reconditioned, and Rebuilt). For prices of pianos made since 1985, I suggest using the depreciation method, described later in this article.

The price ranges given reflect the wide possibilities a buyer faces in the used-piano market. At the low end of each range is a price one might find in a poor economy or a "buyer's market," where supply exceeds demand. At the high end, the prices are consistent with both a better economy and a higher demand for the type of instrument indicated. In some categories, the prices we received from our sources varied all over the map, and we had to use a considerable amount of editorial discretion to produce price ranges that were not so broad as to be useless as guidelines, and to retain at least a modicum of internal consistency 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 1950–1985 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 furnitureconscious buyer to obtain a bargain.

For a discussion of the definitions of reconditioned and rebuilt, please see the section "Buying a Restored Piano" in this article. For the purposes of this chart, however, we have adopted the requirement that a piano has not been rebuilt unless its pinblock has been replaced, and that a piano that has been restrung, but without a new pinblock, is considered to have been reconditioned. Note

that these definitions are not precise, and that both the quality and the quantity of the work can vary greatly, depending on the needs of the instrument and the capabilities of the restorer. These variations should be taken into account when determining the piano's value.

Depreciation

The depreciation method of determining fair market value is based on the fact that many types of consumer goods lose value over time at a more or less predictable rate. A depreciation schedule, such as the one here, shows how much an unrestored used piano is worth as a percentage of the actual selling price of a new piano of comparable

DEPRI	ECIATION	SCHEDULE					
Age	Percent of						
in Years	New Value						
	Worse	Average	Better				
5 or less	70	75	80				
10	60	65	70				
15	45	50	55				
20	35	40	45				
25	25	30	35				
30	20	25	30				
Verticals only	,						
50	5	10	15				
70	0	5	10				
Grands only							
50	10	15	20				
70	5	10	15				
Steinways							
5 or less	70	75	80				
10	60	65	70				
15	50	55	60				
20	40	45	50				
25	30	35	40				
30	25	30	35				
Verticals only	,						
50	5	10	15				
70	5	10	15				
Grands only	Grands only						
50	15	20	25				
70	10	15	20				

quality. The problem here is that so many older brands are now made by companies different from the original, in different factories and parts of the world, and to different standards, that it can be difficult or impossible to determine what constitutes a "comparable" new piano. Thus, this method of figuring value is best used for pianos of relatively recent make when the model is still in production, or for older pianos whose makers have remained under relatively constant ownership, location, and standards, and for which, therefore, a comparable model can reasonably be determined.

Note that depreciation is from the *current* price of the model, not the original price, because the current price takes into account inflation and, if applicable, changes in the value of foreign currencies. The values are meant to reflect what the piano would sell for between *private*, *non-commercial parties*. I 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 observation 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, or some of the best European brands, may command prices between the regular and Steinway figures.

Idealized Value Minus the Cost of Restoration

This is the difference between the cost of a rebuilt piano and the cost to restore the unrebuilt one to like-new condition. For example, if a piano, rebuilt, would be worth \$50,000, and it would cost \$30,000 to restore the unrebuilt one to like-new condition, then according to this method the unrebuilt piano would be worth \$20,000. This method can be used when a piano needs extensive, quantifiable repair work. It's not appropriate to use this method for an instrument that is relatively new or in good condition.

Other Types of Valuation

Several other types of valuation are sometimes called for:

Replacement value is what it would cost to replace the used piano with a brand-new one. This value is often sought when someone has purchased an insurance policy with a rider that guarantees replacement of a lost or damaged piano with a new one instead of paying the fair market value of the used one. The problem here, again, is what brand and model of new piano to consider "comparable" if the original brand and model are no longer being made, or are not being made to the same standards.

Here it may be helpful to consult the rating chart in the Piano Buyer article "The New-Piano Market Today." Choose a brand whose relationship to today's piano market is similar to that the original brand bore to the piano market of its day. Whatever brand and model you choose, depending on how high a replacement value you seek, you can use either the manufacturer's suggested retail price (highest), the approximate street price (lowest), or something in between. These prices, or information on how to estimate them, can be found in the "Model & Pricing Guide."



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Trade-in value is what a commercial seller would pay for the used piano, usually in trade (or partial trade) for a new one. This is discounted from the fair market value, typically by at least 20 to 30 percent, to allow the commercial seller to make a profit when reselling the instrument. (In practice, the commercial seller will often pay the fair market value for the used piano, but to compensate, will increase the price of the new piano to the consumer.)

Salvage value is what a dealer. technician, or rebuilder would pay for a piano that is essentially unplayable or unserviceable and in need of restoration. It can be determined using the idealized-value-minus-cost-of-restoration method, but discounted, like trade-in value, to allow the commercial seller to make a profit.

Inspect, Inspect, Inspect

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

More Information

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

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

Advice About Used Pianos

For Parents of Young Beginning Piano Students

SALLY PHILLIPS



here are many common misconceptions about buying pianos for young students, and one of them is that a suitable piano can be had for only a few hundred dollars. The truth is that, to progress, young students need *better* pianos, not worse.

Parents may not want to invest a lot of money in a piano—after all, the child may lose interest—so an older, cheaper piano may seem the logical place to start. However, a bad purchasing decision at this point in a student's learning tends to be a self-fulfilling prophecy. In many cases a piano that is too old, too small, or simply not good enough will soon become useless to the student. Students don't have enough experience to distinguish between a bad piano and their own lack of ability. When a piano's action can't be regulated to the correct touch, or its strings tuned to a harmonious sound, the student, unable to duplicate what was taught in a lesson, will become frustrated and discouraged, and will lose interest. No amount of practice on such an instrument can overcome its shortcomings. And when you include other factors—the costs of moving, tuning, and repairs; an older piano's shorter remaining life; lack of warranty protection; the need to hire experts to make repeated trips to evaluate the conditions of various older pianos—a new or more recently made instrument may start to look like a bargain in the long run.

For these reasons, I would encourage the financially able family to look at good-quality new pianos, or better used pianos no more than 15 years old. And with a young talented student, moving up to a quality grand is never a mistake. If an older piano is chosen, it should be one that was of good quality to begin with, and has been restored to like-new condition. If you're concerned

about a child's continuing interest, I suggest renting a new instrument now, with an option to purchase it later. Most reputable piano dealers offer month-to-month rental programs.

Although good *and* bad pianos have been made in every decade, and every used piano must be evaluated on its own merits, certain decades or categories of piano frequently found in today's used-piano market should raise red flags:

Old uprights—These are usually 48" to 60" high and somewhere around 100 years old. Many buyers will purchase an old upright with the idea that it might have antique value, then quickly find out that it doesn't. In some instances, buyers fascinated by old uprights see them as an opportunity to tinker with and learn something about pianos. There's nothing wrong with this—as long as a young student is not saddled with it.

Most pianos that are a century old and have not been discarded will need extensive restoration before they can be useful to the student, but few are worth enough to have such work performed on them. Many have dif-



ficulty holding a tuning, and/or desperately need new strings, hammers, dampers, pedal repairs—or all of the above. Parents who purchase these deteriorating instruments as practice pianos for beginners will probably face a constant stream of complaints and subsequent repairs. In most cases, this category of used piano should be avoided for use in serious practice.

PIANO BRANDS TO AVOID

Here are some brand names from the 1960s, '70s, and '80s—and others from a little earlier and later—that are probably best avoided by students, though some may be acceptable for casual use if carefully serviced or reconditioned.

Aeolian

The following were some of the many brand names owned and made by the Aeolian Corporation, which went out of business in 1985. Many of these, and other names not listed, were "stencil pianos"—essentially identical instruments with different names applied to them, to meet dealers' needs. Note that this list applies to the use of these names only during the mid to late 1900s. Some of these names were used in earlier periods on fine pianos, and several are still being used today, but on pianos that have no connection to the ones warned about here.

Bradbury J. & C. Fischer
Cable Kranich & Bach
Duo Art Melodigrand
George Steck Pianola
Hallet, Davis & Co. Poole
Hardman, Peck & Co. Vose & Sons
Henry F. Miller Winter & Co.
Ivers & Pond

Other U.S.-made brands of the period

Betsy Ross (by Lester) Kincaid (by Grand)

Brambach (by Kohler & La Petite (by Kimball)

Campbell) Lester

Currier Marantz (by Grand/

Estey Marantz)

Grand Rudolf Wurlitzer

Gulbransen (by Wurlitzer)

Hobart M. Cable (by Story & Clark) Westbrook (by Currier)

Jesse French (by Grand) Whitney (by Kimball)

Foreign-made brands of the period

Belarus (Belarus) Sojin (Korea)
Daewoo (Korea) Suzuki (China)
Horugel (Korea) Tokai (Japan)

J. Strauss (various countries)

Small, cheap, American-made pianos from the 1960s, '70s, and '80s—During this period, American companies started feeling the competition from Japanese (and, later, Korean) makers who could undercut their prices. The result was that the few remaining American makers of inexpensive pianos began to cut as much cost as they could from their production. In addition, small pianos, especially spinets, were heavily promoted for their cabinet styling at the expense of their musical qualities.

Spinets, which are 36" to 40" high, have a recessed, or "drop," action that is connected to the keys with long "stickers" of wood or metal. These actions are difficult—and thus expensive—to repair. Also, during the 1950s and early '60s, many spinet actions were manufactured with connecting parts, called "elbows," made of plastic—a technology then in its infancy—which eventually deteriorated and broke off. Installing a set of replacement elbows can cost hundreds of dollars.

Spinets were usually the least expensive entry-level pianos a company would manufacture, and most are not worth repairing. Many of these small, cheap pianos were so poorly designed and constructed that, even when new, and regulated and tuned as well as possible, they played poorly and sounded terrible.

The first wave of pianos from this era began to enter the used-piano market in the 1980s, as the people who originally purchased them began to retire. But many others were passed on to this generation's children, and now, as those children retire, a second wave of these instruments is entering the market. Even pianos from this period that were well made—and there were some—are now 30 to 50 years old, and so are likely to need some restoration before they will be suitable for the student. Caution should be used to separate those that have potential as good student instruments from those that don't. (See sidebar for some of the names from this period to be avoided.)

Early offerings from Korean and Chinese makers—Korean pianos made before the early 1990s, and Chinese pianos from before the early 2000s, often exhibit unpredictable, idiosyncratic problems. Quality control was erratic, and wood was often not properly seasoned, resulting in sticking keys and binding cabinet parts. Replacement parts can be difficult to obtain. Especially problematic were the small console pianos without legs

(continental furniture style). These pianos tend to be plagued with sticking keys that repeat too slowly due to poor action design, a problem that can't be inexpensively corrected.

Of course, the used-piano market also offers many well-made pianos from the past, including some with famous names, that are of potential value to a student, but these can also present pitfalls for the unwary. Don't buy, without professional guidance, a piano that is not thoroughly playable and tunable, with the idea that you can simply have a few inexpensive repairs done once you get the piano home. Get repair estimates before you commit to purchasing any used piano. Every piano technician with any experience has stories of arriving at a tuning appointment to work on a newly acquired piano, only to find an unserviceable instrument. The fact that the instrument may have been rebuilt sometime in the past is not necessarily an advantage. A piano that was rebuilt 40 years ago is no better than a 40-year-old piano that has never been rebuilt, and if the rebuilding job was not competently done, it could be worse—it's more difficult to properly restore an instrument when certain critical design specifications have been modified due to a past restorer's mistakes.

Finally, don't rely on a private seller for important information about the piano you're thinking of buying. Even the best-intentioned sellers—including ones who play well—tend not to be knowledgeable about piano construction and mechanics, and may have absorbed erroneous information about the instrument, or forgotten important things about its history. Hire a piano technician to inspect any piano you're seriously considering buying. Sometimes, just a phone call to a technician will be enough to verify whether or not a particular instrument should be considered a serious candidate; if it is, the next step is an inspection by that technician.

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 the Cincinnati Symphony Orchestra, the BBC Concert Orchestra, and the Vienna Philharmonic. At present, Phillips lives in Georgia and works throughout the southeastern U.S. She can be contacted at sphillipspiano@hotmail.com.

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How did you get started in the piano business?

Back in 1977, I was working for a remodeling contractor and looking for a career change. A close friend who was a piano teacher suggested that I explore the idea of tuning and repairing pianos for a living. She put me in touch with her piano tuner, who told me about a well-known local piano technician who taught the art of piano tuning and repair. I had an interview with the gentleman, and two weeks later I was sitting in his workshop attending my first lesson. About a year later, I was laid off from my job and decided that that would be a good time to devote myself full time to servicing pianos. After 40 years in business and approximately 25,000 pianos serviced, I think I can safely say that it was a good decision. I still enjoy the work, especially the interaction with my customers, many of whom have become good friends over the years.

What was the genesis of PianoMart.com?

In the early 1980s I became fascinated with the new technology of personal computers. I purchased my first computer in 1984. Back then, there was no Windows, no mouse, and no Internet. My computer didn't even have a hard drive! To run a program, I first had to load it into the computer's Random Access Memory (RAM) from floppy disks. The monitor was a small screen with a black background and small white letters. I used a database program to create a catalog of all of my customers, tracked my income and expenses with the spreadsheet program, and created invoices and business letters using the word-processing program.

In the mid-1990s, the retail world began to change as the Internet was adapted for commercial use. I observed that there were websites for selling houses, cars, and boats, so I decided to create a website exclusively for

Note: Piano Buyer Classifieds is a cooperative venture between PianoBuyer.com and PianoMart.com. PianoMart.com owns and operates the search engine that powers the classified-ad section of PianoBuyer.com. Ads placed through either portal are displayed on both companies' websites.

—Editor



buying and selling pianos. However, I had no idea how to go about doing this. I learned that the first step was to register a unique domain name to serve as the business's Internet address. I wanted a domain name that was easy to remember and would accurately describe an online marketplace for the sale of new and used pianos. After a short period of test-marketing different domain names, I decided to call the website **PianoMart.com**.

It's difficult for me to believe, but PianoMart.com has just celebrated its 20th anniversary. The first version went online in January 1997. It was created by a friend of mine, a computer programmer, who knew the coding language of the Internet: hypertext mark-up language, or HTML. The site was very simple and was not interactive. To get content on the site quickly, I copied "PIANO FOR SALE" ads from the classified sections of several different newspapers. To get an ad posted on the site, it was necessary for the seller to e-mail me all of the piano's details and photos. Then I would manually type all of the information into the proper forms and upload them to the website via a file transfer protocol (FTP) program. Needless to say, this method became very time-consuming, especially as the popularity of the site grew and the number of ads increased.



How has the Internet changed the ways people buy and sell pianos?

Before the Internet, one of the few ways to advertise a piano for sale was to place an ad in the classified section of the local newspaper or in other, smaller publications, such as a regional *Penny Saver* or *Swap Sheet*. It was expensive, and your ad reached only a limited local readership. The larger cities—New York, Chicago, Los Angeles, and Boston—had very large selections of used pianos in the classified section at any given time, but if you lived in a small town, you might not see any used pianos advertised for several months.

The Internet has changed everything. If you're selling a piano today, you could place an ad on PianoMart.com or PianoBuyer.com and your ad has the potential of being seen by thousands of piano shoppers from around the world. Obviously, this is a good thing because it exposes your piano to more potential buyers. But there is also a downside. A piano shopper can go online today and find, for example, literally dozens of ads for the very popular Steinway Model M grand piano. Before the Internet, a piano shopper may have known about only a few Model M's, if any, for sale in his or her area, and those few pianos, if they were in good condition, were selling at premium prices. But now, because of the Internet, shoppers can be aware of nearly all the pianos of the same model available over a wide geographic area, which has the effect of both lowering the prices and making them more uniform, in turn making it harder to find an unusually good deal.

What were some of the obstacles you had to overcome in selling pianos online?

When I started PianoMart.com, only about 25 to 30% of homes had Internet access. Internet connections at that time were typically dial-up over phone lines using a modem, and the connections were painfully slow and unreliable.

In those early days of the Internet, people, with good reason, were reluctant to give out their credit-card information online. Online security and encryption protections were either not yet in place or were not as strong as they are today.

A challenging obstacle to overcome was the question of how to handle the actual transfer of funds from the buyer to the seller once an agreement to purchase had been reached, especially when they lived in different cities or states. The buyer doesn't want to pay for the piano before receiving delivery, while the seller, on the other hand, doesn't want to ship the piano to the buyer before it has been paid for. Typically, neither party has any leverage or protection during the transaction. To overcome this problem, we created our own PianoMart.com free escrow service. The buyer wires payment for the piano into our escrow account. The money is held in escrow until the piano is delivered to the buyer. When we have confirmation from the buyer or mover that the piano has been delivered, we wire the funds to the seller. This provides security for both parties. We've processed many escrow transactions over the years, and the system has worked very well.

What has been your biggest challenge?

Undoubtedly, the biggest challenge has been trying to stay one step ahead of the scammers who relentlessly assault the site almost daily. Today, most successful websites have been targeted by scammers who attempt to steal money from unsuspecting Internet users. It is a daily task for me to check the site for fraudulent ads, or respond to questions from piano sellers regarding suspicious e-mails that they have received from scammers. Unfortunately, in today's world, everyone using the Internet must be vigilant.

What are some of the scams that have appeared on your site?

There are two popular scams that we see on the site regularly. The first one works like this: Let's say that you're selling a Yamaha grand piano and your asking price is \$15,000. You receive an e-mail from someone

(the scammer) who expresses interest in your piano. The scammer tells you that he would like to buy your piano and that he will mail a cashier's check to you in the amount of \$17,000. He explains that the extra \$2,000 is for the "shipping agent," to cover the cost of moving the piano. Several days later, you will indeed receive an authentic-looking cashier's check in the mail for \$17,000, and the scammer will ask you to deposit the check and then wire the extra \$2,000 to his shipping agent. Many people mistakenly believe that a cashier's check is guaranteed to be good, so they deposit the check and then wire the funds to the shipping agent, as instructed. Then, several days later, they are notified by the bank that the check they deposited is bogus and worthless. But by this time, it's too late. The scammer has your \$2,000, and there is no way for you to get it back. They were never really interested in buying your piano, and there never was a "shipping agent."

In a second type of scam, the scammer copies an ad for a very expensive piano, including photos, from another website and then posts it on PianoMart.com, falsely representing himself as the owner of the piano. The fraudulent ad attracts a lot of attention from piano shoppers because the scammer has placed a very low asking price on it, and shoppers are aware that it should be selling for a lot more money. The scammer will tell interested buyers that they can pay for the piano when it's delivered to their home, but will ask them to pay for the shipping fee upfront. Most people wouldn't agree to this request, but scammers depend on the small percentage of people who don't see a problem with this arrangement and are willing to send them the shipping fee. Of course, the scammers were never really selling a piano, and the "shipping fee" is gone.

How can piano sellers on PianoMart.com protect themselves from a fraudulent transaction?

The e-mails that piano sellers receive from scammers are relatively easy to identify. These thieves are usually from outside the U.S., and in most cases their grammar, awkward use of language, bad spelling, and punctuation errors will be a dead giveaway. The scammers will ask very few, if any, questions about the piano's condition or history. They will want to quickly proceed with the transaction. They will offer to buy your piano sight unseen, or without having it inspected by a local piano technician. Whenever you receive an offer to buy your piano, always ask for the buyer's phone number and then actually call them. A scammer will avoid making contact on the phone, or will give you a bogus number. A scammer will make excuses as to why they cannot be reached

by phone, but a legitimate buyer will be eager to speak with you about the piano. Do not accept more than your asking price, and do not under any circumstances wire money to a "shipping agent." The safest way to buy or sell a piano on the Internet is to use the PianoMart.com free escrow service.

What would you say to someone who is uncertain about buying used?

I encourage people to explore the idea of buying a used piano instead of a new one. If you definitely want a new piano and can afford it, that's fine. But there are many exceptional values in the marketplace for used pianos in excellent condition. By buying used, it's often possible to acquire a better-quality instrument for the same price as a lower-quality brand-new piano. Parents purchase expensive new pianos hoping that their children will take lessons and develop a love for the instrument. But many times, that just doesn't happen. The kids take a few lessons, then lose interest. The piano sits untouched in the living room and becomes an expensive knickknack holder. It has probably received very little use over the years, and therefore all of the internal components show very low wear. Typically, a used piano in excellent condition may sell for one-third or one-half of the cost of the same model new. There are many, many used pianos for sale, but not enough buyers for all of those pianos, so if you're looking for a good used piano, this is a good time for you.

What other advice would you give to people who are thinking of buying or selling a used piano?

The best advice that I could give to anyone who is buying a used piano is to have it inspected and evaluated by a qualified piano technician before purchase. This type of service typically costs about \$100 and is money well spent, especially if you're buying an expensive grand piano. This becomes even more important when you're buying a piano from an out-of-town seller and are not able to inspect or play the piano yourself. I've heard of cases where people have purchased a piano from an out-of-state seller, only to be disappointed when the piano was delivered to their home. Sometimes the seller neglects to disclose major issues with the instrument, or misrepresents its condition. An inspection by a piano technician will reveal any of the piano's deficiencies and will give you the ability to make an informed decision about purchasing the instrument. A list of Registered Piano Technicians, searchable by zip code, is provided at www.ptg.org, the website of the Piano Technicians Guild.

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If you're selling a piano, I would also encourage you to have it inspected and evaluated by a piano technician, to determine a fair market value for the instrument. Most people who are selling a piano have no idea of the current used-piano market or what their piano is really worth. Several years may have passed since they bought their piano. Retail prices change every year, and this affects the value of used pianos as well. If your asking price is too high, you will price yourself out of the market and decrease your chances of selling. I have also seen piano sellers who leave money on the table because they were unaware of the true value of their instrument and their asking price was too low. Because there are over 1,500 piano ads on the site, one of the frequent comments that I hear from people is that they have used PianoMart.com as a price-comparison guide to assist them in pricing their own piano before selling it.

This probably goes without saying, but before you place your piano on the market, your piano technician should make sure that all of the keys and pedals work properly, and that the instrument has been freshly tuned. If the inside of the piano is extremely dusty or dirty, have your technician clean and vacuum it for you. Visual appearance is important to a prospective buyer. When placing an ad, include photos of the piano from several different vantage points. With an upright piano, take a photo of the keys, and remove the front panel and take

photos of the action, hammers, and strings. With a grand piano, remove the music desk, raise the lid, and take photos showing the condition of the soundboard, strings, and tuning pins. Ask your piano technician to remove the piano action, and take photos that show the condition of the hammers.

Do you have any closing comments?

Yes, I'd like to make a comment about the importance of music in our lives. One of the most valuable gifts that a parent can give to a child is the gift of music. When a child learns to play the piano, or any instrument for that matter, they are learning valuable long-term skills that will benefit them in other areas of life: discipline, creativity, concentration, manual dexterity, poise, problem solving, timing and rhythm, and a sense of accomplishment. Learning music stimulates the brain and develops spatial reasoning unlike any other activity. In my years in business, my unscientific observation has been that children who excel at playing the piano are also good students academically. I have never seen a good piano student who is failing in school. Plato said, "Education in music is most sovereign because, more than anything else, rhythm and harmony find their way into the secret places of the soul." I agree!

The Uncompromising World of High-End Pianos

SALLY PHILLIPS

hose who've found themselves in a showroom full of beautifully crafted, prestige and high-performance pianos know that the experience can be both impressive and unnerving—impressive for obvious reasons, unnerving because of the extraordinary prices these instruments command—from \$50,000 to \$150,000 or more. Sometimes, novice buyers question whether the prices are justified—or are just the result of the clever marketing of well-known brand names. In this article, I explain what sets high-end pianos apart from less costly ones that might, at least superficially, look the same, and why the higher price can be justified. This discussion should be considered general in nature, however; actual differences will depend on the specific brands and models compared, and the differences in their prices.

The Definition of Quality

In the manufacture of medium-grade pianos, the term *quality* typically refers, in large part, to *quality control*; that is, that each example of a particular model is exactly like every other example. So, in theory, a model could have a satisfactory but unexceptional tonal design, and use satisfactory materials that meet structural specifications, and if all the pianos of that model are made to the same standards, the model could be considered to be of good quality.

In the manufacture of high-end pianos, however, *quality* means something more: Each instrument is judged not on its similarities to other examples of the same model, but on its excellence as a unique musical instrument. In fact, because the natural materials that pianos are made

from are never completely uniform, and because the craftspeople who make these instruments are trained to maximize the musical potential of each instrument, any particular model of high-end piano is likely to exhibit small variations in performance characteristics from instrument to instrument.

So what do serious pianists, piano owners, piano technicians, and administrators of institutional music programs look for and expect in a high-end piano?

Tonal Quality

A piano with a singing tone, long sustain, and a wide dynamic range gives the pianist more latitude in creating musically expressive performances. The length of an



instrument's sustain is essential to the pianist's ability to make it "sing" in passages that require one note to connect with the next. In addition, the ability of a concert instrument to project to the back of today's large halls is critical to its success. Although a piano's tonal color (harmonic content) will vary depending on the tonal philosophy of the manufacturer, it should be consistent from note to note within each register, and transition smoothly from register to register across the instrument's entire range. Playing with different levels of force should produce predictable variations of tonal color and volume (see "Action Control," below). Professional pianos excel in these regards, and the technician's ability to artistically voice an instrument to bring out these elements of tone depends on the excellence of the soundboard wood, the rim stock, and the hammers.

At first, customers may feel they can't hear the difference between fine instruments and less-expensive models, but this is easily remedied with more exposure to the better instruments. Listen carefully to recordings, live concerts, and fine instruments at educational institutions, and your ear will begin to hear the difference.

Action Control

There are many opinions about the extent to which a pianist can affect the tone of a piano while playing, but it is a fact that, with the more sensitive actions of highquality instruments, the skilled pianist is able to more reliably control the speed of the hammers' attack on the strings, and thus create a wider tonal palette, giving the audience a better and more nuanced musical experience. This is readily apparent at international piano competitions, at which many pianists, playing the same works on the same piano, can nonetheless bring forth very different tonal qualities from it. The ultimate experience of action control for the artist, possible with only the finest instruments, occurs when the piano becomes a seamless extension of the pianist's thoughts and feelings—the action seems to disappear, the music seeming to rise effortlessly from the instrument without the presence of an intervening mechanism.

Amateurs also benefit by discovering that many concepts discussed by more advanced pianists, such as phrasing, legato playing, and fast and reliable repetition, are now achievable when playing actions of more sophisticated design, longer keys, and parts that can be regulated more accurately.

Service and Maintenance

Because high-end pianos are more musically sensitive than less costly ones, they may require more frequent servicing if they are to be kept at peak performance levels. But this doesn't necessarily mean that they're delicate and finicky. Most of these expensive instruments are built to be taken down, moved, and set up constantly; played with vigor for many hours a day; and tuned and serviced regularly. In my experience, after an initial settling-in period, and a good regulation and tuning, high-end pianos are actually easier to maintain than less costly ones, requiring only slight touch-up adjustments on a regular basis. This comes as a surprise to many shoppers who are concerned that the maintenance of these instruments will be costly.

The reason is that high-end pianos usually have designs and materials that make their tuning and servicing easier, more accurate, and more stable. The woods used are more carefully chosen and processed with consideration for their ability to resist environmental changes, and more robust and careful construction of the piano's structural elements result in greater tuning stability and longevity. The action regulation and voicing are more likely to be stable because of better musical preparation at the factory, and higher qualities of cloth and felt in the action and hammers. More careful design and detailing of the piano at the factory mean fewer annoying problems to deal with later on.

• • •

High-performance pianos are much more expensive than consumer-oriented models because they are so much more costly to build. Moreover, when these higher costs, along with overhead and profit, are spread over the smaller demand for this type of piano, the cost difference per instrument is greatly magnified. In the manufacture of the best pianos, few economies of scale are available.

Materials

Many of the woods used in making high-end pianos—e.g., spruce, sugar pine, hard rock maple, beech, hornbeam, ebony, poplar, and rosewood—are chosen for specific properties: ability to transmit sound, strength-to-weight ratio, density, straightness of grain, etc. Woods used for components that will be visible to the buyer, such as soundboards and case veneers, must be visually flawless as well. High-end piano hammers will have tighter specifications for the wool used in their felt, as well as for their construction, to more predictably produce the tonal goals of that manufacturer. In less-expensive instruments, substitutions of less costly materials can often be made that will still result in instruments that are satisfactory for their less-demanding, intended use. But in a premium instrument, any such substitution that would compromise the piano's tone, stability, longevity, or appearance



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cannot be tolerated. Because makers of high-end pianos demand only the very best from their suppliers of parts and materials, but do not buy in large volume, they have little leverage over prices, which continue to rise as the choicest natural materials become more scarce.

The refinements of seasoning and quartersawing wood add more cost, but are necessary for maximum stability and longevity. Logs must be air dried for years, then kiln dried to a specific moisture content, so that the wood won't warp, twist, and crack later on, after installation in a piano. Quartersawing is a method of cutting boards from logs such that the grain is oriented in a direction that results in greater dimensional stability. However, it is a very inefficient use of the log, much of which cannot be used and thus is wasted. While all piano makers season and quartersaw wood to some extent, high-end makers are more fastidious in their selection and use of lumber. This contributes to pianos whose tunings and action regulations are more stable, even when in constant use in practice rooms, teaching studios, and recital halls, and under varying climatic conditions. Less-expensive pianos made primarily for home use won't survive such conditions nearly as well.

High-end companies use the same materials in all sizes of piano they make, with no compromises on the smaller pianos. This results in very expensive smaller grands and verticals.

Some less-costly brands claim that they use the same parts or materials that high-end brands do. Even when this is technically true, there can be a world of difference in how those materials are processed and/or the parts installed. For example, some less-costly brands advertise that they use the same Renner parts in their actions as are found in some high-end brands. But the high-end companies usually disassemble the parts and reassemble them to their own, stricter specifications, then custom-install them in the pianos, taking into account slight variations in the instruments that require slight repositioning of the parts. This process is too time-consuming and expensive for lesser brands, and may call for expertise that their workers simply don't have; they're more likely to use the parts just as they come from Renner, and install them according to a general formula. While this results in instruments that are good enough for most purposes, and perhaps better than those that use lesser-quality parts, it may not allow the actions to be regulated accurately enough for the most musically demanding uses. This example also highlights the error consumers make when comparing brands solely on the basis of features, specifications, and/or lists of parts and materials.

Design and Construction

In the interest of achieving better performance, appearance, or longevity, high-end piano makers are more likely to incorporate in their instruments unique or unusual construction methods or components, even though these may be more labor intensive and thus more expensive. Pianos that are more mass-produced, on the other hand, tend to include design compromises that enable faster or more efficient manufacturing. For example, the soundboards of most mass-produced pianos are shaped according to a design that is applied uniformly to every instrument of that model, whereas some high-end brands thin their soundboards by hand for best tonal quality, to compensate for slight variations in the wood.

Other examples of more expensive designs include unusual methods of bending or building up the rim, the use of multiple species of wood in rims or bridge caps, unique patented components for enhancing the tone, and more keys and/or strings than are found in a standard piano. Some of these design elements are present in part for reasons related to a brand's history, others purely for reasons of quality, but each is there because it serves the performance objectives of the manufacturer and is part of what makes each brand unique. All such idiosyncratic variations add considerably to the time and cost of manufacture.

Settling-in Time

A very necessary but expensive part of building a piano is the time it takes the components to settle between stages of construction, and these periods will generally be longer in a factory making high-performance instruments. On any visit to a piano factory, one may be puzzled by the sight of many pianos and components sitting around in various states of completion, not being worked on. This seems counterintuitive to anyone from an industry in which the main measure of efficiency is getting as many products out the door in as short a time as possible.

But in piano manufacturing, patience is crucial to getting good results. Grand-piano rims may have to sit for months after being bent, in order to stabilize before they can be worked on further. In between action regulations, pounding machines are used to compress the action cloth. The pianos must be tuned numerous times to stretch the strings, with settling time between tunings. Hammers must be voiced to perfection by hand. In the long run, the time it takes to let the 12,000 or so parts of a piano get used to each other pays off handsomely in the form of greater longevity and stability of action, tuning, and tone.



— Family of Pianos —

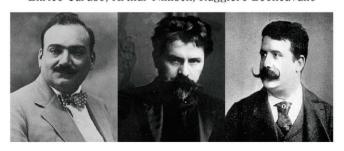


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Custom Musical Preparation

To maximize each instrument's potential once basic construction has been completed, high-end pianos are given much greater musical preparation—tuning, action regulating, and voicing—in the factory. This highly skilled, exacting work requires years of training. Performing extensive musical prep at the factory ensures that by the time the piano reaches the customer, its tuning will be stable, and the cloth and felt used throughout the action will have settled; as a result, the piano will need less initial servicing by the customer. Because the skill and experience of the craftspeople in a high-end factory are almost certainly greater than what is available to dealers or customers, this also ensures that every step in the piano's musical preparation has been performed, at least this first time, to a high standard, and that the instrument leaves the factory having fulfilled the manufacturer's performance objectives. In my experience, a piano that has been stabilized in this manner will wear more evenly, have fewer and less idiosyncratic problems, and will be easier and thus less expensive to service throughout its working life.

Worker Training, Experience, and Autonomy

The craftspeople in companies that produce high-end pianos are highly trained, and because of the enormous investment made in that training, companies are willing to pay a lot to employ these people over many years. It can take years of experience, for instance, to become a skilled voicer. The better companies have extensive programs that gradually move employees into areas of greater responsibility, so that skilled replacements are readily



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available when needed. This greatly increases the cost of labor over companies that make less-costly instruments, where workers need not be so highly skilled.

In the making of high-performance instruments, more autonomy is given to individual craftspeople to make changes or corrections as needed. For example, in a high-end factory, a voicer unhappy with the tone from a particular set of hammers has permission to replace them. This is in contrast with high-production factories, in which workers may pay less attention to mistakes or unsatisfactory results, and flawed instruments may go far down the assembly line before being caught (if they're caught at all), by which time making the correction may be too time consuming, and thus too expensive, to bother with.

Cabinet Detailing and Appearance

Between high-end and mass-produced pianos, there can be great differences in the quality of hardware (casters, hinges, pedals, screws), the thickness and surface preparation of the cabinet and plate finishes, the felt and cloth used in the case parts, and in the thickness and fit of the legs, lyre, and lid. Consumers may rarely notice these details, but they're important to the instrument's longevity, and affect the appearance and noiseless operation of all case parts.

Whether for a concert or for home, a professional pianist's choice of high-end piano is primarily based on the instrument's tone and touch: Does it sustain, to enable a singing line? Does it project the tone? Does it offer a wide range of dynamics and tonal color? Does the action repeat quickly and reliably, transfer power efficiently, and remain well within the player's control? For the amateur pianist, high-end pianos open up a wider world of sound and performance than is otherwise achievable—and having that range of expression literally at one's fingertips can lead to a tremendous joy in making music that is rarely experienced with lesser instruments.

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 the Cincinnati Symphony Orchestra, the BBC Concert Orchestra, and the Vienna Philharmonic. At present, Phillips lives in Georgia and works throughout the southeastern U.S. She can be contacted at sphillipspiano@hotmail.com.



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The Best Piano: A Story

by ORI BUKAI



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

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

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

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

American market for European pianos grows, the European companies are further having to reconcile remaining true to their own traditions with evolving to please the American ear. While all brands make full use of technological advances and are capable of satisfying diverse musical needs, some tend toward a more pristine tone, with plush but lowvolume 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 instru--Editor ments.



'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 in-

strument 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

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needs to 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 "handmade," 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







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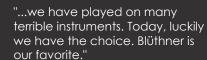
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"My Many Years"



"There are only two important things which I took with me on my way to America. It's been my wife Natalja and my precious Blüthner."



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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 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.

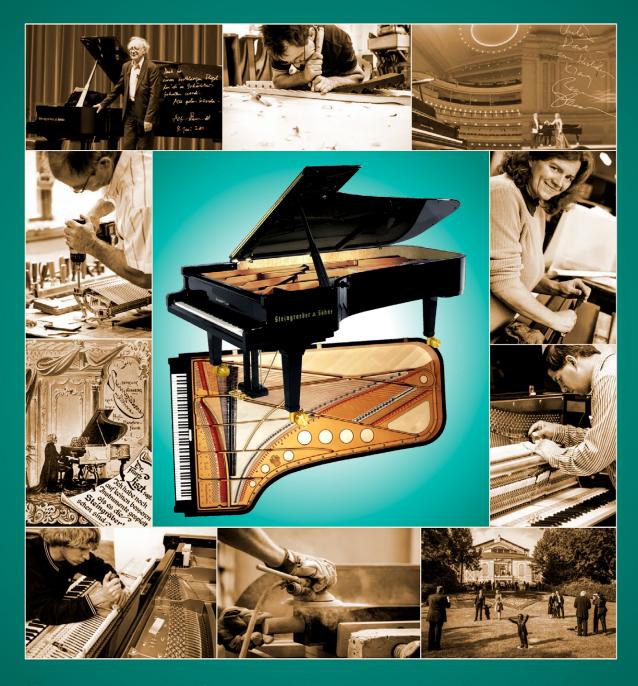
At the top end of piano manufacturing, each instrument should have a high level of design, parts, materials, execution, workmanship, and attention to detail. However, it is personal preference—the buyer's response to the various manufacturers' interpretations of the "perfect sound"—that determines the 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 PRIVATE AND PUBLIC SIDES OF CELEBRITY PIANOS

KAREN E. LILE

ou can buy a high-quality grand piano for \$100,000 or so, and there are many good ones to choose from, made by many fine manufacturers. But a piano can acquire a history, through association with a celebrity, that will give it extra value—even (though rarely) into the millions of dollars above and beyond what it might be worth solely as a musical instrument. Some of these "celebrity pianos" are known to the public through famous people who design and market their celebrity status for a charity or business. But in my experience, it's more common for a celebrity or a celebrity's heirs to part with a piano in a private transaction than to direct public attention toward their personal property.

Many aspects of a celebrity's life, and the lives of their families and friends, are constantly under examination by the public. Privacy is a precious commodity, and they strive to preserve it wherever possible. Being the niece of an introverted music celebrity who performed and recorded with a continuous stream of other celebrities throughout his Hollywood career of more than forty years, I understand the private side of celebrities.

My History

My uncle, Tony Terran (1926-2017), was a trumpet player who began his long career in 1946 as a member of the Desi Arnaz Orchestra, and played with Desi on the I Love Lucy television show from its debut in 1951 until the final episode in 1961. During the 1960s, he was also part of the famed Los Angeles-based group of studio musicians known as the Wrecking Crew. Tony played with a huge variety of celebrity musicians in film soundtracks, on the concert stage, and in recording studios. The musicians who knew him don't list the thousands of albums in which he was featured; they just keep it simple and say that Tony played with "everyone," from Frank Sinatra to Michael Jackson. Uncle Tony took me behind the scenes in Hollywood in my early 20s, giving me advice about the industry and teaching me, among other things, to value privacy and keep confidences.

I became involved in the piano business because I loved piano music and was intrigued with the musicproducts industry. In my early 20s, I encountered a talented business partner, Kendall Ross Bean. Kendall was halfway through a doctoral-degree program in piano performance, and I was finishing up my degree in English. A combination of his skills in piano rebuilding and historical documentation, and my creative business sense, resulted in our establishing Piano Finders, a rebuilder of high-quality pianos, in the San Francisco Bay area. Both of us being socially skilled introverts with an analytical approach, we attracted a clientele that eventually led us into appraising celebrity pianos. Our approach was to support any subjective opinion we had with facts, measurements, and objective documentation. By revealing why we had reached our conclusions, we gave our clients an opportunity to decide for themselves on the occasions when other experts' opinions differed from



Lucille Ball, Tony Terran, and Desi Arnaz in the 1950s.

ours. Our appraisal work was also noticed by others, and due to our analytical approach, interior decorators, banks, insurance companies, attorneys, art buyers, estate appraisers, and dealers in antiques and musical instruments began hiring us to appraise pianos for various purposes. Over time, we documented and appraised more than 3,400 pianos, including many with celebrity value.

How Celebrities Can Add Value to an Instrument

Celebrities can add value to a piano in a variety of ways, including:

- Owning a piano
- Performing on a piano, either once or over a period of time
- Composing on a piano
- Signing a piano
- Collaborating with a manufacturer on the design of a piano
- Auctioning a piano for the benefit of a charity or nonprofit

Pianos Owned by Celebrities

Celebrities can add value to pianos just by owning them, even if they don't play the pianos themselves and/or have no intention of selling them. When Kendall and I were in our 20s and still developing our methods for appraising celebrity pianos, one of our early clients was Larry Ellison, co-founder and CEO of Oracle Corporation. Ellison was then building his home in Woodside, California, and his private art buyer, Glenda Martin, commissioned our company to find Ellison two fine-quality vintage grands and rebuild them for two of his spaces. The pianos Ellison had Martin purchase were for his own personal pleasure and business use; Martin told us that Ellison had no intention of reselling them. One of the pianos became part of the Woodside residence, whose value is now estimated at \$70 million; the interior designer placed the instrument in a beautiful room designed around it. The other piano is located in a commercial space, to be used for business entertaining.

The appraisals we performed were first for purchase, and later, after the pianos were rebuilt, for insurance purposes. In the second appraisal, we didn't take into account the pianos' celebrity value, as Ellison didn't intend to resell them. Now, more than 20 years later, the pianos have acquired history, having been owned by someone of great renown who placed them in prominent and luxurious settings, and having had many artists entertain on them. If Ellison or his estate were ever to decide to sell

or donate the instruments separately from the rest of the property, they could be revalued to reflect that history. This example illustrates that celebrity value can change over time, and that, while ownership by a celebrity often adds value to an instrument, whether or not that value is taken into account in a particular appraisal will depend on the purpose for which the appraisal is written.

More commonly, the death of a celebrity, and the disposition or probate of his or her estate, results in an appraisal. Although the facts of the marketplace dictate the value that an appraiser places on an instrument, in my conversations with the family members of the recently departed I often listen with empathy to their feelings, then explain what type of appraisal they need for the purposes they contemplate. For example, when Gloria May, the daughter of film star Ann Rutherford (Carreen O'Hara in Gone with the Wind), contacted me after her mother's death to discuss her mother's piano—a Boston-made Mason & Hamlin grand—we talked about the piano's celebrity value. I asked her what had been important to her mother, and how she had lived her life. Gloria explained that she and her brother didn't play the piano, but that it was a part of their private family life and the entertaining Rutherford did in her home, especially to benefit her favorite charities. May decided that she preferred to honor her mother by donating the piano to a nonprofit, and asked me to connect her with one, rather than to engage in the process of a public sale. She donated the piano, and we did an appraisal to help her in her decision-making process. May died a few years after making the donation, but I think she would have been delighted to know that the person in San Francisco who bought her piano from the nonprofit had it rebuilt by us, and now regularly hosts socials with pianists who perform on the instrument and talk about the life and accomplishments of Ann Rutherford, its previous owner.

Pianos Performed On by Celebrities

A celebrity can add value to a piano by performing on it, or by taking it on tour. A set designer for Julio Iglesias asked us to arrange for someone to create a specialty piano case for Iglesias's tour of Spain, and we made arrangements with Baldwin to have this done. The piano was part of the touring set, and not intended for sale afterward. Had we appraised it for resale, however, we would have been justified in adding value for the custom case and the piano's association with the Iglesias tour.

At Fantasy Studios, when Patrick Stewart (*Star Trek: The Next Generation, X-Men*) sat down at a piano just rebuilt by Piano Finders, he tweeted to his fans, "No, I don't play, but Bill Evans did, and I'm at his piano, where he recorded—Fantasy Studios, Berkeley. Goosebumps."

Although the piano was not for sale, Stewart's tweet indirectly added to its value by drawing his fans' attention to the fact that it had been played by many famous musicians. For now, the piano has greater value to the studio as a fine working instrument that musicians appreciate recording on. Eventually, should Fantasy choose to sell this piano, we might find ourselves appraising the piano for its accumulated celebrity value, acquired from all the artists who have recorded on it over time.

Pianos Composed On by Celebrities

A celebrity can add value by composing on a piano. We have appraised pianos composed on by Dave Brubeck, George Winston, and other entertainment celebrities. Although we did not appraise the Steinway upright on which John Lennon composed "Imagine," its sale at auction in 2009 for \$2.37 million to another British rock star, George Michael, is a matter of public record, and gives you an idea of the sums that such pianos can, on rare occasion, bring.

The above examples illustrate how value can be added to a piano without the knowledge or intention of the owner or user. They may not care about their fame as it pertains to the piano, or are focused on their work at the piano rather than on the instrument's value—the piano is simply a comfortable part of their personal or work life. Depending on the purpose for which an appraisal is written, the celebrity value may not be officially recognized until needed for the instrument's sale or donation, often after the owner's or user's death.

In the examples that follow, on the other hand, the added value was not only intended, but was usually planned in great detail for the express purpose of increasing the piano's value for the benefit of a charity or brand image. Although listed here separately, these different ways of adding value are often combined, such as when a piano is designed in collaboration with a celebrity, signed by the celebrity, and auctioned off for charity.

Pianos Signed by Celebrities

A celebrity's signature on a piano can increase its value. For example, an attorney in a well-known court case in Florida hired Piano Finders to appraise a Yamaha piano that Elton John had signed as part of a limited-edition series. The owner had filed for bankruptcy, and the court recognized that the piano had celebrity value and asked us to appraise it.

Pianos Designed through Collaboration with a Celebrity

The above-mentioned instrument, a Disklavier-equipped Yamaha grand, was number 8 of 30 in the Elton John Limited Edition Signature Series Red Piano, designed by Yamaha as a tribute to Elton John. When Yamaha



The brass plaque on the fallboard of this Yamaha C7 identifies it as an Elton John Special Signature Series Red Piano, Edition A.

planned the Red Piano series, their respect for John led them to take great care in the marketing of the pianos, including special recorded performances by John provided exclusively to the instruments' purchasers. When the series was released, Yamaha proclaimed, "Elton is the quintessential crown jewel of the Yamaha artist family. The new Elton John Signature Red Piano is our way of paying tribute to one of the greatest rock legends of all time." A special relationship such as this between a manufacturer and a celebrity artist gives added value to a piano, especially when it's part of a limited-edition series, where the demand is likely to be greater than the supply.

Pianos Auctioned for the Benefit of a Charity or Nonprofit

Celebrities often have favorite charities, and some have even set up their own. They contribute their celebrity status to help the charity by auctioning off personal items, including pianos, for thousands or, rarely, even millions of dollars. Celebrities deliberately create added value for pianos by performing on them, signing them, and/or endorsing a piano brand.

When a sale is planned for the piano of a celebrity with high social and cultural status, multiple entities can be involved in the planning, both before and after the event, each with its own intellectual-property territories. Examples include television broadcast companies, artist management companies, auction or special-events production teams, film producers, and one or more non-profit organizations. If we're asked to appraise a celebrity piano during the planning stage of such a sale, we often also serve as a consultant on historical documentation. I may fly to a corporate headquarters and talk to key people

to discuss the history of the piano, while Kendall may be flown to the piano's location, where he documents its condition and any custom technical modifications made for the celebrity. In these situations, we are generally required to sign a nondisclosure agreement early in the process. When we begin the appraisal, we don't know the outcome. I've witnessed situations in which a piano I appraised was initially intended for a public sale, but during the process the parties involved decided to keep the sale private.

Unlike auctions for serious collectors, charity auctions are emotional affairs. That is, those who participate in a charity auction are not bidding huge sums for an instrument's carefully appraised musical or historical value. Rather, wealthy potential buyers may bid unusually high amounts because they desire to benefit the charity, enjoy competition with their peers, and find the auction process exciting. For example, a custom red and white Steinway grand commissioned for a star-studded (Red) auction organized by U2's Bono to benefit The Global Fund to Fight AIDS in Africa, sold for \$1.925 million to billionaire philanthropist Stewart J. Rahr. Nevertheless, auction prices can set a precedent for the value of an instrument; such precedents then become part of the comparisons that appraisers consider when appraising another piano associated with that celebrity, or with a celebrity of similar status.

There are nuances to the amount of celebrity value a piano acquires, based on the type of celebrity interaction

Photo courtesy of Steinway & Sons

This custom Steinway grand was commissioned for an auction organized by U2's Bono to benefit the Global Fund to Fight AIDS in Africa.

with the instrument in question. For example, an Elton John Signature Series Red Piano that contains an exclusive recording of Elton John performances that can be played back on a Disklavier would not be considered as valuable as a piano actually owned by John and used for a majority of his practice and composition. So, while the piano that John Lennon used to compose "Imagine" was purchased at auction for \$2.37 million, no Red Piano that Elton John has not personally played has yet commanded (on public record, at least) anywhere near as high a price.

It's important to emphasize here what should be obvious: Simply stating an appraised value doesn't create or guarantee that value. A piano is worth only what a buyer and seller agree on, what members of a family negotiate with one another in the settlement of an estate, what a court decides in a bankruptcy or divorce, or what an insurance company pays in the event of a loss. An appraisal is only an estimate of what that value might be, and not always an accurate one. That said, examining years of our own appraisal data, we find that, outside of charity auctions and other highly publicized sales, the value added to a piano from association with a celebrity typically ranges from \$50,000 to \$1,000,000. However, an amount outside this range, higher or lower, is entirely possible, depending on the strength of the celebrity's status, the nature of his or her association with the piano, and other factors.

How Fans Can Contribute to Celebrity Value

Fans are interested in the talents, lifestyles, and personal lives of film stars, entertainers, and celebrities of all kinds, and the success of a celebrity's career depends upon a devoted following. Fans will come to a film, concert, or just about any other event a celebrity is associated with, just because of the celebrity's participation. And the celebrity's name can have value to others as well—those who know that the celebrity has made a commitment to do something even before he or she has done it. For example, based solely on a film star's name, a producer can get a larger loan for the production of a new film.

But even more than fame, fans admire a musician's skill, and how his or her music moves them emotionally. We have stories, from as early as the 1800s, about virtuoso pianists, such as Liszt and Chopin, becoming the "rock stars" of their day. Liszt "transfixed audiences with his unique combination of charisma, dashing looks and Herculean pianistic skill. He exploited this part to the fullest and sent the ladies wild; they wrestled each other to get close to the stage, some fought tooth and nail over discarded gloves or cigar stubs, others simply fainted."

(All Things Considered, NPR, "How Franz Liszt became the world's first rock star," Oct 22, 2011.) During the late 19th and early 20th centuries, when a rise in prosperity created legions of piano buyers in Europe and America, the emblems of royalty affixed to the piano soundboards held appeal for the upper middle-class buyers, who trusted the piano brands endorsed by Europe's royal families. Similarly, piano manufacturers solicited the endorsements of famous pianists, who were sent on concert tours to promote the manufacturers' instruments.

But it wasn't until the 1950s, when fan mania of all kinds (rock 'n roll, film, sports, etc.) and mass-media marketing combined to create the climate of public celebrity we know today. Teams of marketing specialists and venture capitalists who invested in the names of the celebrities they promoted used their combined skills of production, marketing, and mass-media manipulation to amplify their celebrity clients' skills and charisma.

This mania was facilitated in part by state laws, and by court decisions beginning with Haelan Laboratories, Inc. v. Topps Chewing Gum, Inc., a 1953 decision of the U.S. Circuit Court of Appeals for the Second Circuit, that gave celebrities a "right of publicity" in the commercial use of their image and name. (The case in question gave baseball players the ability to prevent the unauthorized use of their images on trading cards packaged with bubble gum.) This right gave the famous—and, perhaps more important, those who manage or invest in them—an incentive to monetize their celebrity status and engage in behavior that builds fan bases. In fact, it has been noted that this right has developed in such a way that monetization is not only expected of the famous, but is virtually demanded of them by their investors, who expect to make a profit on their investment.

Documentation Required to Prove Celebrity Value

As the money to be made from celebrity status has increased, so have the clever ways to fraudulently claim association with celebrities. For that reason, just as a fineart appraiser must have proof of a painting's provenance, a good personal-property or piano appraiser will not take celebrity value into consideration unless it has been carefully documented. Such documentation can take a number of forms, including:

- Transport records of when a piano was moved to and from a significant event
- A photograph of a celebrity's signature on the castiron plate, music rack, or other part of the piano
- Photographs or films of the piano documenting a celebrity performing on it

- A technician's inspection report documenting special changes made to the piano for a celebrity pianist's playing technique or preference
- Written statements by the celebrity about the piano, clearly identifying the piano by serial number, or in some way that can be proven by other supporting documents
- Testaments of credible witnesses as to a specific piece of history or story associated with the celebrity's involvement with the piano
- Authorized manufacturers' statements as to a celebrity endorsement or relationship

How Celebrities Add to the Piano's Social History

Pianos are truly amazing instruments, not only for the music that can be produced through them, but also for the social, cultural, and symbolic history surrounding them. Celebrity association has always been part of the latter. Whether a celebrity's involvement with a piano is known to the public, or to only a few people in a private transaction, people care about that history. Celebrities add value to pianos, not only from association with their name, but because the stories we tell and hear about them add interest to our lives and to an understanding of our shared popular culture.

We can also pay tribute to the courage it takes to be in the public spotlight, and to the extent we are all enriched by the talents and contributions of celebrity performers. When a celebrity is generous enough to add value to a piano, many people benefit: the manufacturer who made the piano, the dealers who sell pianos of that brand, the professionals who become involved in managing the artist's intellectual and physical property, the charities that receive donations from a sale, and the fans who love the music and history that have been created with the instrument. It is to be hoped that such generosity will also inspire new artists to develop their talents of playing, composing, and performing at the piano, and will continue to add to the piano's rich social history.

Since 1982, Karen Lile, co-owner of Piano Finders, has appraised over 3,400 pianos for celebrities, lawyers, accountants, insurance adjusters, insurance companies, estate trustees, piano dealers, universities, buyers, sellers, owners, and nonprofit organizations. Her business partner, Kendall



Ross Bean, holds a Master's Degree in Piano Performance and is a master piano rebuilder and historian. They can be reached through www.pianofinders.com.

Photo by Mike Kofford



Buying Pianos for an Institution



GEORGE F. LITTERST

[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 graduateschool 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 "Ten Ways to Voice a Room" in our online archive.

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

non-pianist musicians. There, other factors, such as the size of the room, will 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



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

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to accompany others, and whether the sound is amplified. A piano dealer can help 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 decisionmaking process may be handled by the music director, the pastor or priest, or perhaps by a lay committee. In a school

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. of music, decisions may be delegated to the chair of the piano department, the chair of the music department, the dean of fine arts, or some other individual or faculty committee.

In many instances, well-intentioned individuals with no knowledge of pianos find themselves having to make a final decision. It is important that those involved in the process commit themselves to understanding the intersecting issues, and bring into the decision-making process appropriate people from the artistic, technical, and/or financial sides. At a minimum, that means the piano technician, and the most advanced, or most frequent, professional users. If a digital-technology-based instrument is being considered, someone should be involved who can speak to those technical issues as well. A department chair who has not actually used the technology in question may or may not be in a position to evaluate it.

Negotiating a Purchase

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

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

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

 How prominently positioned the instruments will be in your institution or in the community

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

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

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

For example, if you really want Brand X with features A, B, and C, be sure to write your bid description so

that it describes—within acceptable guidelines—the instrument that you wish to purchase, and rules out instruments that don't fit your needs. If your bid description is loosely written, you may receive low bids for instruments that don't meet your requirements.

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

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

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Piano Maintenance in Institutions

CHRIS SOLLIDAY, RPT

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.

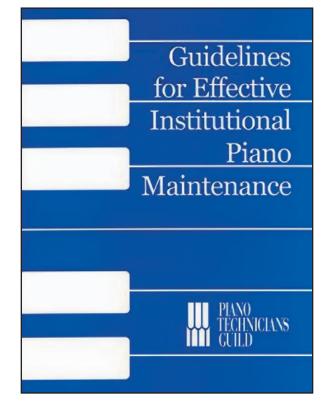
At some point, of course, parts *will* have to be replaced, worthy instruments rebuilt, and unworthy ones replaced. But there is no need to hasten the inevitable by subjecting pianos to

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 af-

fecting 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 can also create drafts that blow directly on the piano, further varying the



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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 timeefficient maintenance of practiceroom 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. 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.

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

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

The following are the major types of service a piano needs on a regular



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

or semi-regular basis. More information can be found in *The Piano Book*.

Tuning

Pianos go out of tune mostly because of seasonal changes in humidity that cause the soundboard and other parts to alternately swell and shrink. This happens regardless of whether or not the piano is played. Pianos vary in their responsiveness to fluctuations in humidity, but the variance is not always related to the quality of the instrument. People also differ in their sensitivity to tuning changes. New or newly restored pianos should be tuned three or four times the first year, until the strings are fully stretched out. After that, most pianos should be tuned between one and three times per year, depending on seasonal humidity changes, the player's sensitivity, and the amount of use. Pianos that receive professional levels of use (teaching, performance) are typically tuned more often, and major concert instruments are tuned before each performance. A regular home piano tuning typically costs between \$100 and \$200. However, if the piano has not been tuned regularly, or if it has undergone a large change in pitch, additional tuning work may be required at additional cost.

Regulation

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



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

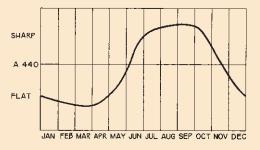
WHEN SHOULD I HAVE MY PIANO TUNED?

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.

Cleaning and Polishing

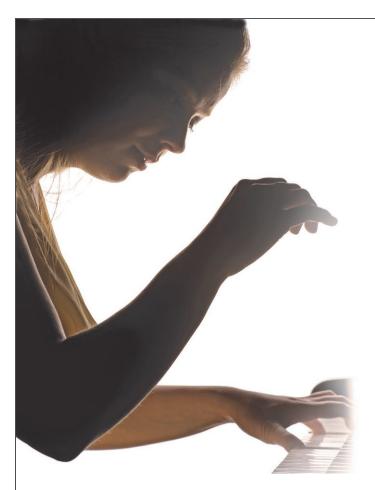
The best way to clean dust and finger marks off the piano is with a soft, clean, lintless cloth, such as cheesecloth, slightly dampened with water and wrung out. Fold the cloth into a pad and rub lightly in the direction of the grain, or in the direction in which the wood was originally polished (obvious in the case of handrubbed 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

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.





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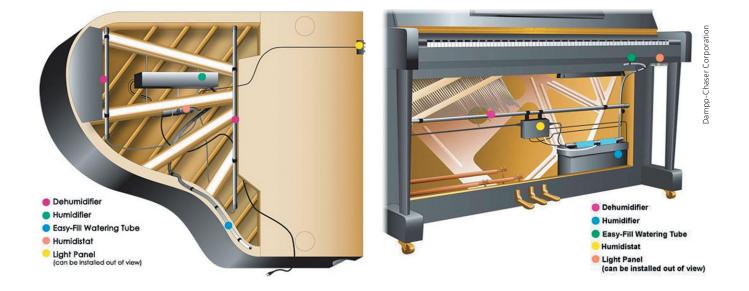
of the keys. If the keytops are made of ivory, be sure to dry them off right after cleaning—because ivory absorbs water, the keytops will curl up and fall off if water is allowed to stand on them. If the black keys are made of wood, use a separate cloth to clean them, in case any black stain comes off (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.

Humidity Control

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





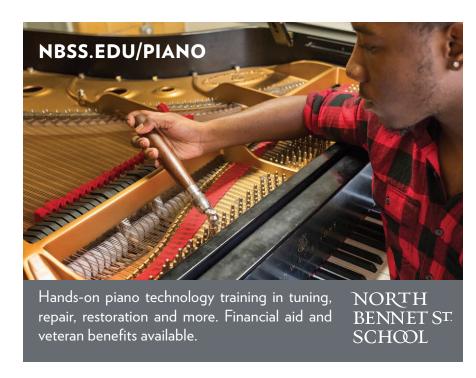
- Don't place the piano too near radiators, heating and cooling ducts, fireplaces, direct sunlight, and open windows.
- Avoid overheating the house during cold weather.
- Use air-conditioning during hot, humid weather.
- Add humidity to the air during dry weather with either a whole-house humidifier attached to a central air system or with a room humidifier. Room humidifiers, however, have to be cleaned and refilled frequently, and some make a lot of noise. If you use a room humidifier, don't place it too near the piano.

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

system's components are discreetly hidden inside the piano. For more information about these systems, see www.pianolifesaver.com.

Another solution to the humidity-control problem is **Music Sorb**, a non-toxic silica gel that naturally attracts moisture from the air when humidity rises above 50%, and

releases that same moisture when the humidity drops below 50%. It comes in cassettes or pouches sold through piano technicians or from the website www.musicsorbonline.com. A supply sufficient for a single piano costs about \$125 and may need replacing once a year, depending on local humidity variations.





CLEANING AND POLISHING A PIANO'S FINISH

DAVE SWARTZ

he purpose of this article is to explain the proper care of the three most common piano finishes today: satin, high gloss, and open pore. Wood-finishing materials have changed dramatically in the last century. The earliest were made of oil-based varnish, rubbing oils, or shellac. Then, in the 1920s, lacquer became more prevalent, with synthetics such as polyurethane and polyester following later in the century as scientific advances were made. Water-based coatings also were and continue to be applied.

To best care for your piano's finish, you need to know what kind of finish it is, and what its special requirements are.

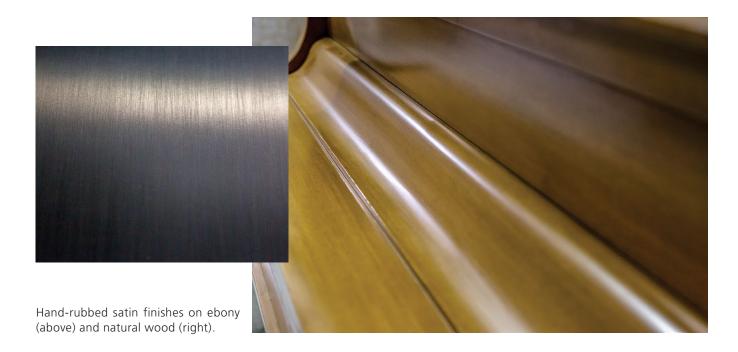
Satin Finishes

A satin finish reflects light but not images. Satin finishes may be of any color, including ebony (black), or wood tones such as cherry, mahogany, and walnut. Regardless of whether the finishing material is lacquer, polyester, or something else, the process of applying the finish is similar.

First, numerous layers of high-gloss material are applied; typically, each layer is lightly sanded before the next layer is applied. When an adequate thickness of material has been built up, the finish is left to cure for a while, then rubbed to a satin finish. The rubbing is

done with #0000 steel wool or, in some instances, 600-grit wet/dry sandpaper or other abrasive. A rubbing lubricant, along with water on the abrasive applicator, serves as a buffer. The rubbing is done in one direction only, to create tiny grooves in the finish that diffract light (see photo). In this way, the original high-gloss sheen is knocked down to a hand-rubbed satin sheen that is dull but elegant.

Caring for this type of finish can be problematic, for two reasons. First, body oils from fingerprints can get trapped in the tiny finish grooves, and are not easily removed by a simple dusting. Second, if the finish is wiped in a circular motion, the fine grooves become uneven, disturbing the original even pattern of light reflection and thus ruining the satin effect. Over time, repeated



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polishing in the wrong direction can actually remove the tiny grooves and bring the finish down to the base of the high-gloss material. An example of this condition would be an older satin finish that now looks somewhat "semi-gloss" due to overwiping and overpolishing.

The adage "less is more" is applicable to caring for a satin finish. In most cases it is unnecessary to apply polishes or cleaners to remove ordinary dust or dirt—a simple dusting with a non-abrasive cloth is sufficient. If you want to remove fingerprints, a mild cleaner can be applied. A product specifically designed for this purpose is our Cory Pre-Polish Finish Cleaner, but you can also use a microfiber cloth dampened with warm water and Ivory liquid dish detergent, then a separate, dry microfiber cloth to remove any remaining moisture. Apply the cleaning liquid directly to the cloth, and be sure to wipe in a back-and-forth motion *only* in the direction of the satin "grain."

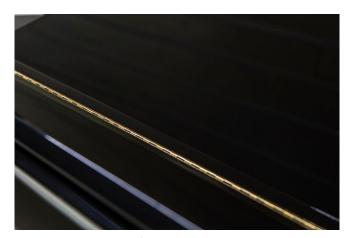
Another type of satin finish is created by adding a pigment to the high-gloss material, to suppress the high shine of the finish. This type of finish is often less expensive because it is usually not rubbed, but instead is left as is for a duller, matte appearance. Some dealers and rebuilding shops use this type of finish when refinishing a piano. The recommendation for care remains the same as for a rubbed finish, although the direction of wiping is not as critical.

Avoid using waxes, products with ammonia, oils, petroleum-based products, or grocery-store aerosols. These types of household cleaners will make the finish appear hazy, milky, or smeared.

High-Gloss Finishes

High-gloss finishes act as mirrors, reflecting both light and images, and the material most commonly used in today's high-gloss finishes is polyester. Pioneered in the 1960s, polyester finish is a two-part synthetic resin that completely hardens during curing, is resistant to cracks, and can't be broken down by solvents. Polyester finishes are the most durable of all piano finishes, but their hardness and resistance to solvents make them more difficult to repair when damaged.

Aside from damage repair, polyester finishes are easier to maintain than satin finishes, but still require proper care. Using ammonia, solvents, or waxes generally will not damage the finish, but will create a smeary, uneven appearance as these contaminants build up over time. In addition, some polyesters themselves may not be of high quality, and will eventually haze over. If oil- or solvent-based polishes were previously used on the piano, or if its surfaces are dirty, a simple cleaning with a mild solution



A high-gloss polyester finish.

is recommended to remove the contaminants and dirt before polishing. Use my suggestions in the Satin Finishes section, above, to do a thorough cleaning before applying a polish. Once again, I recommend that you use a clean, high-quality microfiber cloth (see below) when caring for a high-gloss finish, to avoid scratching or uneven results. More abrasive cloths can create surface scratches.

Some polishes are designed specifically for high-gloss finishes. Many piano manufacturers recommend our Cory Super High-Gloss Piano Polish, a water-based polish that contains no solvents, waxes, or harmful additives. This special, emulsified blend of polymers will not build up, smear, or leave other undesired results. It's worth stressing that oil and water don't mix—when using a water-based product such as ours after an oil-based product, it's paramount to first clean the surface for best results.

Other types of high-gloss finishes include polyurethane and lacquer. Polyurethane is a bit softer than polyester, and lacquer is softer yet. Care must be taken when using cleaners or polishes with these finishes avoid those based on solvents, petroleum-based paraffin wax, or ammonia. Note that, although more easily damaged than polyester, lacquer is often considered the most beautiful of high-gloss finishes, and is used on some of the most expensive pianos.

Open-Pore Finishes

Open-pore finishes are used primarily on pianos with natural wood-veneered cabinets (i.e., not ebony). Though not as commonly used on pianos as satin and high-gloss finishes, open-pore finishes are often used as an alternative to satin on instruments made in Europe, as well as on furniture such as end tables, coffee tables, and bed head-boards. An open-pore finish is achieved using a sanding sealer and a coat or two of lacquer or polyurethane.



Two examples of open-pore finishes.



However, it is not rubbed, nor is the grain completely filled, which gives an open-pore finish a sheen somewhere between satin and matte. The way to identify this type of finish is to examine it closely, to ascertain if the wood cells are exposed, and not filled (see photos).

There are many options for the care of open-pore finishes; I recommend conditioning and preserving with an oil- or petroleum-based product. Howard's and Old English are two brands that are popular in the furniture world. Our company, Cory Products, makes specific blends for piano finishes, such as Honey Oak, Natural Wood, and our very popular Harmony Detailing Oil. But regardless of which conditioning polish you use, be sure to remove any excess—otherwise it will collect dust and create a buildup of grime.

Should the finish be worn, or with visible bare wood due to gouging or scrapes, you can use products such as Old English Scratch Cover or Cory Scratch-Brite Fine Wood Restorer. Note that using products containing paraffin waxes may leave the finish tacky to the touch.

In all cases, avoid spraying any product on or near the piano's tuning pins or strings. The wisest choice is usually

to first apply the product to the cloth, then the cloth to the wood.

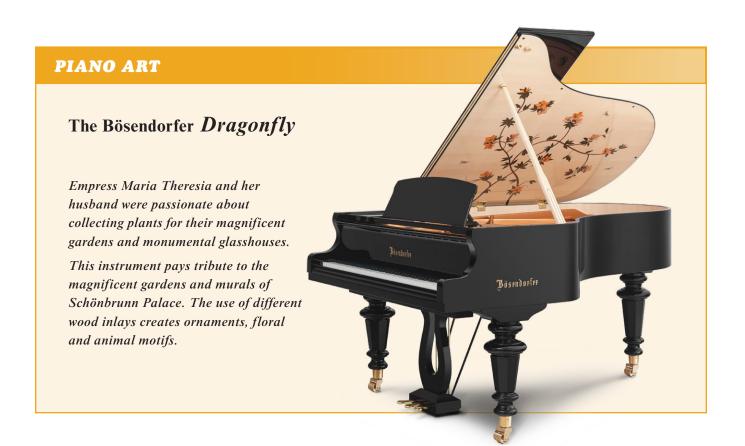
Microfiber Cloths

Microfiber cloths are superior to other cloths for maintaining fine finishes, and are recommended for all finish care. However, not all microfiber cloths are created equal; the higher the quality, the better the cleaning results. Most microfiber cloths are made of 80% polyester and 20% polyamide, as polyester has an affinity for oil and polyamide has an affinity for water. You can judge the quality of a microfiber cloth in part by its weight, measured in grams per square meter (gsm). Good cloths start at around 200 gsm; the best are over 400 gsm. If the cloth is hemmed, make sure that the stitching contains no nylon, which will scratch the finish.

Dave Swartz is a Registered Piano Technician and owner of Cory Products. He can be reached through his company's website, **www.corycare.com**.



Microfiber cloths are recommended for all finish care.





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Benches, Lamps, Accessories, and Problem Solvers



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. Consumergrade pianos usually come with fixedheight 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. A new style of adjustable bench, with steel legs, may be useful in high-use institutional settings.

A new type of adjustable bench on the market contains a hydraulic or pneumatic mechanism for raising or lowering the seat. There are different versions, but a typical one uses two nitrogen-gas cylinders, one on each side, and is good for 30,000 upand-down cycles. The bench can be adjusted quickly and effortlessly by means of a handle on the side of the





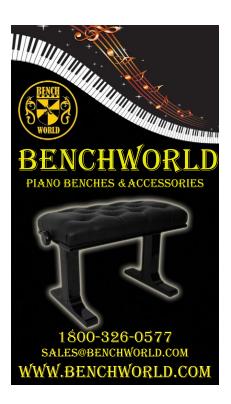




Adjustable Bench with Steel Legs



www.benchworld.com



bench. This can be an advantage to players whose wrists are easily fatigued by turning the knob of the traditional or standard type of adjustable bench, or for musicians who need to make height adjustments quickly and silently during a performance. These benches can also usually be set higher than the traditional kind. Most hydraulic or pneumatic benches are very stable, with metal legs (see photo), avoiding the wobbliness that can sometimes afflict four-legged wooden benches. Standard models range in price from \$500 to \$900; fancier versions, on which the metal is covered by wood, cost from \$1,300 to \$2,200.

Legs for both fixed-height and traditional 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 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 clipon 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.



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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,







Bench Cushions



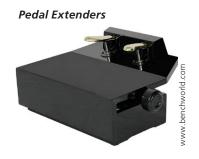
and colors. They are also available in tapestry designs, most with a musical motif, tufted or box-edged, and all have straps to secure them to the bench.

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

metronome to improve students' timing. Any piano or musicalinstrument 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 (now known as Magic Lid) consists of pneumatic cylinders that effectively counter-balance 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 midsize grands is \$500 to \$600. More information is available at

www.magic-lid.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; 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 remdies 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 keystop 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 \$795. See www.pitchlock.com for more information.





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Buying a Digital Piano An Introduction



ALDEN SKINNER and PIANO BUYER STAFF

IF, AFTER HAVING READ "Acoustic or Digital: What's Best for Me?," you've decided on a digital piano, the next step is to shop for and select the right model for your needs. There are currently some 200 models of digital piano on the market. Narrowing the field requires exploring some basic issues.

Style and Price

Digital pianos come in three basic physical styles: **slab**, **console** (also sometimes called vertical or upright), and **grand** (see illustrations). Which instrument style you choose will depend on use, space limitations, furniture requirements, and price.

Slab: A slab is simply a keyboard and, usually, pedal(s), without a stand. If you need to take the piano to a gig, or 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 slab that can be placed on a stand or table for practice, and stuck in a closet when not in use. Keep in mind, however, that slabs currently on the market weigh from 20 to 85 pounds, so be sure to choose one with a weight that you can handle.

Slabs generally come with a single pedal, but for many models, optional stands and three-pedal units are available. You may need to buy the slab, stand, and pedal unit separately and put them together, or a retailer you buy from may sell you all the parts as a package deal. Slab

digital pianos start as low as \$200, with most priced between \$500 and \$2,000, and a few as high as \$7,000. An optional matching stand with integrated pedal assembly usually costs \$200 to \$300 more, but a simple, generic stand can be had for as little as \$40. Note that some slabs don't come with a stand to hold your music; you might need to provide one.

Console: A console is a keyboard with a stand or cabinet that contains a built-in pedal assembly. A console may look like an upright acoustic piano or organ, or simply like a digital piano. Consoles generally have a stand and pedal assembly built in at the factory. However, as mentioned above, many slabs can effectively be turned into a console by separately buying a stand with an integrated pedal assembly.



The cabinetry of console 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 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 the usual three pedals. Console digitals start at about \$500, with most priced between \$1,000 and \$5,000, and a few as high as \$10,000.

Grand: If the piano will be in elegant surroundings, you may choose a grand-style digital. Digital grands come in lengths of about three feetjust long enough to suggest the shape of a baby grand—to about five feet. Like some of the console models, these are often available in a variety of wood-grain finishes and the polished ebony finish common in today's acoustic grands. You will usually pay a premium for the elegant furniture. Grands start at \$1,500, with most priced between \$3,000 and \$10,000, and a few as high as \$20,000.

Note that there is little or no relationship between an instrument's physical style and its musical features—slabs are often used on stage by professional musicians, and grand-shaped digitals may have features no better than the non-grand versions they're based on. However, the larger spaces enclosed by a grandpiano cabinet and some console cabinets can accommodate more, larger, and more advantageously positioned speakers, particularly bass speakers (woofers). This, and the sympathetic vibration of a wood cabinet, may result in better sound quality from the onboard speakers of some cabinet models than that found in digitals without cabinets, especially slabs.

Speakers, Headphones, and Stage Pianos

Most people who buy a digital piano do so, in part, so that they can play

with headphones and not disturb anyone. For that reason, *all* digital pianos come with headphone jacks. When used with headphones, most instruments' on-board (internal)



speakers are silenced. Also, nearly all digital pianos can have the sound of their onboard speakers rerouted to an external amplifier and speakers if, for example, the onboard speakers are inadequate for the venue, or if you'd prefer to use the speakers of your home audio system.

Some slab digitals come *without* onboard speakers. These are called *stage pianos*, and are generally used by professional musicians in performance venues where an external amplifier and speakers are expected to be present. Not having onboard speakers saves a little bit in cost, weight, and space. However, if you're planning to use the instrument at home most of the time, the convenience of having at least some onboard speakers is generally worth the trade-off.

(Note: The *stage piano* category also includes a few models of electronic keyboard with fewer than 88 notes and/or with keys that are not weighted to feel like an acoustic piano. For our purposes, those models are not considered digital pianos and are not included in our database.)

Taking Stock of Your Musical 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 piano's primary player today, and what are his or her musical interests and ambitions? 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 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 educational 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 different needs of several people. Fortunately, the wealth of available choices can easily accommodate any combination of individual and/or family needs.

Instrumental Voices (Sounds) and Ensemble Capabilities

Sounds in digital pianos are also known as *voices* or *tones*. Voices can include such sounds as:

- Individual musical instruments, such as piano, electric piano, guitar, flute, etc.
- Combinations of instruments, such as a string or brass ensemble
- Percussion sounds, such as snare drum or cymbals
- The human voice
- Unusual sound effects, such as gunshot or helicopter

Some digital pianos may contain more than one example of a

NOVUS

HYBRID NV10



EXPERIENCE EVOLUTION





particular type of voice, especially piano, such as bright- and mellowsounding pianos, or pianos that mimic the tonal characteristics of several different well-known makes of concert grand.

Standard or traditional digital pianos are designed mainly to emulate the acoustic piano, with the optional accompaniment of one or more other voices. Most will allow you to split the keyboard so that the right hand plays a melody in one instrumental voice while the left hand plays an accompaniment in another (such as piano and string bass); or to layer the sounds so that two or more instrumental voices sound together (such as piano and strings) when each key is played. These days, even the least-expensive standard digitals usually have at least a few different piano voices, as well as a dozen or two other instrumental voices, such as harpsichord, church and jazz organ, vibes, and strings. Many models contain hundreds of voices, built-in rhythms, sound effects like reverb and chorus, and a metronome for keeping time, among other features.

Other, slightly more expensive models, called ensemble or arranger digital pianos, generally have all the features of standard digitals, but also come with two other major features: Easy-Play and Auto-Accompaniment. With Easy-Play, playing as little as a single key will trigger the sound of an entire chord. With Auto-Accompaniment, an entire musical combo or orchestra (strings, horns, percussion, etc.) will back you up as you play, and automatically change its accompaniment to match your melody or changing chords. These backing tracks, known as styles, come in all kinds of musical forms, such as Swing, Latin, Rock, World, and so forth—with many different rhythms and special effects. The best of these styles are of a caliber that will please the most discerning ear.

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. The instant gratification provided by auto-accompaniment might keep a player with low attention span more fully engaged. For an advancing player, the opportunities for musical creativity are significantly enhanced. On the other hand, if you're the only player and expect to play mostly classical piano music, you may not want to spend money on the ensemble feature.

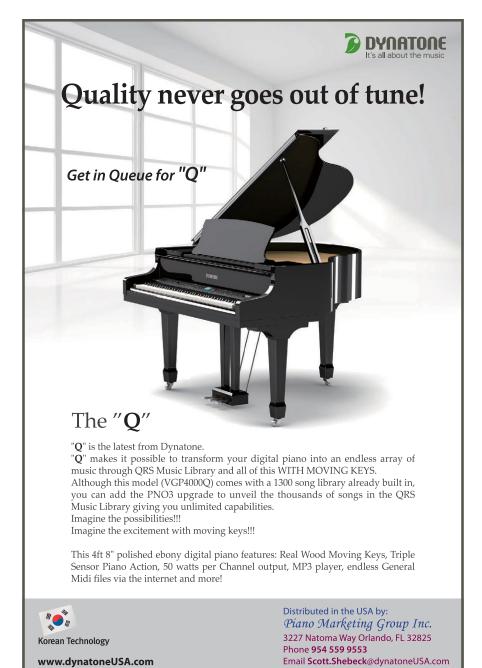
When looking over the specs of digital pianos, it's easy to be impressed by the large number of voices that some models contain, and there was a time in the recent past when the number of voices was closely related to an instrument's quality and price. That's no longer necessarily true. First, the price of memory has plummeted to the extent that even the least expensive models can be outfitted with hundreds of voices. Second, the quality of the voices, which is related to the amount of memory they take up, varies considerably; more voices doesn't necessarily mean a better instrument. It's expensive for a manufacturer to create or purchase custom, high-quality sounds, and these sounds take up a lot of memory. When an instrument contains more than a few dozen voices, often most of the rest are from a standardized set of voices, sometimes usable only for playback of files created elsewhere, but not selectable from the instrument panel by the user; or from a company's library of legacy (older) voices; both usually using less memory, and therefore of lower quality than the company's latest offerings. That said, these additional voices can still come in handy for the power user who needs a certain unusual sound or combination of sounds, or for the playback of some music files that call for them. And ensemble digitals, with the diverse instrumentation contained in their many styles, can make good use of the extra voices. But most home users of standard digital pianos will find a dozen or two high-quality voices to be more than sufficient.

Keep in mind also that we've been speaking here only of an instrument's internal voices. These days, it's also possible to install additional high-quality piano and instrumental voices on your computer, and play them using your digital piano as a keyboard controller; or to download voices to the digital piano directly from the Internet via Bluetooth (both discussed later).

Piano Sound and Acoustic Piano Realism

Manufacturers create digital piano sounds either by recording actual pianos (known as sampling) or by using mathematical algorithms to mimic the acoustic properties of piano sounds (known as physical modeling). Some instruments employ a combination of the two methods. Whereas even the most expensive acoustic piano has only a single set of sound characteristics, many modestly priced digital pianos can reproduce the sounds of multiple sampled concert grands, pianos with different tonal characteristics, and imitations of vintage electronic keyboards, among others. Digital pianos that use physical modeling, and some that use sampling, may even allow the user to make extensive custom refinements to the built-in piano sounds.

Some kinds of music, especially classical, require a level of musical expression that traditional acoustic pianos have evolved to satisfy. For those who play, or plan to play, this music, the ability of a digital piano to imitate the sound, touch, and pedaling of an acoustic piano is important. For players of other kinds of music, however, the ability of a digital piano to sound or play like an acoustic one may be less important. Although virtually all digital pianos are designed to imitate acoustic pianos to some extent—that's why they're called digital pianos, not electronic keyboards—they vary considerably



in how accurately and thoroughly they do so.

The better digital pianos more accurately imitate an acoustic piano by, among other things:

Re-creating the piano's acoustical resonance, and the sympathetic vibrations of the strings of an acoustic piano's unplayed notes—that is, the keys the player hasn't struck—especially when the

sustain pedal is depressed, as well as the sound of a vibrating string being silenced by a damper when a key is released: sounds that are subconsciously part of the acoustic-piano experience.

 Having a larger number of speakers, or speakers that are better positioned; or special features like a soundboard speaker system, in which an

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acoustic-piano-style soundboard is used as a "speaker."

- Containing higher-quality key sensors to more accurately translate the speed with which a key is depressed into sound volume; re-creating the acoustic-piano action's feel of "escapement" as a key is depressed, and having wooden keys with keytops that imitate the feel of ivory, which absorbs sweat and so is less slippery to the touch than plastic.
- Including three pedals that perform the same functions as on an acoustic grand (soft, sostenuto, sustain), and a sustain pedal capable of half pedaling, a pedaling technique used by advanced players.

Note that all of the models that we consider to be digital pianos have 88 notes, the keys are weighted, and, in virtually all of them, the touchweights are graded (i.e., the resistance to your touch gradually decreases from bass to treble) across the range of the keyboard—all just as in an acoustic piano. Instruments with fewer than 88 notes, or with semi-weighted keyboards that depend on springs for their weight, should be avoided by those looking for a realistic acoustic-piano experience.

Connecting to a Computer

Virtually all digital pianos can be connected to a personal computer, allowing you to:

- Use computer software and a printer to record, notate (write), edit, and print the music you play
- Use software that will, for example, help you learn to play piano, train your musical ear, or teach you music history
- Use your digital piano as a keyboard controller for playing virtual instruments (i.e., instrumental sounds that reside on your computer)
- Play duets or practice with someone in a different location

Digital pianos communicate with a computer and each other via a music-technology language called Musical Instrument Digital Interface (MIDI). MIDI is not music—it's a stream of data commands that basically specify which notes are played, when, and how loudly, among other parameters. This common language allows music composed on one digital piano to sound more or less the same when played on another ("more or less" because, even when both instruments are playing their respective "piano" voice, for example, the tonal characteristics of the two "pianos" might be quite different from one another). MIDI also allows your digital piano to interact with music software on your computer.

Most digital pianos connect to a computer via a cable that plugs into USB ports on both ends. (The USB port on the digital piano is technically known as *USB to Host.*) A few of the less-expensive models rely on an older method: a cable from the MIDI ports of the piano to a USB port on the computer. The newest method of connecting to a computer is wirelessly via Bluetooth.

Bluetooth and Internet Connectivity

An increasing number of digital pianos are now equipped with Bluetooth, to link to the Internet using your smartphone or tablet as a hotspot. This feature is still in its infancy, so many of

its potential uses are not yet known; here are some of the ways it's currently being used:

- Stream virtually unlimited music, sounds, rhythms, and styles from the Internet, and play along with them and/or record them for later playback
- Access an app on your smartphone to change your digital piano's touch, tone, and tuning
- Access an app on your smartphone for sophisticated recording in MIDI or digital audio
- Access sheet music from the Internet and use an app on your smartphone to turn pages
- Access apps and online video tutorials to learn to play piano, or to teach yourself a particular song
- Access the piano manufacturer's user guide, instructional videos, and apps to learn to use and customize your instrument

Recording and Playback

Most digital pianos allow you to record your playing for future playback. Here are some of the reasons you might want to do this:

- To critically review your own piano playing, possibly with a teacher
- To play a duet with a recording you previously made of yourself, or one made by someone else
- To create a "one-person band" by recording different instrumental parts from the same piece of music on separate tracks and combining them into a single performance
- To create a soundtrack for a home video

As mentioned earlier, digital pianos create and record music as a sequence of MIDI commands—thus the name MIDI sequencer for the most common form of internal recorder in a digital piano. This type of recording system is popular because it requires relatively little memory, and because of its simplicity and flexibility: If you later want to play the music back with different instrumental sounds, all you need do is specify the different voices, usually by pressing a button or two—you don't have to re-record the music.

Digital piano models vary in their internal recording (MIDI sequencing) capabilities from one track to about 16 tracks. However, the trend in the industry today is to output the music from the instrument to a computer, and to use computer software, not the piano's internal recorder, for sophisticated recording and music editing. This MIDI sequencing software is generally inexpensive, runs faster than the piano's internal recorder, and is constantly evolving in sophistication. Thus, most digital pianos today have no more than three to five internal recording tracks, and often as few as one or two. A minority of models still have as many as 16 tracks, and the larger number of tracks could be convenient if, say,

you wanted to sketch out an idea requiring many instrumental voices and a computer wasn't nearby. But a few tracks will be more than enough for most nonprofessional users.

If you want to create a very highquality recording, however, it's generally necessary to record in a digital audio format, such as MP3 or .WAV, instead of MIDI; that is, to record the actual sound, rather than just the MIDI commands. This used to be the exclusive province of specialized, expensive workstations, but the ability to record in digital audio has now trickled down to many digital piano models. This type of recording is much more memory-consuming than MIDI sequencing, so it's usually stored on a USB memory device, such as a flash drive, plugged into the piano. The recording can then be transferred to a computer, where you could use it, for example, as the soundtrack of a home video, or upload it to social media, or e-mail it to family and friends.

SELECTED OTHER FEATURES

External Flash-Drive Storage

Some digital pianos allow you to store your recorded music and other files on USB flash

drives or memory cards plugged into a port provided for this purpose. (This port is technically known as *USB to Device.*) These may be files you've recorded, files you've downloaded from the Internet, or files of additional rhythm patterns and styles, additional voices, and user data such as the instrument's internal settings.

Vocal Support

Some digital pianos feature a microphone connection, on the theory that many who love to play also love to sing. At its most basic level, this feature simply uses the digital piano's audio system as a PA system for the singer. However, some models can also employ effects processing to enhance the performer's voice in some way, or can combine the vocal input with harmonizing to create four-part harmony. Some will also display karaoke lyrics, which, on some higher-end models, can also be output to a video display, such as a TV monitor. Without the vocal support feature, it would still be possible to run vocals through the instrument's speaker system via its line-in connection, but the microphone would require its own amplifier (or the use of an amplified mic), and the special effects mentioned above would not be available.

Educational Support

Some digital pianos include educational extras, such as digital piano lessons, a DVD, or a teaching app that can guide the beginner through a number of factory-installed or downloaded songs, even integrating with Internet connectivity to provide interactive coaching. While not a substitute for a private teacher or class lessons, these materials can be very useful to those who have only a casual interest in learning to play, or whose budget for lessons is limited.



In this tutorial, we've only barely scratched the surface of the amazing features of today's digital pianos. You can read about these and other features in greater depth in our online-only "Digital Piano Basics" articles. Read on for information and tips about the process of shopping for a digital piano.

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 mostly through traditional bricksand-mortar piano dealers, though increasingly they're finding their way into other types of outlet. The lowerpriced console, slab, or stage models, and some of the less widely distributed brands, are available from a cross section of traditional bricksand-mortar music retailers, club and warehouse chains such as Costco, consumer-electronics chains such as Best Buy, big-box instrument stores such as Guitar Center, and online retailers such as Amazon, Kraft Music, Musicians Friend, and Sweetwater Music. If you enter into a search engine the specific brand and model of instrument you're looking for, and the name of the city you live in or near, the search results will usually show both online and local sources for that model.

At a bricks-and-mortar retailer, prices are usually somewhat flexible, and negotiating the price of a digital piano is no different from negotiating the price of an acoustic piano (as is discussed in "Piano Buying Basics," elsewhere in this issue). But wherever you shop, you'll find that many of the simpler console digitals and nearly

all slab and stage-piano models that are sold through a variety of local and online stores are virtually always sold at the same price. This is due to a pricing model called *minimum advertised price* (or MAP), that's 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 at winning 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 selling price is rarely lower than the MAP. Therefore, MAP has become the standard pricing for all non-piano-dealer models of digital piano. (Note: In practice, retailers will often get around the MAP advertising restriction by offering discounts on accessories when you buy the instrument. Also, the restriction is only on the advertised price, not the selling price. With online retailers, it may be possible to get a lower price if you can speak with a salesperson over the phone.)

In deciding where to buy, consider what level of service and support you require. Do you:

- Want to try out an instrument before buying?
- Need the help of a salesperson in choosing an instrument or in learning how to use it?
- Need someone to come out to your home to install or set up the instrument?
- Want local warranty support in case you encounter a problem?

If the answer to any of these is "yes," then you should buy from a piano dealer, or other bricks-and-mortar music dealer, as these services will not be available from online retailers, and will be minimal at best from mass merchandisers

like Costco. To some extent this will limit the models available to you, as bricks-and-mortar dealers are more likely to stock models whose higher prices and profit margin can support the services they provide. On the other hand, if you're experienced at buying music technology online, pretty much know what you want, or are a beginner with few requirements and just buying something inexpensive, you may find it quicker, easier, and cheaper to buy online.

Tips for the Serious Shopper

If you're going to be shopping for an instrument among local bricks-and-mortar music retailers, the following shopping tips may be useful:

- Calibrate your ears. Before you shop, "calibrate" your ears by listening to recordings of solo piano. Listen to whatever type of music you enjoy—and use the headphones you bought for your digital piano. This will embed in your mind, as a benchmark, the sound of high-quality acoustic pianos.
- **Evaluate the tone.** 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 instrument voices you think you'll use most, and make them the standard for comparison as you shop. If you choose the digital piano on which those voices sound best to you, it's likely you'll find the other voices satisfying as well. Take detailed notes and use them to establish your favorite(s).
- Turn off effects. Be aware that the default 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



you, with reverb and all other effects turned off. This will allow you to judge those voices without any coloration or masking from the effects.

- Evaluate the touch. Aside from sound, the most important element in the selection of an instrument is likely to be the feel of the action. You'll be selecting from a variety of actions that all try to emulate the feel of an acoustic piano—some lighter, some heavier. Just as there is no single correct piano sound, there is no single correct touch; rather, there is a range of acceptable touches. If you spend most of your playing time with a heavy action, then when you encounter an instrument with a lighter action, you'll play too heavily and vice versa. The cure is to play
- as many instruments as possible, as often as possible. Listen to how each piano responds and adjust your touch accordingly. With experience, you'll learn to adapt.
- *Use the salesperson.* Digital pianos are really computers disguised as pianos, and 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. But remember that the salesperson is not going home
- with you, so don't be swayed by his or her talent. Listen to what they have to say, but focus your attention on the instrument itself.
- Used digitals. Because digitalpiano 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—electronics manufacturers are required to maintain replacement parts for only seven years after production ceases—and investing in older models becomes worthy of serious second thoughts.

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Review: A FIRST LOOK AT KAWAI'S NOVUS NV10 HYBRID

DR. OWEN LOVELL

he hybrid segment of the piano market continues to expand in market share. Though the term is not yet precisely defined by the industry, *hybrid* typically refers to digital pianos that contain actual acoustic-piano elements in their sound production and/or action design, and to acoustic pianos that contain digital technologies to enhance their functionality. Buyers of digital-piano hybrids tend to occupy one of two categories: digital-piano enthusiasts who are looking for the ultimate piano but would never consider the purchase price or space and maintenance requirements of a fine acoustic grand; and professional pianists and teachers looking for a space-saving, headphone-capable alternative to an acoustic grand, without sacrificing playability.

For years, these digital hybrid segments have been dominated by Yamaha's AvantGrand models N1, N2, and N3X. In the last decade, however, Kawai's lines of digital, stage, and hybrid pianos have continued to diversify and improve in performance, and Kawai has now rekindled its traditional rivalry with Yamaha by introducing to the hybrid market a direct competitor to the AvantGrand: the Novus NV10 Hybrid. In late January, after show hours at the 2018 National Association of Music Merchants (NAMM) trade event, I had the opportunity to test an early-production NV10 in a quiet room.

tend to make flowery but dubious claims of how authentically their digital-piano actions re-create the touch of a real concert grand, but in my experience, the Kawai Novus is one of the very few that do perform like the genuine article. At Kawai's NAMM Show exhibit, I was able to rapidly go back and forth between the Novus, Kawai's lower-cost GL grands and midline GX grands, and even the limited-production Shigeru Kawai grands, including the 9' SK-EX concert grand. Save for a little less feeling of solidity at the bottom of the keystroke, the realism of the Novus's action was remarkable.

The Action

On first playing, the most noticeable positive attribute of the Novus NV10 Hybrid was its action—the same Millennium III action found in Kawai's well-regarded and durable acoustic grand pianos.

This action is mostly made from composite materials—ABS plastic and carbon fiber—with remaining parts of natural materials, such as wood, felt, and leather. Because the heart of the Novus is digital and therefore it has no strings, the action has no felt hammers to strike them with. Other than this, however, the action is recognizable as that of an acoustic grand in every way—right down to the keysticks, which are made of wood, with counterweights of exactly the same design as those in the keys of acoustic grands. The marketing departments of digital piano manufacturers



The Millennium III Hybrid grand action used in the Novus NV10.



It's worth noting that the actions of acoustic grand pianos, like that of the Novus NV10 Hybrid, are mechanically louder than typical digital-piano actions. It's something one doesn't notice in normal playing because the music masks the mechanical noise, but if others are in your vicinity while you're playing technically demanding passages using headphones (which cut off the sound from the speakers), the mechanical noise may come as a surprise to them.

Digital piano shoppers typically, and understandably, like to compare the published specifications of the pianos they're considering choosing among. However, the Kawai Novus is different in a way that may not show up in the numbers but that strongly matters to pianists, and brings to the digital-piano industry an important first. As in most other good digital pianos on the market today, the touch weight of the Novus's action is graded it's heavier in the bass, lighter in the treble, to mimic the change in mass of an acoustic piano's hammers. But the Novus's touch weight also varies based on whether or not the damper pedal is depressed. When an acoustic piano's damper pedal is depressed, the touch weight of the keys becomes lighter, because the player's foot, instead of the fingers, bears the weight of the damper mechanism. The Novus is the first production digital piano from a major manufacturer to re-create this feeling—a subtle and important enhancement of the player's sense of musical control. Although I was unable to see exactly how this works, Kawai says that using the Novus's damper pedal mechanically eases the action's touch weight, and I could definitely feel the familiar connection between the motion of my foot and the change in pressure of my fingers on the keys. The damper pedal was on the firm side, but within the normal range of what I'd expect when playing a variety of acoustic grands.

Amplifiers and Speakers

Like some of Kawai's other new high-end offerings, the Novus uses amplifiers and speakers designed through a recent partnership with Onkyo, the well-regarded Japanese maker of consumer electronics that specializes in home theater and audio equipment. The NV10 has seven speakers, three amplifiers, and a specified maximum output power of 135 watts. (Pet Peeve: Unlike the audio industry, digital-piano manufacturers usually don't specify if their products' power specs are peak or continuous, or the frequency bandwidth of the measurement.) Dome tweeters and midrange drivers are within the player's line of sight, while the 6.3" woofer is hidden inside the rear-support pedestal leg of the piano, which has been designed to function as a bass-reflex box to enhance the low-bass performance.

The Novus's speakers were powerful enough to re-create any dynamic levels I could desire from an acoustic grand piano. In fact, with the volume turned up all the way, the Novus produced *more* sound than the acoustic grand next to it, at least from the player's perspective. When I played bass notes at *forte*, the bass driver and its enclosure excited the case of the NV10, transmitting resonance vibrations through the keys to my fingers—perhaps even more than with an acoustic grand. With its upward-firing midrange and treble speakers, I could hear the stereo image pan fairly sharply from left to right as I played from the bass through the high treble.

A minor quibble about the locations of two of the four top-mounted speaker grilles: They're partially obscured by the music desk and sheet music, which makes the music less audible, at least from the player's point of view. Ironically, this is actually similar to the effect a music desk can have on the sound coming from the soundboard and strings of an acoustic grand—but *un*like with an acoustic grand, putting the NV10's music desk fully down to its closed position made this effect worse, because the desk then partially covered the speakers. In fairness, though, a listener in the room during this test, seated off to the side of the Novus, where the audience would be in a traditional concert setting, remarked quite favorably about the realism of the soundstage.

Realizing that digital pianos are so often used with headphones, manufacturers of high-end digital and hybrid pianos have recently taken steps to improve sound quality when their instruments are played that way. Kawai touts its Discrete SpectraModule headphone amplifier and Spatial Headphone Sound, also developed with Onkyo. Since I didn't have my familiar, reference headphones available (NAMM Show security is fussy about anyone other than manufacturers bringing gear into or out of the show facilities), and no two headphone models sound precisely identical, I didn't spend much time testing this playing mode of the Novus. If silent play is likely to account for a significant amount of your playing time, I suggest bringing along a favorite pair of headphones when auditioning this instrument.

Like so many devices, the Novus NV10 is Bluetooth-capable. You can wirelessly stream audio from a connected computer, tablet, or phone through the piano's high-quality amplifier and speakers, bypassing the wired connection hub on the front of the instrument. Kawai offers a couple of apps for the Novus, such as Touch Notation and Virtual Technician, and third-party apps are becoming increasingly available.

The Look

Interestingly, the Kawai Novus incorporates design elements of both vertical and grand acoustic pianos. The curved sides, pedals, music desk, and legs evoke the image of a small grand piano; however, looking at the keyboard from the front or from above, the visual cues are more reminiscent of an elegant console vertical in a polished ebony finish. The rear view is decidedly more basic and utilitarian: just matte black paneling, a brand logo, and screws that provide access to some of the piano's inner workings. The midrange and high-frequency drivers are recessed into the top panel, behind grilles. Finally, the playing surface is free of all buttons. The only visual cue that you're playing a hybrid piano is the 5" color LCD touchscreen in the left cheekblock. The power button, volume knob, and connections hub are discreetly hidden on the underside of the keybed. Like many acoustic pianos, the NV10 features a slow-close fallboard.

The Touchscreen and Settings

The Novus is controlled primarily through its beautiful color LCD touchscreen. The settings include instrument selection (88 voices), Virtual Technician adjustments (19 parameters, even the ability to voice individual notes!), reverb (6 types), ambience (10 types), and dozens of additional effects. Taking time to experiment with the many available customizations can make the most of your NV10 experience. For example, I took a liking to the equalization adjustments that Kawai's head U.S. technician had created on the display model at NAMM, overriding the default concert-grand settings. Like other digital pianos, there is also a song recorder (including MP3 and WAV digital audio formats in addition to standard MIDI), a metronome, and prerecorded lesson songs from popular and historic piano method books.

Using the touchscreen requires a mix of swipes and taps, and the animated graphics move in a rather attractive way to match your inputs. Selecting sounds and instrument families by swiping did require a refined fingertip control, so as not to repeatedly overshoot my intended selections. I expect that awkwardness might be addressed in a future software update; Kawai's digital division has a good reputation for responding to customer feedback and offering complimentary software/firmware updates.

Modes and Voices

The Novus NV10 offers two modes of operation: Pianist Mode and Sound Mode. Pianist Mode features Kawai's SK-EX Rendering sound engine, also used in a few other recently released high-end Kawai models, such as the CA98 and CA78. This sound engine uses both sampling and modeling to create its piano sounds, combining



The NV10 is controlled via a color LCD touchscreen in the left cheekblock (keyblock).

Kawai Novus NV10 Hybrid Specifications

Keyboard, Action & Pedals:

- Millennium III Hybrid grand action with 88 wooden keys and graded ABS hammers
- Contact-less optical sensors
- Real grand piano damper mechanism
- 3 pedals: sustain, sostenuto, and soft; support for half-pedaling

Piano Sound: Pianist Mode

- 88-key multi-channel sampling of Shigeru Kawai SK-EX concert grand
- 88-key Resonance Modeling of damper resonance, string resonance, undamped string resonance, and aliquot resonance
- 10 rendering submodes: Classic, Romantic, Full, Jazz, Brilliant, Rich, Ballad, Pop, Vintage, Boogie
- Ambience effects (10 types)

Piano Sound: Sound Mode

- 88-key stereo sampling of Shigeru Kawai SK-EX and SK-5 and Kawai EX grands
- Acoustic Rendering of damper resonance, string resonance, undamped string resonance, and cabinet resonance
- 88 voices
- 256-note maximum polyphony
- Reverb (6 types)

Virtual Technician function with 19 adjustable parameters

Amplifiers & Speakers

- Developed in partnership with Onkyo
- Maximum power output: 135 watts (45Wx3)
- Two 1.4 cm (dome tweeters), four 10 cm (top speakers), one 16 cm (woofer)
- Enhanced headphone amplifier
- Integrated Bluetooth MIDI and Audio

Recording: MP3/WAV/SMF playback, record, and overdub to USB

Display: 5" color LCD touchscreen (480x800 pixels) embedded in cheekblock

Cabinet

- Polished ebony finish
- Slow-close fallboard
- Adjustable (6 angles), collapsible music desk
- 36.4" H x 58.2" W x 25.3" D
- 279 lbs

Price: \$15,999 (MSRP), \$12,995 (Est. street)

multi-channel sampling of Kawai's best acoustic pianos with Resonance Modeling to duplicate effects such as damper resonance and string resonance. In Pianist Mode, the Novus has fewer functions and adjustments than in Sound Mode; however, in Pianist Mode the processor's workflow is optimized for one purpose: piano sound quality. Compared with Sound Mode, Pianist

Mode provides the more enveloping and high-resolution experience, with better simulation of tonal complexity and a three-dimensional soundstage. Characteristics such as pedal and damper resonance and sound decay are optimized to the point where they can actually sound exaggerated. This was particularly true when I used the instrument's default settings and briefly compared its sound, back-to-back, with that of a real Shigeru Kawai SK-EX concert grand—but this level of sensory oversaturation can be brought back to a more realistic level by using the customization settings or the Virtual Technician pane.

In Pianist Mode, Kawai provides ten very thoroughly developed, customized sound-processing submodes: Classic, Romantic, Full, Jazz, Brilliant, Rich, Ballad, Pop, Vintage, and Boogie. I suggest exploring these in their default settings to find a "flavor" you prefer, then customizing it to your liking. Sound Mode uses Kawai's Harmonic Imaging XL sound engine, which is shared by most of the company's better digital piano models. This somewhat less resource-intensive mode lets the user layer instruments and split the keyboard into zones, functions that should be familiar to experienced users of digital pianos.

My favorite instrumental voices on the Novus NV10 included all of the acoustic pianos—they sampled various Kawai acoustic grand and vertical models—as well as the electric pianos and jazz organs, the celesta (institutions may find this useful, as real celestas have become eye-wateringly expensive), and some surprisingly good electric-bass patches. The choir, pipe organ, and certain string sounds seemed, by comparison, a bit less refined. As far as instruments go, the top item on my wish list (considering the professional-level keyboardists who will probably be shopping for this model) is a harpsichord sound as carefully developed as the piano sounds.

Ten years ago, I would never have imagined the existence of a hybrid piano with the capabilities of Kawai's Novus NV10. As the technology and playability of these instruments advance, I'm discovering high-level professional classical and jazz pianists—the snobbiest of piano snobs—who now own a hybrid piano as a practice instrument or are seriously considering buying one. The traditional acoustic piano will never be completely replaced, nor should it be—but it's fascinating to see the inroads these flagship hybrid models are now making into the conservative, traditional world of acoustic grands.

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AN INTRODUCTION TO SOFTWARE PIANOS My Other Piano Is a Computer

ALDEN SKINNER



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 midrange computers, to those requiring higher-speed multi-core processors, 8 Gigabytes (GB) of RAM, over 250 GB of free hard-disk space (preferably on a fast SSD 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 soundcard choices will also keep latency in



check. Latency is how long it takes the computer to produce a sound from the time you press a key. When latency becomes noticeable, your brain doesn't know whether to slow your playing so that the sound can catch up, or to speed up to make the sound happen faster. Neither of these works. (Anyone who plays the pipe organ knows what latency is, and will adapt to it without a second thought.)

Software

This is where the real fun starts. There are currently dozens of software-piano packages available, at prices ranging from under \$50 to over \$500. These include both sample-based packages and packages based on physical modeling. There are products on the market for Mac, PC, and even mobile-device platforms. 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

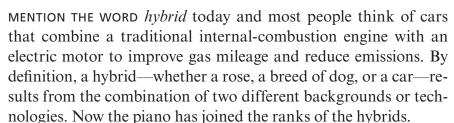
your palette, there are also packages with samples from historical fortepianos.

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.



Hybrid Pianos

ALDEN SKINNER AND LARRY FINE



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 manufac-

turers 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 in-

formation 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

A hybrid results from the combination of two different technologies. 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; a version whose digital piano sound is broadcast by the acoustic piano's soundboard is called TransAcoustic. Kawai calls its hybrid-piano series (including one model with a soundboard speaker system) AnyTime. PianoDisc calls its two add-on systems QuietTime and ProRecord; QRS's version is called SilentPNO.

Yamaha's Silent Pianos have sensors associated with their 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



(ATX).

of Yamaha's Silent System, the acoustic piano can be silenced and the instrument used as a digital piano with a real piano action.

Two new Silent Systems are now available. The SG2 system is available in the b1, b2, and b3 vertical models and the GB1K grand. This system offers a CFIIIS concert grand piano voice, nine additional voices, can record and playback MIDI files, and has USB capability to preserve recorded performances. The SH system, used in all other piano models, offers a piano voice that uses binaural sampling of the CFX concert grand, 18 additional voices, can record and play back MIDI and audio files, and has USB capability to preserve recorded performances. SH grand models also incorporate a QuickEscape mechanism that automatically adjusts the action when the Silent System is engaged so that the touch feels the same whether the piano is being played acoustically or in silent mode.

Yamaha now also offers its Trans-Acoustic piano series, with several vertical and grand models. Like the Silent Piano, the TransAcoustic (TA)

is an acoustic piano that can also send digitally sampled sounds, including Yamaha's CFX Concert Grand samples, directly to headphones, sound systems, mixers, etc. The TransAcoustic differs from the Silent Piano in having two transducers attached to the piano's soundboard. The transducers convert the digital signal into an electromechanical impulse that sets the soundboard vibrating—literally turning soundboard into a loudspeaker. The soundboard, strings, and case provide a natural acoustic resonance for the digital samples, which can be played at even the softest volumes without the use of headphones and, when combined with the piano's normal acoustic sound, can produce a more richly textured sound.

Kawai's silent/hybrid pianos, known as **AnyTime** (ATX), are part of its K series of vertical pianos. The K15-ATX2 (44") is a basic model; the more advanced K200-ATX2 (45") and K300-ATX2 (48") use the digital sound engine from Kawai's top-of-the-line CA-95 digital piano, as well as optical key and hammer sensors for the most sensitive control. The K300-AT2X also has a soundboard speaker system, similar in concept to that of Yamaha's TransAcoustic piano.

QuietTime, from PianoDisc, can mute an acoustic piano and let the user hear his or her performance through headphones via sampled sound. The QuietTime MagicStar V5 S Series, introduced in 2013, has a slimline control unit that includes a touchscreen and iDevice compatibility. It also supports all three pedals, has a port for a USB stick, and comes with 80 demo songs. The control-unit sound module contains 128 sampled instruments, including a full General MIDI (GM) sound set, as well as 11 popular instrument presets, such as piano with strings. It also includes a built-in, adjustable metronome. A MIDI key-sensor strip is installed under the keys, and a padded mute rail prevents the hammers from hitting the strings while retaining the motion and feel of the piano action. The mute rail is activated by moving a small lever under the keyboard, which also turns on the sampled sound. MagicStar comes with a control unit, power supply, MIDI cable, MIDI strip, pedal switches, headphones, and mute rail. When the piano is to be used as a MIDI controller only (i.e., with no sound module or with a separate sound module), the MIDI key-sensor strip can be purchased from PianoDisc separately as Pro-Scan, with or without the mute rail and headphones.

In late 2013, PianoDisc introduced another product in the Quiet-Time family: **ProRecord**. ProRecord uses fully optical, no-contact, high-speed key and pedal sensors to capture and record key and pedal movements. The system's sensitivity can be calibrated to a very fine level, allowing it to be customized to a particular piano action or player so that, for example, trills can be

accurately reproduced when playing near the bottom or top of the key, even on a vertical piano. ProRecord comes with a tone generator with a GM2 128 + 100 instrument sound set and nine drum kits, including sympathetic string and damper resonance. The system is compatible with both Apple and Android smartphones, tablets, and apps, and with the PianoDisc iQ player-piano system. Like MagicStar, ProRecord comes with headphones, and a mute rail for muting the acoustic piano.

SilentPNO, from QRS, consists of the PNOscan record strip, a PNOmation II sound module, Wi-Fi adapter, and a stop rail for muting the acoustic piano. By muting the piano and turning on the soundcard, the pianist can play in privacy with headphones and enjoy the automatic recording features of PNOcloud and PNOmation, described 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 playerpiano features. Exacting copies of performances can be sent to similarly equipped instruments for playback, and critiques—with musical examples—can be sent back to the student. Some systems enable this interaction in real time over broadband connections, complete with synchronized video.

As we've said, most of the activity in the field of acoustic hybrids has been among player-piano makers, whose offerings have been either specialized (Silent Piano) or add-ons (QuietTime, SilentPNO). However, MIDI capabilities are now standard in all acoustic pianos, vertical and grand, made by Story & Clark, a subsidiary of QRS, the only piano maker so far to have done this. If you add a stop rail to silence the piano (available from QRS) and a sound source, you could turn one of these instruments into a "silent" type of hybrid like those described above. But even without those additions, a Story & Clark piano can be used with a personal computer and music software for recording,



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

notation, controlling computerproduced 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*.

Many digital piano

actions these days

have weighted and/

or wooden keys, and

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acoustic piano action.

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 be formally named a Hybrid Piano. Yamaha unveiled its Avant-Grand series in 2009. The Avant-Grand elevates the digital piano to a new level with a number of

hybrid technologies, first of which is a real 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 or not 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 physically contacting any part of the action.

All three AvantGrand models have grand-piano actions, but whereas model N3 is also shaped like a grand, the cabinets of the lower-cost N1 and N2 are closer to that of a vertical piano (which brings up the interesting observation that the decision of whether to call a digital piano a "grand" or a "vertical" is not a simple one). In 2012, Yamaha introduced the model NU1 Hybrid Piano, the first digital piano with a real vertical-piano action.

One aspect of the traditional acoustic-vs.-digital argument that changes with the addition of a real action is the digital's advantage of rarely needing maintenance. While the AvantGrand and NU1 models will never need to be tuned, eventually their actions will require some degree of adjustment or regulation. (We'll bet the piano technician will be surprised when, on arriving to regulate an action, he or she finds the "piano" is a digital.)

But there's more to the feel of an acoustic piano than its action, and this brings us to the last attribute of acoustic pianos that designers of digitals have attempted to copy: the intangibles. With the AvantGrand, one "intangible"—the vibrations generated by the strings and transmitted throughout the instrument—has been made tangible. Yamaha has added this ingredient to the N2 and N3 by connecting transducers to the action to send the appropriate frequency

and degree of vibration to the player's fingers. This is where the experience of playing becomes a bit . . . spooky. Not unlike an amusement-park ride that convinces 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 nonexistent strings.

The illusions don't stop there. When you depress a digital piano's sustain pedal, you're pressing a spring with 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. Here again, the AvantGrand does a convincing job of conveying the feel and, perhaps more important, the degree of control available with an acoustic's sustain pedal, including half-pedaling and incremental control. The N3's four-channel sample set and 12-speaker audio system are also convincing, easily tricking the ears into thinking that considerably more than four feet of piano are in front of you. The AvantGrand and NU1 models all use samples from Yamaha concert grands for their sounds.

One area in which digital pianos are not intended to emulate acoustics is that of price. The Hybrid Pianos, with the sound and, in some cases, perhaps the experience, of a Yamaha concert grand, are priced similarly to some of the company's least expensive acoustic grands and verticals. Actually, such comparisons are barely possible—the acoustics lack many of the digitals' features, such as onboard recording, USB memory, transposition, and alternate tunings.

Which Side Are You On?

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.





Buying an Electronic Player-Piano System

LARRY FINE



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, smartphones, iPads, and MP3 files. Today, nearly one out of every four 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, or on your tablet or notebook, while, simultaneously, his performance, with orchestra, is faithfully reproduced on your own piano, "live" in your living room! The features and technological capabilities are already vast and are 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 and composing, you should first decide whether or not you want the ability to record what you or others play on your piano, or to use the piano for music notation. In many typical family situations, the piano, just like Grandma's, is primarily used for 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 want to add those. 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; others are available only on a specific make of piano. When installed in a new piano, some systems must be installed by the piano's 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 somewhat 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.

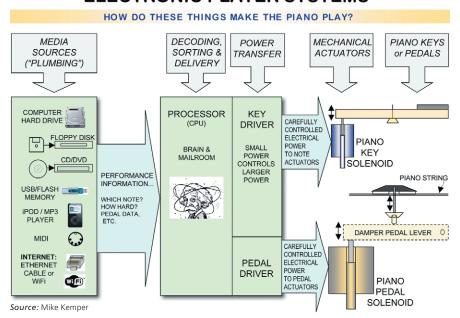
The player systems currently on the market can be described as falling into two categories: those that are used mostly in situations requiring only low- to medium-quality playback reproduction, and

those whose playback and/or recording functions are of audiophile quality and are intended for the most discriminating or high-level professional users. The first category includes systems by PianoDisc, Pianoforce, ORS, and most Yamaha Disklaviers. When used as playback-only systems, these are suitable for home entertainment, and for commercial use in restaurants. hotels, assisted-living facilities, etc. When outfitted with recording capabilities and/or with a "silent" feature that mutes the acoustic piano's sound, they become more useful for students, and for lighter professional use for music notation or as a MIDI controller. The audiophile category includes the Steinway Spirio and the Disklavier Pro models. However, this classification scheme doesn't entirely



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

ELECTRONIC PLAYER SYSTEMS



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 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. When buying a piano, the performance quality of the player-piano system will be limited, to a large extent, by the performance quality of the piano itself. Don't scrimp on the piano, just to be able to afford a player system for it.

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 (a shelflike part of the piano that supports the keys and action)
- a processor unit and other electronics mounted out of sight under the piano
- Some models use a control box that plays MP3s, DVDs, 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 control box contains no disc 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 is also generally included with these units.
- In place of a control box, most newer models now use as the system's remote control an iPad or other tablet, or a smartphone, linked to a WiFi station such as Apple's Airport Express mounted

- out of sight under a grand piano or inside an upright. A number of apps are available for operating and calibrating the system.
- One or more amplified speakers are installed out of sight under the grand piano or inside the upright models—unless you choose a system configuration that uses your own speaker system.

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, causing the appropriate keys and pedals to move up and down. When playing, one track contains the datastream that controls the piano solenoids; the other track provides 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. A wide selection of piano solos is also available.

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 motions. This information can be stored for later playback on the same piano, stored on other media, sent to other MIDI-compatible devices, or imported into a computer.

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), QuietTime or ProRecord (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. (For more information, see the article "Hybrid Pianos" elsewhere in this issue.)

Common Features

Basic player-piano systems share a number of features:

- live playback of piano music with a good reproduction of the artist's performance. The keys, and in some systems the pedals, actually move up and down.
- 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 audio 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 and wireless connections, including MP3s, iPads, 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 most computers, 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 as MP3 downloads from a website, or as CDs or DVDs. A significant caveat is that one manufacturer's software may, by design, not work unconditionally with another manufacturer's hardware.

Questions to Consider

To list and compare the wide variety of features and capabilities offered by each of the many 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 (retrofitted to) any piano, 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: smartphones, Internet downloads, iPads and other tablets, MP3s, CDs, 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? The addition of an acoustic-piano silencing mechanism will allow you to play silently with headphones, or to connect to a computer to edit and transcribe music, among other benefits.
- 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?
- Equipment: Do you need a system with a CD player and/or iPad 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?
- 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 few 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 hear if it meets your musical expectations for dynamic resolution. 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 systems have higher processor speeds that scan the system a greater number of times per second for higher resolution. Some record by sensing only key movements, while others, for greater accuracy, also sense hammershank movements. It's important to note that some systems that are theoretically capable of playing back with high resolution nonetheless come with music that has been prerecorded at lower resolution. Music can never be played back at a level of sound quality higher than that at which it was recorded.

- 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).
- Does the system 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 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
- Options: What special features, advantages, and benefits are included or are optionally available? Examples include the ability to synchronize the piano with commercially available MP3s, CDs, and DVDs, features used for teaching purposes, a 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 costs of electronic player-piano systems vary 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 in brands that they own; for example, QRS PNOmation in Story & Clark pianos, and Piano-Disc in Mason & Hamlin instruments. When installed this way, the difference in price between the piano alone and the piano plus player system may be 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 or her own shop, installs a system in a piano already on the showroom floor—with most brands of piano, either of these can be done. These installations require more labor that those done while the piano is being manufactured. 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 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 his or her 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 difficult. 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 \$5,500 to \$7,000 to the piano's street price, with recording capability adding another \$1,500 or so. However, for the reasons given above, prices 20% lower or higher aren't unusual.

As for systems available only as factory installations, Yamaha Disklavier grands generally cost \$10,000 to \$15,000 (street price) more than the same Yamaha model without the player system. At the time of this writing, the Steinway Spirio is about \$25,000 more expensive than the Steinway piano alone. The retail prices of these systems are included under their companies' listings in the "Model & Pricing Guide."

Mike Kemper, a Los Angeles-based piano technician and expert on electronic player-piano systems, contributed to the original version of this article. *Piano Buyer's* Contributing Editor **Steve Cohen** contributed to this article's most recent revision.

THE SYSTEMS

PIANODISC

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www.pianodisc.com

PianoDisc is a leading manufacturer of player-piano and optical MIDI sensor and record systems. The company, celebrating its 30th anniversary in 2018, offers retrofittable systems that can be installed in virtually any acoustic piano, grand or vertical, new or used. A number of piano manufacturers offer factory-installed PianoDisc systems, and a large network of PianoDisc dealers and certified technicians throughout the world offer installation services.

PianoDisc manufactures three core player-piano systems featuring its iQ Intelligent technology: iQ Entertainment, iQ Interactive, and iQ QuietTime. The iQ Entertainment system is the most popular and least expensive, and provides playback-only capabilities. The iQ Interactive system also provides playback functionality and, with the addition of an optical MIDI strip, allows the user to record performances and interact with MIDI music apps such as PianoDisc iQ Player (described below), Garage Band, Symphonix Evolution, and Piano Marvel, to name a few. The iQ QuietTime system is essentially an iQ Interactive system, but the addition of a manually activated mechanical mute rail to prevent the piano's hammers from striking the strings eliminates the normal acoustic-piano sound. The user can then listen through headphones (provided) without being disturbed by surrounding sounds, and/or play without disturbing others. Although most buyers use their own smartphones, tablets, or computers to control their iQ systems, PianoDisc offers several media-player packages that include Apple's popular iPad devices, Android-based devices, or a USB/SD/MMC-driven control box called iQ Flash.

At the heart of the PianoDisc iQ player is SilentDrive HDII, a high-resolution solenoid system that features integrated Bluetooth audio and



iQ Flash, an entry-level system, is part of the PianoDisc line.

MIDI for fast wireless connections, easy operation, and additional connection flexibility. With 1,024 levels of expression, SD HDII can replay piano performances with highly accurate articulation, even at very low volume. The first generation of Silent Drive HD featured a separate iQ control box and CPU. The new SD HDII combines the iQ control box and the CPU in one box, which results in easier and cleaner installations with fewer cables and components.

All PianoDisc iQ systems come with a complimentary music and video library consisting of nearly 500 songs and 15 video performances, valued at \$1,400. When a customer registers a PianoDisc warranty, he or she receives a \$175 coupon that can be used toward the purchase of music or videos from PianoDisc's large library. Recently, PianoDisc began offering single-song downloads from its Music Store, in addition to downloads of entire albums.

The introduction of the PianoDisc iQ Player app (free for iOS devices) makes it easier and more enjoyable to operate all of the music and video features offered by the iQ Intelligent Player Piano system. This powerful app permits the user to download music or video performances from the PianoDisc Music Store directly into the app, and automatically downloads the free music library. The Player app also lets you download and play MIDI files on the iQ system, stream free PianoDisc Radio stations, create playlists, record MIDI performances, and much more.

Older PianoDisc systems—such as the PDS128+, 228CFX, PianoCD, and Opus7—can be easily upgraded to an iQ system. In many cases, the upgrade retains most of the original player system's components (e.g., the power supply, driver boards, solenoids, and CPU) but eliminates the bulky control box. This makes for a



Just Dream

And take flight into a land of creativity, entertainment and endless possibilities with PianoDisc iQ and your piano.

- it easy to create, enjoy and learn:
 - ◆ PianoDisc Radio Streaming
 - ◆ PianoDisc Calibration
 - ◆ PianoDisc ProRecord III
 - ◆ PianoDisc Remote

Also, choose from hundreds of Piano Education Apps in the Apple iOS store.

Plus, Bluetooth MIDI option is now available.



"When I purchased a wonderful Bösendorfer grand piano for my new studio, I knew that I wanted to outfit it with the best MIDI playback system I could find so the piano could be used for both arrangements and recording. The SilentDrive HD system quickly became the top choice and I've been very pleased with its performance."

Danny Elfman – composer, singer, songwriter, and record producer. Photo by Jimmy Lenner, Jr.



Create. Enjoy. Learn.

www.PianoDisc.com

piano with a much more attractive look, and provides many of the features that a new iQ system would offer at a much lower price. As with a complete new iQ player system, an iQ upgrade comes with the \$1,400 complimentary music package. Upgrade customers can also take advantage of PianoDisc's popular Legacy Music Exchange program, which allows the exchange of music on Floppy Disk or CD for music in high-quality MP3 file format, playable on the user's smartphone or tablet device.

PianoDisc also manufactures two optical MIDI and Record systems, ProRecord and ProScan. These systems feature optical sensors, installed under the keys of the piano, that transmit information about the notes played: i.e. attack velocity, note duration, pedal effects, etc. This information, called MIDI data, can then be recorded using a MIDI app (e.g., Symphonix Evolution) or MIDI computer software program (e.g., Finale), or sent to another MIDI device or keyboard.

Whereas ProScan is simply a MIDI sensor strip, ProRecord also has a built-in sound module that contains 88 high-quality digital instruments and numerous other features and functions, including recording capabilities, metronome functions, transpose and tempo adjustments, digital effects, and much more. With Bluetooth-ready integration, Pro-Record can pair quickly and easily with an iPad or iPhone using the free ProRecord app and the very userfriendly interface. All of the features and functions of the ProRecord system can be accessed from the Pro-Record app, eliminating the need to look down at the small display screen and buttons of the ProRecord control box.

Both ProRecord and ProScan can be integrated into an iQ player system, or used without the player-piano function to create a standalone digital piano or MIDI controller. Additionally, both systems can be fitted with an optional mute rail, which transforms the system into a QuietTime, or "silent," system for private practice.

The recent release of the updated PianoDisc Calibrate app (free for iOS devices) will benefit PianoDisc technicians and installers. The Calibrate app allows a technician to perform all of the necessary initial iQ setup and calibration steps more easily and quickly than before, with noticeably better results. It's important to note, however, that this app is designed for use by certified PianoDisc technicians only, not by end users.

PIANOFORCE

Pianoforce Inc., U.S.A. 115 South Ohio Sedalia, Missouri 65301 877-542-8807 sales@pianoforce.us www.pianoforce.com

Pianoforce is a relatively new entrant in the player-piano market under its own name, but the company that makes it—formerly Ncode Ltd., now Pianoforce EU, 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 kit retrofittable to any piano, new or old. Designed and built by Pianoforce in Europe, the kit is ordered through a piano dealer, and is typically installed in a new piano 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, simpler installation. Also, a technician using the remote handset can customize the system to the piano and to the customer's preferences through the adjustment of many playing parameters, such as solenoid force, note release, and pedal release. These custom settings can then be saved in the controller. With the help of a small sensor mounted on the soundboard, the system automatically calibrates itself to the piano's sound. The combination of automatic calibration and manual setup ensures the best playback performance for each individual piano.

In 2007 Pianoforce introduced its latest controller, the Performance. Expanding on the company's past experience in supplying control components for other manufacturers, the new controller contains some of the newest, most advanced features available in a player piano, such as the ability to read the softwares of other systems-including Yamaha Disklavier, QRS (except SyncAlong), and Web Only Piano—plus standard MIDI files; and onboard connections to the Internet via an Ethernet or wireless hookup. There are three USB ports for greater versatility, such as plugging in flash drives or an external hard drive. There is an optical digital stereo output and a dedicated subwoofer output line. The system can now be controlled remotely, via WiFi, with the user's Android or Apple device, and Internet streaming radio is available 24/7 with piano accompanied by original audio tracks.

More recently, Pianoforce has introduced the Stealth Performer controller, which allows the controller to be hidden away, out of sight. With WiFi remote control, all of the functionality of the original Performance controller is available, but no hardware is visible on the front of the piano.

The system comes with 2GB of internal memory (expandable to 8GB),

preloaded with approximately 20 hours of piano music.

KEESCAN, an optional recording feature, uses optical sensors to record key and sustain-pedal movements. 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' softwares, Pianoforce is building its own library of CDs.

SilentPlay, Pianoforce's newest feature, combines KEESCAN, the new SP1 sound module, and a special muting rail to permit silent play of the customer's vertical piano, while giving the performer unparalleled digital sound through headphones or speakers. Connection to a computer gives a composer complete control over his or her compositions, from editing individual notes to saving new music for later replay.

Pianoforce has offices in Europe (Pianoforce Europe) and the U.S. (Pianoforce Inc., U.S.A.); branches in Austria, Germany, Portugal, Spain, Switzerland, and the U.K.; and is represented in Australia, China, Hong Kong, and Macao.

ORS PNOmation

QRS Music Technologies, Inc. 269 Quaker Drive Seneca, Pennsylvania 16346 800-247-6557

www.grsmusic.com

PNOmation, and the new PNOmation Studio, are electronic player-piano reproducing systems that can be installed in virtually any piano, grand or vertical, new or used. Most manufacturers endorse the PNOmation system, and will install it, at a dealer's request, at one of their manufacturing or distribution points. Standard installation is also available at a dealer location by a QRS-trained and -certified technician. QRS also installs the system in many major brands of piano at its own U.S. factory. The factory installation conceals unnecessary wires, electronics, and the solenoid rail cover, for a more pleasing appearance, and the operation and feel of the piano's original pedal trapwork are retained.

Traditionally, electronic player pianos have been defined by the type of control box at the front of the piano, or by the controller's capabilities. PNOmation differs in integrating the core features of every controller, including the music, into the PNOmation engine, thereby eliminating confusing options as well as the need to have a box hanging under the piano or on the lyre. Instead of offering a modular approach to the equipment required for various features, PNOmation offers all features standard, and a modular approach to their use. For example, the user can log in to the PNOmation system through any web-enabled device, pull up the system's embedded web-app user interface, and begin to play the piano. For those more comfortable with inserting their music selections into the device, music can be delivered via a USB thumb drive; then you need only push Play on the system's remote control, or the Play button on the unit itself.

When PNOmation is integrated with the PNOscan optical sensor strip—a leading technology for recording performances on an acoustic piano—and a keystop rail to prevent the piano's hammers from striking the strings, the piano becomes a PNOmation Studio. The PNOscan strip doesn't touch the keys-it uses only reflected light to continuously measure key and pedal movements. By integrating PNOscan with PNOmation in a one-time setup operation, one need only play the piano and the piece is recorded—no login, no need to push Record or Stop. Just pull up a bench

and play, and your performance is saved both locally (named according to your preset preferences) and uploaded to your personal QRS PNOcloud account. The file can also be sent to your favorite editing program or e-mailed to a friend-all without boxes or wires. Purchase of PNOscan also entitles the buyer to one year's worth of free piano lessons from the online piano-teaching software Piano Marvel.

Key to PNOmation's flexibility is the fact that it is simultaneously delivered in both a standalone-network mode, with its own network serving its own user interface, and in a network mode in which PNOmation is a client on your home network. One advantage of this arrangement is that if your home network is down, the PNOmation features can still be accessed. Other advantages include ease of setup, network updates, cloud account links, learning, archiving, and video streams.

As a client on a home network. a PNOmation-equipped piano can be controlled by accessing the webapp user interface via iPhone, iPad, iTouch, Android, Mac, Google Chrome browser, Kindle Fire, or any other similar piece of technology, as



The QRS PNOmation web app gives the user full control of all parameters of the system and how music is played.

2RS Music Technologies, Inc.



THE BEST PLAYER SYSTEM IN THE WORLD THE BEST MUSIC, THE BEST TECHNOLOGY, THE BEST ENTERTAINMENT VALUE



- Easier to navigate, log in, play, setup and enjoy.
- Existing player system upgrade kits available even for competitors systems.
- Designed to deliver whisper quiet playback without sacrificing full dynamic playback when you want it.
- Multiple User Interface Options Tablets, Phones, PC's, Android, IOS, Apple Watch, Amazon Echo, IR.
- Custom record, audio playback & playlist setups.
- Bluetooth Audio, Bluetooth MIDI and Wi-Fi make setup and access a breeze.

AN UNRIVALED MUSIC LIBRARY

- Solo & Concert series content delivers impeccable reproduction, dynamics & control.
- Patented QRS SyncAlong where piano plays along with original artists.
- Over 100 years of piano content & production experience.
- Seamless integration and content differentiation within the App.
- Improved music tracking with cloud content sharing and archiving.
- All Access Music Plans or buy by the song, playlist or album.
- Patented PNOscan optical record technology (Optional).
- Add Key-Stop Headphones to practice in silence.



well as via the more unique Apple Watch and Amazon Echo. The web app gives the user full control of all parameters of the system and how music is played, so there is rarely a reason to call in a technician to make adjustments. Some customers are concerned only with whether a song is a solo performance or a performance with background music, which they can determine from the web-app screen. Other customers may want to manipulate a MIDI file to change the tempo or tuning, and some may want to upload a recorded performance to view or change. None of this is possible with an offthe-shelf MP3 playback engine, but all of it is easily done with QRS's PNOmation app. The QRS system also includes integrated Bluetooth MIDI and Bluetooth Audio. This gives you the ability to wirelessly use third-party apps in conjunction with your PNOscan, or third-party speaker systems for playback.

The web app also offers the customer several new ways to control the PNOmation engine, including better-controlled release of the sustain pedal, to give it a soft landing and eliminate the potential thump heard with the release of the damper tray. The same controlled-release technology has also been applied to the keys, improving the PNOmation's already quiet playback while adding much more lifelike fingering. Other features include trill timing compensation, delay compensation, pitch correction, and MIDI-output curve maps. While most customers will use the default settings, those who want to dial in the perfect performance will be able to do so.

QRS has been in the business of player-piano content since 1900, and offers one of the best player-piano libraries on the market, including SyncAlong, which allows the piano to play along with original artist

content. All of the data that control the movements of the piano keys and pedals are in a noncompressed MIDI format (a high-definition MIDI format will soon be released). All music available for PNOmation—soon to number more than 10,000 tracks—can be purchased one song at a time or by the album, or users can purchase an All-Access Plan that provides access to the entire QRS music library and extends the warranty. QRS also offers an upgrade option for legacy QRS products and for competitors' systems that have a MIDI input, giving them many of the advantages of the latest PNOmation system.

STEINWAY SPIRIO

Steinway & Sons One Steinway Place Astoria, New York 11105 718-721-2600

www.steinway.com

In 2016, Steinway officially launched the Spirio electronic player-piano system. Spirio is directly installed in a Steinway piano at the time of manufacture, ensuring no alteration in the exterior appearance of the instrument. Except for the power cord, Spirio requires no visible hardware on the piano. At the present time, Spirio is available on only three Steinway models, all in high-polish polyester finish: model B (available worldwide), model M (available in the U.S. and Canada), and model O (available in select European and Asian markets). The system adds about \$25,000 to the list price of the instrument. At present, a recording option is not available.

This high-resolution system uses proprietary software to measure hammer velocity up to 800 times per second at up to 1,020 dynamic levels, as well as proportional pedaling for the damper and soft pedals at up to 100 times per second

for as many as 256 pedal positions. As a result of this high-resolution sampling, delicate damper and keyshift pedaling, subtle phrasing, and soft trills are reproduced with great accuracy. Steinway says that the system's superior playback is a result of a combination of numerous patented developments, including closed-loop proportional pedaling, immunity to varying line voltages, sophisticated thermal compensation, and proprietary high-resolution drive techniques.

While many older player-piano systems use compressed, low-resolution MIDI data files, Steinway says that the Spirio catalogue is recorded at the highest resolution possible from any system available today. The library contains thousands of tracks-including classical, jazz, and contemporary—all recorded live by accomplished Steinway Artists in Steinway's master recording studio, and new music is continually being added. Playlists, themes, and genres are curated by Steinway & Sons, drawing on the company's extensive musical expertise. In a first for the player-piano industry, Steinway's entire catalog of performances is provided to Spirio owners at no additional charge. Spirio users access the library through the Steinway & Sons App on their iOS device—an iPad is included in the Spirio purchase price.

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 (and now Bösendorfer) pianos that have been outfitted with an electronic playerpiano system. These mechanisms are installed only in new Yamahas and



The control panel of the Disklavier Enspire is nearly invisible from the front of the piano.

the Bösendorfer model 200, and only at the Yamaha and Bösendorfer factories. 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 are what you get (although software upgrades are possible). The sophistication of the key, hammer, and pedal sensing also varies, depending on which Disklavier version is associated with that particular piano model. For a number of years, the E3 has been the standard Disklavier version in the U.S. In 2016, it was replaced by the Enspire. However, many instruments with the E3 system are still on dealers' showroom floors.

The Enspire is available in the larger Yamaha upright models and in nearly all of the grand models, and is offered in three system variations: CL, ST, and PRO. The CL (Classic) is a playback-only system that omits the recording and Silent System functions found in the ST and PRO, and is offered only in the entry-level grand model GB1K, and only in select markets.

ST (Standard) systems are included in upright Disklaviers and in most grands under 6'. These systems have a noncontact optical sensing system featuring continuous grayscale shutters for each key, and window-style shutters on each hammer (grands only). Optical sensors are also used for the damper, soft, and

sostenuto pedals. This sensor system allows users to capture their own performances in standard MIDI format. In addition, a built-in Silent System allows users to silence the acoustic-piano sound and, through headphones, access the instrument's digital sounds, which include binaurally captured samples of a CFX concert grand. A patented DSP servo-drive system monitors and controls key and pedal movements in real time to automatically compensate for environmental changes, or any other movement that doesn't correlate with performance data.

PRO systems, found in all grands over 6', are high-resolution systems that, in addition to the optical sensors mentioned in regard to the ST system. incorporate continuous grayscale shutters on each hammer to measure their speed and position. The additional sensors allow for even greater recording and performance accuracy: 1,024 levels of key and hammer velocity and 256 increments of pedal position. Enspire PRO systems also use an advanced DSP servo-drive system, called AccuPlay, to monitor and adjust performance reproduction.

Unlike the E3 system, the Enspire doesn't have a control-box style user interface, relying instead on a discreet control panel nearly invisible to the user. However, all functions and features can also be accessed and controlled by any compatible HTML5 browser; Yamaha recommends using an Apple iOS or Android device.

Enspire comes with 500 built-in songs, many of them in Yamaha's PianoSoft Audio format, which features stereo audio recordings that play in sync with piano performances. Users also have access to over 6,000 additional titles for purchase through the Yamaha MusicSoft online store, directly accessible through the instrument's user interface.

Yamaha also offers Internet streaming services for the Disklavier Enspire, including Disklavier Radio, which provides over 30 channels of streaming piano music 24 hours a day; and DisklavierTV, a video streaming service that allows users to view live and on-demand musical performances that play in sync with their piano.

Additional Enspire features include:

- An included USB WiFi adapter that permits peer-to-peer connectivity with a mobile device or connectivity to a network via WPS
- Automatic system calibration and troubleshooting
- Digital tone generator with 16 playable voices and 480 ensemble voices (256-note polyphony)
- Direct-to-USB audio recording function
- V-sync technology, which allows users to create video recordings that sync to recorded piano performances
- USB storage connectivity
- MIDI connectivity via standard MIDI ports or USB
- Coaxial digital output

Online readers: For information about the E3 Disklavier, still on dealers' showroom floors, click here.

For simple playback, most playerpiano systems now on the market are probably equally recommended. The Disklavier, however, has a slight



edge in reliability, 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.

America's Favorite Piano

Two examples are especially noteworthy. Yamaha supports the Minnesota International e-Competition, in which contestants gather in several cities and play Disklavier concert grands. Their performances are recorded using Video Sync, 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's latest Disklavier offering is Disklavier TV, which uses RemoteLive technology. Disklavier TV makes it possible for Mark IV, E3, or Enspire Disklavier owners

to receive video, audio, and piano data in perfect sync, so they can receive concerts in their home with their Disklavier playing the piano part in sync with the rest of the concert. During the 2013 NAMM trade show, Yamaha used this technology to hold a major concert in which Elton John was broadcast live, playing Disklavier pianos in many different countries simultaneously, in perfect sync with program audio and video.

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.

ACOUSTIC PIANOS

Brand and Company Profiles

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. The

BALDWIN

For current-model, new pianos: North American Music, Inc. 11 Holt Drive Stony Point, New York 10980 845-429-0106

For parts and warranty information on older pianos:
Baldwin Piano Company
309 Plus Park Boulevard
Nashville, Tennessee 37217
615-871-4500
870-483-6111 (parts)
800-444-2766 (Baldwin 24/7 consumer hotline)
www.baldwinpiano.com

Pianos made by: Baldwin (Zhongshan) Piano and Musical Instrument Co., Ltd., Zhongshan, Guangdong Province, China; Parsons Music Ltd., Yichang, Hubei Province, China

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 vertical pianos for the U.S. market in a factory it owns in Zhongshan, China, where it also maintains a major presence in the Chinese domestic, and other international, piano markets. It also contracts with Parsons Music, a large, well-respected manufacturer associated with a chain of music schools and stores in Hong Kong and China, to have

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.

Note: Electronic player-piano systems are covered in "Buying an Electronic Player-Piano System," elsewhere in this issue.

grand pianos made under the Baldwin name. In 2007, Baldwin purchased a formerly government-owned piano factory in Dongbei, China, and for a while made grand pianos there, but due to a dispute with the Chinese government, production at that factory has been temporarily halted.

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 recently used, 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.

Baldwin has re-created versions of most of its former U.S. vertical models at its facility in Zhongshan. In most instances, both the cabinet styling and the musical scale designs of the former models have been copied. Models B342 and B442 are 43" consoles, in attractive furniture styles similar to those of the former Acrosonic models 2096 and 2090, respectively, but with updated scale designs. Models B243, BP1, and BP3 are similar to the famous Baldwin Hamilton studio, the most popular school piano ever built, with toe-block construction. Model BP5 is a replica of the former Baldwin model 248, and model B252 is a nearly exact replica of the former 52" model 6000 upright, with Accu-just hitch pins, though with a bass sustain instead of a sostenuto pedal.

The Baldwin grands made by Parsons Music have some similarities to the former U.S.-made Artist grands in terms of cabinet styling and material specifications, but the scale designs have been changed. Premium features include a maple rim, sand-cast plate, solid Alaskan Sitka spruce soundboard, duplex scaling, real

ebony-wood sharps, German Röslau music wire, German Abel hammers, and a slow-close fallboard. All grand models are now available in a hand-rubbed, satin ebony finish.

Baldwin has licensed the Magic-Lid (formerly known as Safety-Ease) slow-close grand lid system, which is now standard on the 5' 10" model BP178 and the 6' 3" model BP190.

Baldwin sells an electronic player-piano system called ConcertMaster, available only on Baldwin pianos.

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

BECHSTEIN, C.

including W. Hoffmann

Bechstein USA 301 Upland Road Williamsport, Pennsylvania 17701 570-337-8113

Lori@BechsteinUSA.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.

Bechstein says that all C. Bechstein-branded pianos are manufactured in Seifhennersdorf, Germany, and that W. Hoffmann pianos are made in the Czech Republic. With few exceptions, Bechstein prefers not to divulge

where the components for its instruments are made, a policy that frustrates some industry observers who seek transparency. However, the company says that, whatever the origin, all parts are inspected and made to conform to its rigid standards; in my experience, all models, including the less expensive ones, continue to receive praise for their high quality.

C. Bechstein-branded pianos use Abel or Renner hammers, solid European spruce soundboards, beech or beech and mahogany for grand rims and some structural parts, and maple pinblocks. Three pedals are standard on all pianos, the grands with sostenuto and the verticals with practice pedal (sostenuto optional). Over the past decade, all C. 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 C. 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.

C. Bechstein pianos are available in two levels of quality. The regular verticals and partially redesigned versions of the old grand models now comprise a lower-priced Academy (A) series. They were previously branded Bechstein (B), instead of C. Bechstein, a distinction that has been eliminated. 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), comprise the higher-priced line. The company says that both lines are made in Germany, though for cost-effectiveness some parts and components may originate in the Czech Republic.

The differences between the A series and the regular C Bechsteins appear to be primarily in tonal philosophy and cabinetry. Regular 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 less-expensive, traditional, A-series grands have an untapered soundboard, solid beech bridge with beech cap, maple hammer shanks, expansion-type keybed, and hammers with mahogany moldings and AAA 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 regular, higher-priced models. The keys of the higher-priced line still use leather key bushings, whereas the A-series keys use the more conventional cloth bushings. Bone keytops are an option on the regular models, and genuine ebony sharps are used on both series.

The company uses its own Silver Line action in the A series and, in the regular series, its Gold Line action, which is made to 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 are sourced from several countries, including China. Both actions appear to be well made, and both are of the Renner design, with the smooth, responsive touch characteristic of that design.

The cabinetry of the regular C. Bechstein models is much sleeker and more sophisticated than the plain A series, though both cabinets are finished to the same standard. The regular plates receive the royal hand-rubbed finish; the other plates are just spray-finished in the conventional manner.

When the two lines are compared side by side, there are differences in their finished quality and performance level. Although the A-series pianos are, generally speaking, very good instruments with a slightly warmer default tone quality, the higher-priced models clearly outperform this less expensive line, and are free of the small tonal inconsistencies and minor flaws we have observed in the A series. It's possible that the comparative short-comings of the A-series instruments could be remedied by further technical work, but it's apparent that they are not prepped at the factory to the same standard as the higher-priced pianos.

C. Bechstein grands are impeccably made in Europe and are "orchestrally" voiced, a concept that the company says is related to the change of timbre at different velocities of touch. According to Bechstein, customers who do not explore this feature of tonal design often prematurely assume that the piano is voiced too bright for the American musical taste. (However, several of my colleagues had high praise for the wide dynamic range, tonal color, and responsive action of the 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 significantly altered. Some customers may still prefer the slightly warmer sound of the A-series grands, which are also about half the price of the regular C. Bechstein models.

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 and Japan. Currently it consists of grands and verticals in three series. The Tradition- and Professional-series instruments are entirely made in the Czech Republic. The Professional series has a higher level of design and components, and more customized musical preparation by the company's most experienced craftspeople. The Vision-series pianos are assembled in the Czech Republic, but their strung backs (the instruments' structural and acoustical parts) are imported from China.

Bechstein also sells the Zimmermann brand, designed by Bechstein and manufactured at the Hailun factory, in Ningbo, China. Quality control and technical training are performed there by Bechstein technicians from the factory in Germany. Zimmermann pianos are not currently available in North America.

Bechstein has a silent-piano option, called Vario, that can be built into any of its instruments. This option allows you to mute the acoustic piano and turn on a digitized sound of a C. Bechstein concert grand, which can be listened to through headphones for silent play. Optical key and pedal sensors transmit MIDI information for the control of music software. The Vario system adds about \$6,600 to the price of a vertical piano, and about \$11,500 to the price of a grand.

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

BLÜTHNER

including Haessler. See also Irmler and Rönisch.

Blüthner USA LLC 5660 W. Grand River

Lansing, Michigan 48906

517-886-6000

800-954-3200

info@bluthnerpiano.com

www.bluthnerpiano.com

www.roenisch-pianos.de/en/

In Canada, contact Bluethner Piano Canada Inc.

604-264-1138

rrgarvin@telus.net

www.bluethner.ca

Pianos made by: Julius Blüthner Pianofortefabrik GmbH, Leipzig, Germany

Blüthner has been making pianos of the highest quality in Leipzig, in the eastern part of Germany, since 1853, and though nationalized in 1972, always remained under the management of the Blüthner family. Until 1900, Blüthner was Europe's largest piano factory. During World War II, the factory was bombed, but after the war the

East German government allowed the Blüthner family and workers to rebuild it because the Blüthner piano was considered a national treasure (and because the Soviet Union needed quality pianos). With the liberation of Eastern Europe, Blüthner is again privately owned by the Blüthner family.

Blüthner pianos have beech rims (grands), solid spruce soundboards, Delignit pinblocks, Renner actions, Abel hammers, and polyester finishes. Pianos for export have three pedals, including sostenuto on the grands, and celeste (practice) on the verticals. Blüthner builds about 100 verticals a year in four sizes, and 500 grands a year in six sizes.

In addition to numerous specialized furniture styles and finishes, Blüthner has two recently issued special editions. In honor of the company's 150th anniversary, 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.

In 2016, Blüthner added to its line a hybrid-piano option, known as "e-volution," (see Hybrid Pianos, elsewhere in this issue). This option, which comes with an optical MIDI strip, a digital sound source, and a pianosilencing system, can be added to any Blüthner upright or grand piano model. A piano outfitted with the e-volution system can be played as an acoustic piano, as a digital piano (with the sound of a Blüthner concert grand), or as both at the same time. It can also stream music via Bluetooth from another source through its built-in Bose sound system. The system adds about \$8,000 to the price of a piano.

Blüthner also owns the Irmler brand (see under Irmler), and the Rönisch and Hupfeld brands (see under Rönisch).

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

BÖSENDORFER

Yamaha Corporation of America P.O. Box 6600 Buena Park, California 90622 714-522-9415 info@boesendorferus.com 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 eight models of grand piano, from 5' 1" to the 9' 6" Imperial Concert Grand, one of the world's largest pianos. The 5' 1" grand, new in 2012 and unusually small for a Bösendorfer, has the same keyboard as the 5'8" grand, ensuring a good touch despite the instrument's small size. 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 those of all other grands. Instead of veneers bent around a form, the inner rim is made in solid sections of spruce and beech that are joined together. The

outer rim has a solid core of quartersawn spruce that is grooved by Bösendorfer craftsmen so that it can be bent around the inner rim; after bending, the grooved sections are filled with spruce inserts. Because spruce is better at transmitting than reflecting sound, the extensive use of spruce in the rim has the effect of making the rim an acoustical extension of the soundboard, causing the entire body of the piano to resonate. 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. The relatively newer 6' 1", 7', and 9' 2" models have been designed specifically to appeal to pianists looking for a more familiar sound. The last two models, now called the Vienna Concert (VC) series, have redesigned scaling and soundboard for greater sound projection, improved sustain, and a wider range of tonal color and dynamics. In all models, however, the distinctive Bösendorfer sound 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 (it can be special-ordered in any standard Porsche finish color); the Liszt, Vienna, and Chopin models of Victorian-styled pianos; and limited-edition models, such as the Liszt Anniversary, Beethoven, Mozart, Hummingbird, and Schönbrunn. 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, no longer advertised in the U.S. but available by special order. The Bösendorfer model 200 is optionally available with a Yamaha Disklavier Enspire 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

Steinway & Sons
One Steinway Place
Astoria, New York 11105
718-721-2600
boston@steinway.com
www.steinway.com/boston

Pianos made by: Kawai Musical Instrument Mfg. Co., Ltd.,

Hamamatsu, Japan and Karawan, Indonesia

In 1992 Steinway launched its Boston line of pianos, designed by Steinway & Sons and built by Kawai. Steinway's stated purpose in creating this line was to supply Steinway dealers with a quality, mid-priced piano containing some Steinway-like design features for those customers "who were not yet ready for a Steinway." In choosing to have a piano of its own design made in Japan, Steinway sought to take advantage of the efficient high-technology manufacturing methods of the Japanese while utilizing its own design skills to make a more musical piano than is usually available from that part of the world.

In 2009, Steinway launched the Performance Edition of the Boston piano with enhancements to the instruments' design and specifications, including a grand inner rim of maple for increased structural integrity and improved tone, the patented Octagrip® pinblock for smoother tuning and more consistent torque, and improvements to hardware and keytop material, among other things. Performance Edition models have model numbers ending in PE. In 2016, the company introduced Performance Edition II grands (PE-II), containing further improvements, including bubinga veneer on the inside rim of all ebony grands, improved finishes, a new plate color, and other cosmetic changes; and a lower-tension scale, resulting in a very clear bass, better treble sustain, and more transparency in the tenor range.

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, solid-spruce 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

Piano Marketing Group, Inc. 1447 Montgomery Street Tustin, California 92782 949-600-1476 657-266-0351 (fax) peterh@BrodmannPianoUSA.com www.BrodmannPianoUSA.com

Pianos made by: Parsons Music, Hong Kong/China

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.

The modern-day Brodmann company was founded in 2004 by two former Bösendorfer executives. Brodmann, they say, was originally planned as a possible second line for Bösendorfer, but when that company abandoned the idea, the two executives pursued it on their own. In 2014, the Vienna-based Brodmann company filed for bankruptcy protection in Austria. However, manufacture and distribution of the Brodmann line continue unchanged. U.S. distribution rights to the Brodmann line are owned by Piano Marketing Group; for all other parts of the world, the factory sells directly through its own distributor network.

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, all manufactured, in whole or in part, in China by Parsons Music. The Professional Edition (PE) pianos, made entirely in China, are designed in Vienna and use European components such as Strunz soundboards, Abel hammers, Röslau strings, and Langer-designed (Chinese) actions (Renner in the model 228 grand). Several vertical models use carbon-fiber action parts, for greater uniformity and dimensional stability, and all grand models are now available with optional carbon-fiber actions. For quality control, Brodmann has its own employees from Europe working 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 priceconscious buyer, is also made entirely in China, from parts sourced globally, and receives Brodmann quality control.

The Artist Series (AS) models, introduced in 2011 and available only in the larger grand sizes (including a

concert grand) and the largest upright size, are based on German scale designs. They are partially made in China, then shipped to the Wilh. Steinberg factory (also owned by Parsons Music), in Eisenberg, Germany, where the Röslau strings and Renner actions are installed, and all musical finishing work is performed by German artisans. 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 Renner hammers.

Brodmann has discontinued its entry-level piano line, Taylor London.

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

BUSH & GERTS

Shanghai Bu Ge Musical Instrument Co. Ltd. 215 Union North Road, Fengxian District Shanghai, China 201400 +86-400-1556765 bushgerts@outlook.com sales.kf@bushgerts.com en.bushgerts.com

U.S. office: Bush & Gerts Piano Co. Ltd., 1 Radisson Plaza, Suite 800, New Rochelle, New York 10801

Contact: Gill

This company is seeking U.S. distribution.

The original Bush & Gerts Piano Company was founded in 1884 by Chicago businessman William H. Bush; his son William L. Bush, who had trained in organ and piano making; and John Gerts, a master piano builder from Germany. In addition to its high-quality pianos, Bush & Gerts was best known for the establishment of the Bush Temple of Music, a Chicago landmark that, for a time, served as the company's headquarters and housed its music conservatory. William L. Bush was also known for his tireless campaigning against the "stencil piano"—a piano bearing a name other than that of its maker—a fraudulent and confusing practice common in the piano industry of early 20th century America.

In 1924, Bush & Gerts was acquired by the Haddorff Piano Company, of Rockford, Illinois, which from then on manufactured Bush & Gerts instruments. Haddorff was acquired by Conn in 1940, and production of Bush & Gerts pianos effectively ceased about 1942, when most piano production nationwide was commandeered by the U.S. government for the war effort.

Since 2015, Bush & Gerts pianos have been made in Shanghai, China, for the Asian market. The models available for export to the U.S. are the White House and Chicago collections, which commemorate the company's early days and comprise five sizes of vertical piano from 47" to 50", and two sizes of grand, 5' 7" and 6' 1". Components are sourced from the German companies Abel (hammers), Röslau (strings), and Strunz (soundboard), among others.

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

Chernobieff

Chernobieff Pianos & Harpsichords Lenoir City, Tennessee 865-986-7720 chrisppff@gmail.com www.chernobieffpiano.com

Reminiscent of some piano designs attempted 200 years ago, Chernobieff's 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.

CLINE — See Hailun.

CRISTOFORI

including Paul A. Schmitt.

Jordan Kitt's Music 11726 Parklawn Drive Rockville, Maryland 20852 Schmitt Music 2400 Freeway Blvd. Brooklyn Center, Minnesota 55430

301-770-9081 763-566-4560 x5086 (Chris Syllaba) (Tom Wennblom) info@cristoforipianos.com www.cristoforipianos.com

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

Originally issued under the name Opus II, the Cristofori and Paul A. Schmitt 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. About 15 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, Paul A. Schmitt in Schmitt Music stores. Bartolomeo Cristofori (1655–1731) was, of course, the inventor of the piano.

The Cristofori and Paul A. Schmitt lines are manufactured by China's largest piano manufacturer, Guangzhou Pearl River Piano Group. The uprights come in numerous sizes, styles, and finishes, including a 43" decorator console in a French cherry cabinet, 45" and 46½" studios, and a 48" upright. The 48" professional upright, appropriate for home or institutional use, has front legs with toe blocks for strength, a large soundboard and long strings for bigger sound, and—new in 2012—a slow-close fallboard. 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 Paul A. Schmitt pianos are differentiated from Pearl River's own line of pianos by upgraded specifications such as the use of highest-quality German Röslau strings; 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 Paul A. Schmitt 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.

CUNNINGHAM

Cunningham Piano Company 5427 Germantown Avenue Philadelphia, Pennsylvania 19144 800-394-1117 215-438-3200

www.cunninghampiano.com

Pianos made by: Ningbo Hailun Musical Instruments Co. Ltd., Ningbo, Zhejiang Province, China; with Cunningham Piano Company, Philadelphia, Pennsylvania

Cunningham Piano Company began manufacturing pianos in 1891 and, in its time, was the largest piano maker in Philadelphia. The original Cunningham factory ceased production in December 1943. The company was reopened in December 1945 as a piano rebuilder and retailer. Today, Cunningham specializes in the restoration of high-quality American and European pianos, and produces the new Matchless Cunningham.

Designed by Frank Emerson, the Matchless Cunningham is based on the original Cunningham scale designs. "Matchless" is used in reference to an offer made by Patrick Cunningham over a century ago: that he would pay \$10,000 to anyone who could build a better piano. Because no one ever took him up on his offer, Cunningham labeled his piano the Matchless. Today, Matchless also refers to a unique combination of high-quality parts and a successful American scale design, assembled in China at the world-class Hailun factory, and with quality control overseen by Cunningham in Philadelphia. The line consists of grands from 5' to 9' and two verticals, 44" and 50".

Cunningham grands have maple rims (arguably necessary for best sound), custom-designed German Abel Hammers, German music wire, agraffes, duplex scaling, and slow-close mechanisms on both the fallboard and lid. Cunningham regularly sends technical staff to the Ningbo Hailun factory to oversee production, and each piano undergoes a thorough final preparation by Cunningham in Philadelphia.

The special Heritage Series incorporates art cases that reflect late Victorian styling. Handcrafted cabinet parts are made and installed in Cunningham's Philadelphia facility, making each instrument unique. Customers have the option of customizing certain aspects of the cabinetry based on their personal preferences.

Warranty: 10 years, parts and labor.

EISENBERG — See **Steinberg**, Wilh.

ESSEX

Steinway & Sons
One Steinway Place
Astoria, New York 11105
718-721-2600
essex@steinway.com
www.steinway.com/essex

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 seven different and striking cabinets designed by Steinway & Sons and renowned furniture designer William Faber. Styles include: Classic, Queen Anne, Formal French, English Country, and Contemporary. These models incorporate various leg designs (including cabriole leg, spoon leg, and canopystyled 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 three finishes, two with chrome hardware, along with Empire and French styles; a school model, the EUP-123S, is offered in ebony polish only.

The Essex grands are available in 5'1" (EGP-155) Classic and French Provincial styles and 5'8" (EGP-173) Classic style. They come in a variety of regular and exotic veneers in high polish polyester and satin luster (semigloss) finishes.

Like Steinway's Boston pianos, the Essex line was designed with a lower tension scale and incorporates many Steinway-designed refinements. Included in these are a wide tail design that allows the bridges to be positioned closer to the more lively, central part of the soundboard, smoothing out the break between bass and treble. This and a thinner, tapered solid-spruce 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: 10 years, parts and labor, to original purchaser.

ESTONIA

Laul Estonia Piano Factory Ltd.
7 Fillmore Drive
Stony Point, New York 10980
845-947-7763
laulestoniapiano@aol.com
www.estoniapiano.com

Pianos made by: Estonia Klaverivabrik AS, Tallinn, Estonia

Estonia is a small republic in northern Europe on the Baltic Sea, near Scandinavia. For centuries it was under Danish, Swedish, German, or Russian domination, and finally gained its independence in 1918, only to lose it again to the Soviet Union in 1940. Estonia became free again in 1991 with the collapse of the Soviet Union.

Piano-making in Estonia goes back over 200 years under German influence, and from 1850 to 1940 there were nearly 20 piano manufacturers operating in the country. The most famous of these was Ernst Hiis-Ihse, who studied piano making in the Steinway Hamburg and Blüthner factories and established his own company in 1893. His piano designs gained international recognition. In 1950 the Communist-dominated Estonian government consolidated many smaller Estonian piano makers into a factory managed by Hiis, making pianos under the Estonia name for the first time. The instruments became prominent on concert stages throughout Eastern Europe and, amazingly, more than 7,400 concert grands were made. However, after Hiis's death, in 1964, the quality of the pianos gradually declined, partly due to the fact that high-quality parts and materials were hard to come by during the Communist occupation of the country. After Estonia regained its independence in 1991, the factory struggled to maintain production. In 1994 Estonia pianos were introduced to the U.S. market.

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; and in 2015, the President of Estonia awarded Laul the Presidential Medal, in recognition of the contribution Estonia pianos have made to awareness of that country. Estonia makes 200 to 300 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 sound-boards. They come in 5' 6", 6' 3", 6' 10" (new in 2013), 7' 4" (introduced in 2011), and 9' sizes. All have three pedals, including sostenuto, and come with a slow-close fall-board 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 in the decade that followed, Dr. Laul introduced so many improvements to the piano that it became practically a different, much higher-level instrument. In 2010, Estonia began investing in designing new models, and the knowledge gained from designing the 6' 10" model L210, introduced in 2013, was used the following year to implement changes to most of the other models. These modifications included a complete sound-board redesign, new support beams of resonant spruce with improved doweled connection to the rim, and new specifications for hammer density. The model L190 also has a new, focused beam structure.

The Estonia factory makes a custom line of piano, offering exotic veneers such as rosewood, bubinga, pyramid mahogany, and Makassar ebony, and is willing to finish instruments to fit the desires of individual customers.

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, independent of the company, frequently hold musical get-togethers at different locations around the country.

The pianos have a rich, warm, singing tone and a wide dynamic range; 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.

FANDRICH & SONS

Fandrich & Sons Pianos
7411 Silvana Terrace Road
Stanwood, Washington 98292
360-652-8980
877-737-1422
fandrich@fandrich.com
www.fandrich.com
Pianos made by: Pearl River

In the late 1980s, Darrell Fandrich, RPT, an engineer, pianist, and piano technician, developed a vertical piano action designed to play like a grand, for which 10 patents were issued. In July 2013, a new patent application was filed in the U.S. (along with an application for future international patents) on an improved version of the action. The improvement features use of a grand-piano knuckle, and results in improved touch and repetition, and the feel of aftertouch at the bottom of the keystroke.

You can see an illustration of the original Fandrich 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 Fandrich & Sons website. Since 1994, Fandrich and his wife, Heather, have been installing Renner-made Fandrich actions in selected new pianos, selling them under the Fandrich & Sons label. They also sell some grands (with regular grand actions) under that name.

Over the years, the Fandrichs have installed their actions in over 300 instruments, including ones from Bohemia, Feurich, Klima, Pearl River, Wilh. Steinberg, and Steingraeber. At present, the action is being installed in 52" Pearl River uprights featuring Lothar Thomma scale designs (under the Fandrich & Sons label), and, by special order, in 51" Steingraeber uprights (under the Steingraeber & Söhne label). The converted pianos are available directly from the Fandrichs, as well as from their Canadian representative, in Montreal (contact the Fandrichs for information).

Playing a piano outfitted with a Fandrich Vertical Action is a very interesting experience. The action easily outperforms that of most other vertical pianos on the market, and some grands as well. The Fandrichs have now had 25 years of experience in refining and servicing the action, and reports suggest that customers are very satisfied with them.

Fandrich & Sons grand pianos are manufactured in China by the Pearl River Piano Group. These pianos feature Lothar Thomma scale designs, and are remanufactured at the Fandrich & Sons facility in Stanwood, Washington. The company offers three sizes of grand piano—models 170 (5' 7"), 188 (6' 2"), and 212 (7')—in two configurations: Standard (S) and Enhanced (E), the latter with Heller bass strings from Germany and/ or Abel hammers, depending on customer preference. The tone of the S model is said to be powerful, dark, and sonorous; the E model, in contrast, is more brilliant and transparent. All models feature precision touchweighting using the Fandrich-Rhodes WeightbenchTM system, which enables precise control of action inertia as well as traditional up- and downweight; redesigned pedal-lyre and trapwork systems; and a very extensive high-end preparation.

For those who wish a better musical experience at a lower cost, the Fandrichs also sell two vertical piano models with traditional actions that also receive the same high-end musical preparation as the more expensive models. The 46" model 118S and the 48" model 122 are designed by Lothar Thomma and built by Pearl River. All Fandrich & Sons pianos come with a matching bench.

The Fandrichs are passionate about their craft and choose the brands they work with carefully for musical potential. In addition to making standard modifications and refinements to remedy perceived shortcomings in the original Chinese-made instruments, the Fandrichs are inveterate tinkerers always searching for ways to make additional improvements, however subtle. As a result, many who play the pianos find them to be considerably more musical than their price and origin would suggest.

Warranty: 12 years, parts and labor, to original purchaser. *Note*: Do not confuse the Fandrich & Sons pianos with the 48" Fandrich upright that was once manufactured with a Fandrich Vertical Action by Darrell Fandrich's brother, Delwin Fandrich. That piano has not been made since 1994.

FAZIOLI

Fazioli Pianoforti S.p.A. 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 pianoproduction facility, and in 2005 opened an adjoining 198seat 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 these activities in the concert hall, the new factory also contains a department for ongoing research in piano design in cooperation with a number of educational institutions.

Fazioli builds only grands, about 150 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, and seven-ply maple pinblocks from Bolduc, in Canada. The pianos have Renner actions and hammers and Kluge keyboards. 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. A newly patented action rail structure is more resistant to moisture, and provides a more uniform touch across the keyboard. Also newly patented are double- and triple-layer, moisture-resistant soundboards, available by special order for pianos that will be used in extreme climates.

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.

Many artists, and others most familiar with Fazioli pianos, describe them as sources of inspiration with a wide color palette and dynamic range, and 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.

Each Fazioli piano is built saving one ton of carbon dioxide, thanks to the use of electricity produced by a new photovoltaic system installed on the roof of the Fazioli factory.

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

FEURICH

Feurich Pianoforte Wendl & Lung Kaiserstrasse 10/2 Vienna 1070 Austria

office@feurich.com 773-673-5564 (U.S.) www.feurich.com +43-1-523-3788 (Austria)

Pianos made by: Ningbo Hailun Musical Instruments Co. Ltd., Ningbo, Zhejiang Province, China

This German piano manufacturer was founded by Julius Feurich in 1851, in Leipzig. At its height in the early 20th century, the company employed 360 people, annually producing 1,200 upright and 600 grand pianos. Feurich was the first German manufacturer to produce an upright with an under-damper system, and was also a member of the so-called Group of Five—the leading German manufacturers who joined forces to provide selected renowned pianists with concert instruments worldwide. 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 the fifth-generation Julius Feurich, the family-owned company once again began producing its own pianos.

In 2011, Feurich was acquired by Wendl & Lung, headquartered in Vienna, Austria, which distributed a line of pianos under that name made to their specifications by Hailun, in China. The Wendl & Lung pianos went through further development, and additional models were added to the line, before being rebranded as Feurich. Julius Feurich was granted a license to make a line of Feurich-branded pianos in Gunzenhausen, but soon thereafter terminated that license agreement, choosing instead to manufacture pianos independently under another name in a venture that did not last long. Under the name Feurich Pianoforte, Wendl & Lung continues to make and distribute Feurich pianos, working on the design of its instruments with original Feurich designers such as Friedrich Steinbauer, as well as with other renowned European piano designers such as Jan Enzenauer, Rolf Ibach, and Stephen Paulello.

There are currently two lines of Feurich instruments on the market. Utilizing a separate production line within the Hailun factory in Ningbo, China, Feurich produces a line of high-quality, affordable uprights and grands distinguished by their strict quality control, the use of European tonewoods, and modern innovations, such as Paulello rust-free music wire. Feurich experts are present in the factory at all times, in order to perform a full quality-control inspection before shipping. In 2015, a new Feurich-designed action and keyboard was introduced for all Feurich uprights. New improvements and design modifications were made on all the instruments; for example, the new Feurich model 179 Dynamic II has a lighter frame and various other modern features, such as an integrated LED lamp.

The second line is made in Vienna, Austria. The first model in this line is the 48" model 123 Vienna upright, designed by the Feurich Vienna team of experts managed by master piano builder Emil Dimitrov and including Stephen Paulello and Clare Pichet. The strung back for this model is made in China by Hailun, but with a new design, more advanced CNC milling, and with Paulello rust-free strings. All other parts are European. The level of detail in the design can be seen in features such as the compensation in the action for the different proportions and leverages required for black and white keys, owing to their different lengths. The Feurich High-Speed KAMM Action, designed by master piano builder Udo Kamm, also features a new, patented system of springs and rollers that enable extremely fast repetition for an upright piano. The pianos are meticulously regulated and voiced in Vienna. The 50" model 128 Vienna, due to enter production in 2017, was designed by Friedrich Steinbauer (original designer from the Feurich factory in Germany) and Jan Enzenauer, and is based on original Feurich designs.

Feurich offers an optional fourth pedal on their grand pianos. The Harmonic Pedal is essentially the inverse of a sostenuto: instead of holding up the dampers of notes struck prior to depressing the pedal, it holds up all *but* those notes. This allows the player to create sympathetic resonance between strings, even while playing staccato.

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

FÖRSTER, AUGUST

August Förster GmbH Jahnstrasse 8 02708 Löbau Germany +49-3585-86630

www.august-foerster.de

www.facebook.com/august.foerster

The August Förster factory was founded by Friedrich August Förster in 1859 in Löbau, Germany, after Förster studied the art of piano building. During the years of control by the government of East Germany, the factory was managed by the fourth-generation piano builder, Wolfgang Förster. After the reunification of Germany and privatization, Wolfgang and his family once again owned their company. August Förster GmbH is now managed in the fifth generation by Wolfgang's daughter, Annekatrin Förster.

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 three sizes. The pianos are very well built structurally, and the cabinets are elegant. Rims and pinblocks are of beech, soundboards of solid mountaingrown spruce, and bridges are of hardrock maple (without graphite). Each string is individually terminated (singlestrung). 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. The new 53" model 134K anniversary upright, intended for pianists who don't have space for a grand, has such grand-pianolike features as a full sostenuto; a large, adjustable music desk; and black keys of real ebony.

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

FRIDOLIN— See Schimmel.

GEYER, A.

Piano Marketing Group, LLC 3227 Natoma Way Orlando, Florida 32825 954-559-9553 s.shebeck@yahoo.com

www.geyer-pianos.com

Company Headquarters: Steffes & Schulz GmbH Mühlgasse 11-13, D-65183 Wiesbaden, Germany Phone: +49-611-992240

colintaylor@btconnect.com

Pianos made by: A piano factory in Zhejiang Province, China

The A. Geyer brand and factory were established by the Geyer family in 1877, in Eisenberg, Thuringia, Germany, and the brand was well known in the late 19th and early 20th centuries, when Eisenberg was a significant center for piano building. Also produced in the Geyer factory over the years were the brands of Fuchs & Mohr, Sassmann, Steinberg, and Weisbrod. In time, the Geyer factory became the Wilh. Steinberg factory, which continues to produce pianos today.

Today, A. Geyer is a new company, with headquarters in Wiesbaden, Germany. The company's founders are Christoph Schulz, a fifth-generation German piano maker; Frederik Steffes, the former owner of the Wilh. Steinberg factory; and Colin Taylor, formerly with Bösendorfer and Brodmann. Although the company is new, the three founders bring to it decades of combined experience in piano manufacturing, and a vision, they say, to create a piano wonderful in sound, touch, and style, with outstanding value for the money.

Although the pianos are designed in Germany, A. Geyer production is located near Hangzhou, in Zhejiang Province, China, a region just outside of Shanghai that has become a center of piano manufacturing. The company founders believe that their knowledge and experience of traditional German methods of piano making, combined with local Chinese resources, can result in a better piano at lower cost.

Currently, A. Geyer makes three upright pianos and five grands. All pianos use carefully selected Chinese parts that are subject to strict quality controls. German Wurzen felt is used for the upright hammers, and Abel hammers for

the grands. All pianos have a solid-spruce-core veneered soundboard and Japanese Suzuki strings. The actions and keyboards have been designed by the company's German master piano builder. All pianos are inspected by the company's technicians before leaving the factory.

Warranty: 10 years, parts and labor, on main structural elements; 5 years, parts and labor, on other manufactured items.

GROTRIAN

including Wilhelm Grotrian

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Sales agent for U.S. and Canada:

Parsons USA

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Pianos made by: Grotrian Piano Company GmbH, Braunschweig, Germany; and Parsons Music, Hong Kong

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.

In 2015, a majority interest in the Grotrian Piano Co. was purchased by Parsons Music Group, a Hong Kongbased piano manufacturer. Grotrian says that all pianos bearing its name will continue to be made in Braunschweig, Germany, and that the Parsons investment will be used to expand manufacturing capacity to better serve the burgeoning Asian piano market. A member of the sixth generation of the Grotrian family is a shareholder, and will continue to participate in managing the company.

Grotrian grands have beech rims, solid spruce sound-boards, 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. The cast-iron plate is attached with screws along the outer edges of the rim, instead of on the 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 to ensure the instrument's structural and tonal stability over time.

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 European royal families have appointed Grotrian to supply pianos to the court, and many well-known pianists have endorsed or expressed appreciation for Grotrian pianos.

Grotrian makes five sizes of grand and six sizes of vertical piano. New "studio" versions of grand models 192 (6' 3") and 208 (6' 10"), made for institutions, have scratch-resistant cabinet finishes, wider music desks, and more impervious soundboard finishes. At the Braunschweig factory, Grotrian also makes a lower-cost line 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.

In 2018, Grotrian introduced two lines that are even more affordable: Wilhelm Grotrian and Wilhelm Grotrian Studio. These instruments combine German Grotrian designs with "global sourcing and global manufacturing," including soundboards of lightweight Alaskan spruce. The two new lines have the same tone color, touch, and performance; the only difference between them is that the Wilhelm Grotrian Studio models come in simpler cabinet designs for the more price-conscious buyer.

The Wilhelm Grotrian line comprises four sizes of vertical piano—46", 48", 49", 52"—and three sizes of grand: 5' 7", 6' 2", and 6' 11". The Wilhelm Grotrian Studio line consists of three sizes of vertical—45½", 47", 48"—and two sizes of grand: 5' and 5' 5".

Warranty: 5 years, parts and labor, transferable to future owners.

HAESSLER — See Blüthner.

HAILUN

including Cline and Emerson

Hailun America P.O. Box 1130 Richland, Washington 99352 509-946-8078 877-946-8078

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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 Feurich brand (formerly Wendl & Lung—see Feurich). Hailun also makes pianos or components under contract for several other manufacturers and distributors. Hailun recently conducted an Initial Public Offering of stock on the Shenzen Stock Exchange.

Currently, the Hailun line consists of four vertical sizes (mostly larger uprights) and five grand sizes. In 2010, the company introduced the 52" model HU7-P, with a duplex scale, agraffes, and a steel capo bar for, the company says, a "lush and powerful sound in the American tradition." This model also has a middle pedal that operates a true sostenuto mechanism.

(Note: Model designations on the cast-iron plates of some Hailun pianos may differ from those in Hailun marketing materials and in this publication because the models may have different names in the Chinese and U.S. markets. In each such case, the scale designs are the same, but, according to Hailun, the U.S. models contain the higher-quality parts and materials advertised in U.S. marketing materials and on the Hailun America web page.)

Hailun America is in the process of introducing several new grand and vertical models under the Emerson brand name (formerly the Hailun Vienna Series). The W.P. Emerson Co. was founded in 1849 by William P. Emerson, later changing its name to the Emerson Piano Co. Located in Boston, the company became a meeting

place of old-world artisans and new-world technology, and grew into one of the largest and most reputable piano manufacturers of its time, selling its pianos throughout the world. The distributor of today's Emerson piano says that it seeks to continue the tradition of bringing together the new and old worlds, combining European, American, and Asian resources to address the need for an exacting, quality instrument that "reflects the Western tradition of piano building" at a more favorable price, and to "create a warm tonal experience in the tradition of the Viennese sound."

Emerson pianos are designed by an international team of piano designers close to the Hailun factory, and are manufactured by Hailun. The wood for its sound-boards is sourced from the North Austrian Alps. The grands are designed with a wide tail, vertically laminated maple bridges, a slightly firmer touch, and faster action speed. The vertical has a patented TriGon duplex scale, agraffes, a full-perimeter plate, and an enhanced soundboard design. Each purchaser of an Emerson 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.

In 2011, Hailun introduced 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. A version of HLPS, called HLPS Plus, and available only in the Vienna models, allows the user to adjust a grand piano lid to any position without the need for a lid propstick. Apart from the safety benefit, HLPS Plus allows the user to modulate sound projection by adjusting the lid position.

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, Fall 2010, and Fall 2011 issues) 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, Sibin 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 90 days of purchase, the company will exchange the piano for another of the same model. Under the company's Gold Service Program, Hailun dealers are obligated to provide each customer with one free service call between 60 and 180 days after purchase of a piano.

Hailun America is reintroducing the Cline brand to the U.S. market in the form of entry-level models made by Hailun. Chester L. Cline began selling pianos in Tacoma, Washington, in the 1880s, and produced pianos under his own name beginning in 1889. He eventually expanded his retail chain throughout the Northwest and, in the 1920s, into California, becoming one of the largest piano dealers in the West. In the 1980s and '90s, pianos

bearing the Cline name were made by several manufacturers of entry-level pianos.

Today, Cline makes 46½" and 48" verticals and a 4' 11" grand. The grand comes with the HLPS lid-support system. Both the 48" vertical and the grand are optionally available with the MG Silent System, which can turn the acoustic piano into a digital one that can be played with headphones at any time of day or night. It also features a metronome, and allows performances to be recorded and exported in MIDI format to share with others. (See the chapter on Hybrid Pianos for more information about silent systems.) Owners of Cline pianos in North America are entitled to receive a trade-in credit of the full amount paid for the instrument toward the purchase of a new grand made by Hailun, Emerson, Petrof, or Sauter (all of whom share a common distributor).

Warranty: Hailun—15 years, parts and labor, to the original owner, transferable to the second owner within the warranty period. Cline—10 years, parts and labor, to original purchaser. Emerson—5 years, parts and labor, to original purchaser. Electronics—1 year, parts and labor, to original purchaser. See also the Dream Assurance Program, described above.

HALLET, DAVIS & CO.

Hallet Davis Pianos 11 Holt Drive Stony Point, New York 10980 845-429-0106 usapianos@yahoo.com www.halletdavispianos.com

Pianos made by: various makers (see text)

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. Subsequently, North American Music began producing Hallet, Davis, & Co. pianos, first in Korea, and now in China.

The Heritage and Signature Collections are made by the Beijing Hsinghai Piano Group, Ltd., and by the Silbermann Piano Co. The upper-level pianos, known as the Imperial Collection II, are manufactured by Parsons Music, a factory associated with a large chain of music stores in China and Hong Kong, and the thirdlargest producer of pianos in China.

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. 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

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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, but when the Chinese government began allowing foreign ownership of manufacturing concerns, the Canadian partner bought back majority ownership and took control.

The new company, known as Heintzman Piano Company, Ltd., is Canadian owned and managed and has a private, independent factory dedicated to producing Heintzman-brand pianos. Heintzman makes pianos to the original Canadian Heintzman designs and scales using some of the equipment from Canada. James Moffat, plant manager of the Canadian Heintzman factory for 40 years, has been retained as a consultant and visits the factory in China several times a year. The company even uses some components from Canada, such as Bolduc soundboards, in grands and larger verticals. The factory makes about 5,000 pianos per year.

The smallest vertical made under the Heintzman name is 43½" tall, but pianos for export to North America typically start at 48" 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 or Abel Blue hammers, and the largest two sizes have Canadian Bolduc soundboards of solid Eastern white spruce. All verticals 50" and taller 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', 5' 6", 6' 1", 6' 8", and 9' long—also use German pinblocks and strings, Mapes bass strings, Renner Blue or Abel Blue hammers, and Canadian Bolduc or German Strunz soundboards of solid spruce.. 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.

New in 2013, and aimed at a slightly more upscale audience, is the Royal series of verticals and grands, with two-tone cabinet trim and inlays on the inside of the lid, as well as a Bolduc or Strunz soundboard, Abel or Renner Blue hammers, and Mapes bass strings.

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.

HESSEN, J.F.

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In Canada, contact: Wayne Chen, sales@pianokeyboard.com

Pianos made by: Artfield Julius Feurich Piano Co., Shanghai, China, and Altenstadt, Hesse, Germany

In 2002, the Chinese piano manufacturer Artfield purchased a majority interest in Feurich from its owner, Julius Feurich, whose company had been making pianos in Germany since 1851. Artfield made exact copies of all the Feurich equipment and scale designs, and has since been manufacturing and distributing pianos in China under the Julius Feurich name. In 2008, Artfield transferred the Feurich company back to Julius Feurich in exchange for additional production equipment, but retained the right to use the Julius Feurich name in China. In 2011, Julius Feurich sold the remaining rights to the commercial use of his name to another party, and attempted to establish a new piano-building firm under a different name in Gunzenhausen, Germany, but that business failed. (See under Feurich for more information.) Now Artfield has hired Stephan Kühnlein, a production manager in Julius Feurich's former company, and other former Feurich employees, to complete the manufacture of pianos in Altenstadt, Germany, to the original Feurich designs. These pianos are to be called "J.F. Hessen," the "J.F." referring to Julius Feurich, and "Hessen" referring to the German state, Hesse, in which Altenstadt is located. Julius Feurich is not involved with the company.

Most of the assembly of J.F. Hessen pianos is performed in China by Artfield, and the pianos are similar to those Artfield makes under the Julius Feurich name. For the J.F. Hessen pianos, however, the nearly completed instruments are shipped to Germany, where the hammers are installed and all musical finishing work, such as tuning, voicing, and action regulating, is performed to German standards. The pianos contain the usual high-quality components often found in German pianos: Renner actions (standard in grands, optional in verticals), Renner or Abel hammers, Strunz Bavarian spruce soundboards, Röslau strings, and sharps of real ebony wood. Due to the amount of German materials and labor in the final product, the pianos qualify for "made in Germany" status under German law. At present, three vertical models (47", 48", and 52") and one grand model (5' 8") are available.

Warranty: Ten years, parts and labor, transferable between individuals with notification to dealer within the warranty period.

HOFFMANN, W. — See Bechstein, C.

HUPFELD — See Rönisch.

IRMLER

including Schiller

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www.bluethner.ca

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

Irmler is a sister company of Blüthner, and Irmler 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 Irmler. 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 sound-boards. 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 Irmler 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 Irmler Studio series is also available from some dealers under the Schiller brand name, with a slightly modified cabinet; prices are comparable to those for Irmler.

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

KAWAI

including Shigeru Kawai

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310-223-0900 (Shigeru Kawai)

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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.

Kawai's K series of upright models has been updated in 2014, and the model names have been changed. The former K-2, K-3, K-5, K-6, and K-8, all sold in North America, have become the new K-200 (45"), K-300 (48"), K-400 (48"), K-500 (51"), and K-800 (53"). The K-400 is internally the same as the K-300, but its cabinet includes a grand-piano–style music desk (formerly available only with the K-8) and a folding, low-profile fallboard. The K-500—at 51", two inches taller than the old K-5—has been extensively redesigned internally, with longer bass strings, a larger soundboard, and a redesigned cast-iron plate. Several of the new K-series models are available in the Any-Time (ATX) series as silent/hybrid pianos. See the article on **Hybrid Pianos** for details.

As before, all K-series models include Kawai's Millennium III actions, made with carbon-fiber composites. The hammers in all models are now made with underfelt and mahogany moldings, which Kawai says improves the responsiveness of the action and the tonal sustain. All models have redesigned, tapered soundboards for improved tonal response; double-braced and steel-reinforced keybeds to prevent warping and flex; and come with slow-close fallboards and adjustable benches. The K-500 and K-800 both feature Kawai's Neotex ivory-substitute key material, and the K-800 comes with a sostenuto pedal. The K-series cabinets have been redesigned for a sleeker, more modern appearance.

Kawai makes two series of grand pianos: GX and GL. The GX line (formerly RX; see below), which is sold in North America in a version known as the BLAK series, is the most expensive and has the best features. It is designed for the best performance, whereas the GL series is designed more for efficiency in manufacturing, with fewer refinements. All the GX pianos feature a radial beam structure, converging together 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 soundboards in the GX models are tapered for better tonal response; and the rims are thicker and stronger than in the GL models, and are made of a blend of open- and closed-pore hardwoods to improve the tone. The Kawai Millennium III actions used in both series now have hammershank stabilizers, designed to retain power by keeping the shank from wavering under a heavy blow. All GX pianos have agraffes, duplex scaling, lighter hammers (less inertia), and Neotex synthetic ivory keptops; and come with a slow-close fallboard. The GX 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 GL series pianos, with the polished ebony models in the new BLAK series receiving a UV-cured, scratch-resistant coating on the music rack.

In 2013, the GX BLAK models replaced the previous RX series—see our **review** in the Spring 2014 issue. The changes from RX to GX include a pinblock that is fitted to the plate flange and more securely attached to the case for better tuning stability, and the front stretcher has been made thicker, stiffening the structure, and thus both conserving tonal energy and contributing to tuning stability. The GX rims use alternating layers of two different hardwoods, one chosen for tonal power, the other for warmth. There have also been some changes to the scale designs and soundboard taper.

In the fall of 2015, Kawai consolidated its GM and GE piano lines into a single, new GL line of models: GL-10 (5'), GL-20 (5' 2"), GL-30 (5' 5"), GL-40 (5' 11"), and GL-50 (6' 2"). The GL models share some important features with the higher-end GX models: Millennium III action with hammer-shank stabilizers, agraffes, stronger pinblock/stretcher design, longer keys, full sostenuto pedal, and soft-close fallboard, among others. However, the GL models have a single-wood-variety hardwood rim, rather than the blended hardwoods of the GX series; a solid rather than a vertically laminated bridge, without cap; acrylic rather than Neotex keytops; a simpler beam structure in the smaller models (GL-10/20/30); and a simpler cabinet design and less elaborate interior finishing. The GL-20/30/40/50 models are all built in Japan; the GL-10 is made in Indonesia. The inclusion of several GX-level features makes the GL-10/20 models significant steps up from the discontinued GM models.

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.

In 2012, Kawai updated the Shigeru Kawai grands, changing the cabinet styling and some of the pianos' construction features. The inside of the rim is now finished with bird's-eye maple veneer, and the round legs have been changed to straight legs with brass trim. The rim itself is now made of alternating layers of rock maple and mahogany, which Kawai says provides more power without losing warmth in the tone. The structure at the front of the piano has been made stronger, and the beams underneath are now made from spruce instead of the laminated mahogany Kawai uses in its other models. The keys have been lengthened for a better touch, especially on the smaller models.

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 since 2000 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.

KAYSERBURG — See Pearl River

KINGSBURG

Piano Empire, Inc..
3035 East La Mesa Street
Anaheim, California 92806
800-576-3463
714-408-4599
info@pianoempire.com

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

+86-535-6932912

kingsburgpiano@163.com www.kingsburgpiano.com.cn

www.kingsburgpianosusa.com

Yantai Kingsburg Piano Co., Ltd., formerly known as Yantai Longfeng, was established in 1988. It is located in a temperate area of northern China that is said to be ideal for piano making because of its moderate humidity level. The same factory, under previous ownership, made pianos for the West under various brand names for many years.

All Kingsburg pianos have been designed by well-known piano-design master Klaus Fenner, and scales have been further developed by a piano-design expert from a highly regarded overseas piano manufacturer. Components are sourced from around the world: from Germany, Röslau piano wire, Abel hammers, and Dehonit pinblocks; from the Czech Republic, Detoa actions; and from Japan, tuning pins and ivory-like mineral keytops. All pianos now feature keys of real ebony wood and come with a slow-close fallboard. Interesting design features include longer keys on upright models for more a grand-like playing experience, brass-bar duplex scale, and the company's exclusive Tri Board solid spruce

soundboard, which, in the taller verticals, is unattached to the piano back at the bottom, for better bass tone and improved tuning stability.

To continue improving quality, Kingsburg has also invested in computerized manufacturing equipment and advanced scale-design software. With these tools, the company says, its goals are to achieve a smooth, comfortable touch from the keys and action; accurate downbearing and crown on the bridges and sound-board; and greater harmonic resonance and uniformity of sound volume.

At present, the Kingsburg line comprises four sizes of upright and three sizes of grand. 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 an instrument to the customer's home with very little additional work being required. To that end, the U.S. distributor's Asian affiliate sends highly trained technicians to the factory to fully tune, voice, and regulate Kingsburg pianos to their high standards before they are 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.knabepianos.com

Pianos made by: Samick Musical Instrument Mfg. Co. Ltd., Inchon, South Korea; and Bogor, West Java, Indonesia

Founded in Baltimore in 1837 by Wilhelm (William) Knabe, a German immigrant, Wm. Knabe & Co. established itself in the 19th and early 20th centuries as one of the finest piano makers in America. Over the years, Knabe pianos have left an important mark on the music field, including over 40 years as the official piano of the Metropolitan Opera, sponsoring Tchaikovsky's appearance at the opening of Carnegie Hall, and their places inside the White House and Graceland. Today, Knabe is the official piano of the American Ballet Theatre at the Met. 2012 marks the company's 175th anniversary.

As part of the consolidation of the American piano industry in the early 20th century, Knabe 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. When the line was discontinued, Samick acquired the Wm. Knabe & Co. name. (Note: "Knabe" is pronounced using the hard K sound followed by "nobby.")

SMC (Samick's U.S. distribution subsidiary) began by using the Wm. Knabe name on some of the pianos formerly sold as the World Piano premium line of Samick instruments. In 2002, SMC developed the Concert Artist series for the Knabe name. Highlighting this series are the 5' 8" and 6' 4" grand models, which have been redesigned, 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 sandcast plates, lacquer semigloss wood finishes, Renner actions on larger grands, German hammers, and rims of maple and oak. The company has added 5' 3", 7' 6", and 9'2" models for the American market. The verticals feature unique cabinet designs with bird's-eye maple and mahogany inlays, rosewood key inserts, and tone escapement. The 52" upright includes a full sostenuto, hand-activated mute rail, and agraffes throughout the bass section of the piano.

For two years, SMC completed assembly of Concert Artist grands at its Tennessee facility, with strung backs made in Indonesia or Korea. Now, most 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.

In 2011, SMC unveiled two additional product lines within the Knabe family: the Academy and Baltimore series. The Academy series has many of the same features and specifications as the popular, upper-end, Kohler & Campbell Millennium brand, also made by Samick: a maple or beech inner rim (grands); a premium sound-board of solid white spruce; German hammers; a Samick Premium Action; satin lacquer semigloss wood finishes; and a Samick-made hornbeam action rail (larger verticals). (See Samick for more about Kohler & Campbell.) The Academy series also boasts two institutional studio uprights, the WMV245 and WMV247, both with full-length music racks, the WMV247 also with agraffes through the bass section.

The Baltimore series offers a more modestly priced alternative to the institutional Academy series or upperend Concert Artist series. This line features an all-spruce "surface tension" (veneered) soundboard. The grands provide a full sostenuto pedal, slow-close fallboard, fully adjustable music desk and rack, multiple finishes in

both satin ebony and wood tones, and, recently, a new designer grand with accents of Bubinga or African Pommele. The verticals showcase a wide range of sizes and cabinet styles, including wood tones in French cherry, traditional mahogany, and Renaissance walnut.

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

KOHLER & CAMPBELL — See Samick.

MASON & HAMLIN

Mason & Hamlin Piano Company 35 Duncan Street Haverhill, Massachusetts 01830 916-567-9999

www.masonhamlin.com

Pianos made by: Mason & Hamlin Piano Co., Haverhill, Massachusetts

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 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 Piano-Disc, purchased Mason & Hamlin out of bankruptcy and set about reestablishing manufacturing at the sixstory factory in Haverhill, Massachusetts. The company emphasizes limited-quantity, handbuilt production, and currently manufactures from 200 to 350 pianos per year. Daily tours are offered to visitors.

Since acquiring the company, the Burgetts have brought back most of the piano models from the company's golden Boston era (1881–1932) that originally made the company famous. Refinements have been made to the original scale designs and other core design features. First came the 5'8" model A and 7' model BB, both of which had been manufactured by the previous owner. 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 these three models was an especially interesting and costly project: in the process, the engineering staff resurrected the original design of each model, constructed new rim presses,

standardized certain features, refined manufacturing processes, and modernized jigs, fixtures, templates, 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 assembled 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 seven-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 to specific points on the inner rim. This system of turnbuckles is said to lock 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, anecdotal evidence and observations by piano technicians tend to validate it 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. The company manufactures a new line of carbon-fiber 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 has moved to 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. The Wessell, Nickel & Gross composite action is now standard on all new Mason & Hamlin pianos.

Mason & Hamlin grands are available in satin and high-polish ebony finishes, and in several standard and exotic wood finishes in 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, is standard on all new Mason & Hamlin grands.

In 2014, to commemorate the company's 160th anniversary, Mason & Hamlin introduced the Cambridge Collection. Model designs in this series feature two-toned cabinets in hand-rubbed finishes of polished ebony and either bubinga or Macassar ebony. On the grands, the hand-selected exotic veneers appear on the fallboard, the music desk, the lid underside, and the inner rim; on the verticals, they appear on the upper and lower front panels.

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.

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

MAY BERLIN — See Schimmel.

NIENDORF

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The Niendorf Piano Company was founded in 1896, by the brothers Karl and Hermann Niendorf, as an offshoot of an old, established family of instrument makers. The Niendorfs were particularly forward looking in their conception of piano design, and the company gained international recognition for the quality of its products, especially for its small grands. In 1972, along with a number of other Soviet-bloc piano makers, Niendorf was forced to nationalize, and became part of a consortium controlled by the German Piano Union. Following the dissolution of the U.S.S.R., the company was again privately owned, changed hands a number of times, and went out of business in 2006.

In 2015 Niendorf was revived, as a subsidiary of the Shanghai Eurasian Piano Company (also known as Mendelssohn Piano Company), under the direction of former Niendorf employee and piano craftsman Marcus Ernicke. The factory is located in Luckenwalde, Germany, near Berlin, employs 22 people, and makes about 60 upright and grand pianos a year under the Niendorf name. The company says that the pianos are entirely handcrafted in Germany from regionally sourced woods and other components, including Strunz soundboards, Renner actions, Abel hammers, Laukhuff keyboards, Röslau and Heller strings, Dehonit pinblocks, and Klinke bridge and tuning pins. The company is a member of the German Piano Manufacturers Association (BVK).

The keys of Niendorf grands are covered with a nonslippery, perspiration-absorbing ivory substitute. The piano cabinets are of classical elegance, with music desk and lyre of unique designs, and are manufactured using high-precision CNC machinery. The company uses 3-D computer-aided design to optimize the casting of its German-made iron plates. Every piano comes with a matching bench.

Currently in production are upright models 118 (46½") and 123 (48½"), and grand models 145 (4' 9"), 172 (5' 8"), 227 (7' 5"), and 275 (9'). At the end of 2018, the company plans to introduce its new model 135, a 53" concert upright. The introduction in 2017 of its model 275 concert grand was a milestone in the company's history; the model was inaugurated by internationally known concert pianist Jörg Demus at the Niendorf concert hall, in Luckenwalde.

In addition to the all-German Niendorf pianos, the company also manufactures the international Niendorf & Hemprich series, a cooperative venture with Mendelssohn, in China. (The long history of the Hemprich brand name dates back to the company's early days.) The most important parts of the piano, such as the soundboard, plate, pinblock, hammers, and strings, originate from German suppliers and are sent to China, where the pianos are manufactured to European standards, but at lower cost. The nearly complete instruments are then shipped to Niendorf in Germany, where the final musical finishing (tuning, regulating, voicing) is performed.

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

PALATINO

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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 manufactured a full range of musical instruments under its own name and under a variety of other, recognizable brand names, including cooperative ventures with Schimmel and Renner. The company has a highly automated factory that employs CNC routers from Japan and Germany, and imports high-quality materials and components for its pianos from around the world.

Palatino makes over 10,000 pianos annually in two categories: Classic and Professional. The Classic series includes the 48" Torino upright (PUP-123T) and 5' Milano grand (PGD-50); the Professional series includes the 50" Capri upright (PUP-126), the 5' 9" Roma grand (PGD-59), and the 6' 2" Firenze grand (PGD-62). Features common to all Palatino pianos include a German or Canadian solid spruce soundboard, German Röslau steel strings, and hard rock-maple pinblock. In addition, Professional-series pianos have a Renner-style action and hammers; the Classic series uses British-designed customized BPA-style actions and 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. The AXL factory is known as being one of China's higher-grade facilities for the manufacture of musical instruments. 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. Benches and slowclose fallboard mechanisms are warranted for one year.

PARSONS MUSIC

Parsons Music Corporation 8/F, Railway Plaza 39 Chatham Road South Tsim Sha Tsui, Kowloon Hong Kong +852 2333 1863 mailto@parsonsmusic.com www.parsonsmusic.com

Parsons Music Corporation, headquartered in Hong Kong, was founded in 1986 by Terence and Arling Ng as a small music-lesson studio. Since then it has become China's largest music retailer, with more than 100 retail locations and 80 music schools throughout China and Hong Kong. In 1997, the company expanded into manufacturing pianos and other musical instruments, and is now the third largest piano maker in China.

At present, all of the pianos Parsons makes for sale in this part of the world are made for and distributed by other companies under those companies' own brand names. However, Parsons manufactures and sells, in China and Hong Kong, its own house brands, Yangtze River, Toyama, and Schönbrunn; manufactures the brand Barrate & Robinson, which it licenses the right to sell in China; has a strategic alliance with Kawai, in which Parsons distributes Kawai pianos in China, and

manufactures select Kawai models for sale only in Parsons Music's stores in China; is the majority shareholder of the German piano makers Grotrian and Wilh. Steinberg and manufactures some of the Wilh. Steinberg models in China; and cooperates in the manufacture of the Pianoforce electronic player-piano system, and distributes it in China and Hong Kong. Parsons Music's commitment to piano manufacturing is also demonstrated by its ownership of an iron-plate foundry, a wood-processing facility, and even the forests in which the wood for its instruments is grown. In recent years, Parsons has become known within the piano-manufacturing community as the source of some of the best-made pianos from China.

PEARL RIVER

including Ritmüller and Kayserburg GW Distribution, LLC P.O. Box 329

Mahwah, New Jersey 07430 845-429-3712

www.pearlriverusa.com www.ritmullerusa.com www.kayserburgusa.com info@pearlriverusa.com

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

Established in 1956, Pearl River Piano Group has become the largest piano manufacturer in the world, with a production of over 125,000 pianos annually by more than 2,000 workers. The company builds pianos under the Pearl River, Ritmüller, and Kayserburg names, as well as under a few other names for OEM contracts with distributors such as Cristofori (with Jordan Kitt's Music) and Essex (with Steinway). (See separate listings under those names.) Pearl River is the best-selling piano brand in China, and is exported to more than 100 countries. After a successful IPO in 2012, the formerly government-owned company completed construction of a new, state-of-theart, 3.5 million sq. ft. factory, to which it will transition next year. The factory combines traditional craftsmanship with advanced CNC digital machinery, and complies with European high-level technology and process standards.

In recent years, Pearl River has revised and streamlined its model line with the assistance of European and American piano-design consultants. Many new models have been introduced, while older models have been reviewed and modified. Currently, Pearl River verticals begin with the 43" console model EU110 leg and toe continental (new in 2016) and the EU111 series in several traditional American furniture styles. They continue with a series of studio models, including the 45" model UP115M5 in a traditional institutional style (legs with toe blocks), and the 45" model UP115E in a school-friendly institutional style with special casters and a full-length music desk. Finally, there are the upright models, including the 46½" model EU118 (new in 2015), and the relatively new 48" model EU122 and 51½" model EU131 concert upright.

Pearl River grands come in six sizes, from 4' 11" to 9', and have been redesigned over the last three years to include features such as vertically laminated bridges with solid maple caps, lighter touchweights, German hammer felt, and new scale designs.

Pearl River also makes pianos under the Ritmüller name, a brand that originated in Germany in 1795. A European master piano designer was engaged in 2007 to design, from the ground up, a line of higher-end pianos that would be distinct from the Pearl River line. These instruments were introduced in North America in 2009 under the Ritmüller name. (In some parts of the world, these pianos are branded Kayserburg.)

Ritmüller pianos come in three distinct price categories: Premium, Performance, and Classic. The Premium models feature solid spruce soundboards, Renner hammers, hornbeam and maplewood actions, and real ebony sharps, among other higher-quality features. Piano Buyer's reviewers have auditioned several of the new grand models and have been very impressed. See reviews in the Fall 2009 issue of the grand models GH-160, 170, and 188; in the Fall 2010 issue of the GH-148R; and in the Fall 2011 issue of the GH-188R. In addition, the 48" model UH-121R vertical and the 4' 10" model GH-148R grand have been chosen as "Staff Picks." The Performance models, introduced in 2014, feature unique scales, offset backposts, ebony sharps, high-quality German Abel hammers, and a veneered and tapered all-spruce soundboard. The Classic series, introduced in 2011, is a line of lower-cost instruments currently comprising three vertical models. They feature a veneered all-spruce soundboard and German Röslau strings.

In 2013, Pearl River brought to North America the upper-level Kayserburg Artists series. These instruments are handmade by two dozen of Pearl River's most experienced craftsmen, personally managed by European piano experts, in what can be described only as a small "German" piano workshop inside a large Chinese piano factory. The Kayserburg Artists craftsmen have all completed a rigorous training that includes studying the world's finest pianos and working side by side with visiting European craftsmen. The Kayserburg Artists

pianos contain such high-end features as soundboards of tight-grained, solid European spruce, Renner hammers, Laoureux (French) damper felt, German Röslau strings, vertically laminated maple bridges with wood cores and solid beech caps, German Ivory*Leit* natural keytops, and genuine ebony sharps.

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

PERZINA, GEBR.

including G. Steinberg

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

The Gebr. Perzina (Perzina Bros.) 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. of the Netherlands. Eventually it was decided that making pianos in Germany was not economically viable, so manufacturing was moved to Yantai, China, where, under license, Perzina verticals and grands were made for a number of years by another company. In 2003, Music Brokers International established Yantai-Perzina, a joint-venture factory in Yantai, where it now builds Perzina pianos.

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; Perzina verticals sound very good, particularly in the bass.) The veneered soundboards are made entirely of Austrian white spruce, and the hammers are from C. Bechstein, in Germany.

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 veneered soundboards of Austrian white spruce, duplex scaling, and Abel hammers, among other high-quality components. All models come with a slow-close fallboard, and an adjustable artist bench. The distributor says that each grand is unpacked in the U.S., inspected, and adjusted as necessary before being shipped to the dealer.

The company's European headquarters says it ships many European materials to Yantai, including Degen copper-wound and Röslau strings, Delignit pinblocks, Renner and Abel hammers, English felts, European veneers, and Austrian white spruce soundboards. New manufacturing equipment is from Germany, Japan, and Italy. According to the company, all the piano designs are the original German scales.

The Perzina factory also manufactures G. Steinberg (formerly Gerh. Steinberg) pianos for distribution in the U.S. Gerhard Steinberg began making pianos in Berlin in 1908. The firm he established changed hands several times during the 20th century, most recently in 1993, when it was acquired by Music Brokers International. G. Steinberg grands are lower-cost versions of Perzina grands. They use standard factory hammers instead of Abel hammers, and the cabinets are cosmetically simpler. The verticals, also a lower-cost alternative, are of an entirely different scale design from that of Perzina verticals, and do not use Perzina's floating soundboard design.

Warranty: Gebr. Perzina and G. Steinberg: 10 years, parts and labor, to original purchaser, except for the soundboard, which carries a lifetime guarantee to original purchaser.

PETROF

Piano Royale Prague LLC P.O. Box 1130 Richland, Washington 99352 509-946-8078 877-946-8078

www.petrof.com

Pianos made by: Petrof, spol. s.r.o., Hradec Králové, Czech Republic

The Petrof piano factory was founded in 1864 by Antonin Petrof in Hradec Králové, an old, historic 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 statecontrolled 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 midsize 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 $\pm 4-5$ 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 info@smcmusic.com 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.

RACHALS, M. F.

M. F. Rachals Piano Ltd.
26 Lane 155, Baocheng Road
Shanghai, China 201100
+86 21-54314166
brand@mfrachals.com
www.mf-rachals.com

Contact: Leon Zhu, Leon@mfrachals.com

This company is seeking U.S. distribution.

Mathias Ferdinand Rachals established the M. F. Rachals Piano Company in Hamburg, Germany, in 1832. He was succeeded as head of the company by his son Eduard Ferdinand Rachals in 1866, and by his grandson Adolf Ferdinand Rachals in 1902. The Rachals family is further described in *Pianos and Their Makers*, by Alfred Dolge (Covina Publishing Co., 1911).

M. F. Rachals was a prominent piano maker until World War II. With the reunification of Germany in 1990, the company was reorganized. In the early 2000s, Rachals worked with the Artfield Piano Co., in China, to produce a line of medium-priced pianos sold worldwide. Rachals set up its own company in Shanghai, China, in 2013, and began producing its M series of pianos in 2015.

The M series uses original German scale designs, and European wood, parts, and other materials are shipped to China for assembly. The nearly completed instruments are then shipped to Germany, where hammers are installed, and all musical finishing work (tuning, action regulating, voicing) is performed to German standards. The pianos contain high-quality components often found in German pianos: Renner actions (standard in grands, optional in verticals), Renner or Abel hammers, Strunz Bavarian spruce soundboards, Röslau strings, and sharps of real ebony wood. At present there are four vertical M models (47", 48", 49", 50") and one grand M model (5'8").

In 2016, the lower-cost F series was introduced. This line uses less expensive components, such as Luo actions (standard in grands, optional in verticals), FFW hammers, Canya soundboards, and Suzuki strings. The F series comprises three verticals models (48", 49", 50½") and one grand (5').

RAVENSCROFT

Spreeman Piano Innovations, LLC 7898 East Acoma Drive, Suite 105 Scottsdale, Arizona 85260 480-664-3702 info@RavenscroftPianos.com www.RavenscroftPianos.com

Handcrafted 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 in 2007 in the Manufacturers' Showcase of the 50th Annual Convention of the Piano Technicians Guild. A custom-built model 275 is currently the official piano at the Tempe Center for the Arts.

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 rib scale, soundboard, bridges, and string scale are designed by Spreeman, who meticulously hand-builds each instrument with his three-person team.

Currently, only four to six pianos are produced yearly, with pricing beginning at \$230,000 for a model 220, and up to \$550,000 for a model 275 with "all the extras," including titanium string terminations, exotic veneers, intarsia, artwork, and inlays of precious stones. Most instruments are custom ordered and can take up to a year to complete.

RITMÜLLER — See Pearl River.

RÖNISCH

including Hupfeld Blüthner USA LLC 5660 West Grand River Lansing, Michigan 48906 517-886-6000 800-954-3200

info@bluthnerpiano.com www.roenisch-pianos.de www.hupfeld-piano.com

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

rgarvin@telus.net www.bluethner.ca

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

In 2009, the German piano manufacturer Blüthner purchased the Rönisch and Hupfeld brands and, to manufacture them, set up a new legal entity and a factory next door to the Blüthner factory in Leipzig, Germany.

Rönisch was established in Dresden in 1845 by Carl Rönisch. In his day, Rönisch was a pioneer in piano building, and his instruments were sold throughout the world. Rönisch's son sold the company after World War I, and production was moved to Leipzig after the Dresden factory was bombed in 1945. During the Communist era, the company was taken over by the state and combined with other piano factories; it became privately owned again in the 1990s.

Since purchasing the brand, Blüthner has redesigned the pianos, which are now made in three sizes of vertical and three sizes of grand, in dozens of styles, woods, and finishes. Musically, and in terms of their quality, Rönisch pianos are very similar to Haessler, another Blüthner brand, but the cabinet styles and finishes offered are different. The pianos are entirely made in Germany, with such parts as rims, beams, and cabinets supplied by Blüthner. The pianos also use high-quality parts such as Renner actions, Delignit pinblocks, soundboards of solid European mountain spruce, and Abel hammers. Although new to North America, Rönisch pianos have been very popular in other parts of the world for decades. Approximately 600 verticals and 300 grands are made each year.

Ludwig Hupfeld became involved in the musicalinstrument business in 1892, and purchased the Rönisch company in 1918. (Today, Hupfeld is a subdivision of Rönisch.) Hupfeld was one of the earliest and best-known makers of reproducing pianos—advanced pneumatic player pianos of the early 1900s that faithfully recorded the nuances of the playing of recording artists—and other automatic musical instruments.

Hupfeld pianos are made in two editions: Hupfeld Europe and Studio. The Hupfeld Europe line is entirely made in Europe, with strung backs and cabinets from Romania, and key and action assembly, final regulation, voicing, and inspection done at the Rönisch factory in Germany. The Studio line is made in Indonesia, using cast-iron plates, actions, and keys from Indonesian suppliers, and hammers, strings, pinblocks, and felt from Germany. The instruments are then sent to the Rönisch factory in Germany for final regulation, voicing, and inspection.

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

SAMICK

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

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

into@smcmusic.com www.smcmusic.com

Pianos made by: Samick Musical Instrument Mfg. Co. Ltd., Inchon, South Korea; and Bogor, West Java, Indonesia

In 1958, in South Korea, Hyo Ick Lee founded Samick as a Baldwin distributor. Facing an immense challenge in an impoverished and war-torn country, in the early 1960s, using largely imported parts, Lee began to build and sell a very limited quantity of vertical pianos. As South Korea's 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 inhouse. 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, from which the company emerged in 2002; it is now on a sound financial footing.

The company says that "Samick" means "three benefits" in Korean, symbolizing the management's wish that the activities of the company benefit not only the company itself, but also its customers and the Korean economy.

Samick Music Corporation (SMC), the North American sales and marketing arm of the Korean company, distributes Samick, 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 names Bernhard Steiner, Conover Cable, Hazelton Bros., Remington, or Sohmer & Co. The Kohler & Campbell line has been discontinued in North America but is still sold elsewhere. (For historical information about the original Kohler & Campbell piano company, see The Piano Book.) Most Samick-made pianos destined for the U.S. market are made in Indonesia. Some of the company's upper-level Wm. Knabe and J.P. Pramberger instruments are still made in South Korea. SMC has a warehouse and office facility in Tennessee, at which it uncrates, inspects, tunes, regulates, and voices its upper-level pianos before shipping them to dealers.

Most dealers of Samick-made pianos carry the Wm. Knabe, Pramberger, and/or Seiler lines. The company's offerings under the Samick brand name are limited to three sizes of grand piano that the company calls its International Series. These models are made in Indonesia using the same German CNC (computer numerical control) equipment employed for the upper-level models of its other brands. These models have solid white-spruce soundboards.

In the 1980s Klaus Fenner, a German piano designer, was hired to revise the Samick scale designs to make the pianos sound more "European." Most Samick pianos now being made are based on these designs. Most Samicks also have veneer-laminated soundboards, which the company calls a "surface tension" soundboard—essentially, a solid spruce soundboard sandwiched by two very thin veneers. With Klaus Fenner's technical advice, Samick pioneered the use of this soundboard in early 1980, and it is now used by others as well. Tonally, it behaves much like a solid spruce soundboard, but won't crack or lose its crown.

Quality control in Samick's South Korean and Indonesian factories has steadily improved over the years, and the Indonesian product is said to be almost as good as the Korean. 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 seen improvement. Many of Samick's Indonesian pianos are priced similarly to low-cost pianos from China. The musical design and performance of Samick's upper-level pianos—J.P. Pramberger, Wm. Knabe, and Seiler—have met with very positive response.

[Note: Samick-made pianos are identified using an odd system of serial numbers and letters that 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

www.sauter-pianos.de

Carl Sauter Pianofortemanufaktur GmbH & Co. KG Max-Planck-Strasse 20 78549 Spaichingen Germany +49-7424-94820 +49-7424-948238 (fax) info@sauter-pianos.de

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. The factory produces about 500 vertical and 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. 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 their lush, full, singing tone, and 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.

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; Vivace, a 6' 11" grand in a contemporary style with steel leg frame and inlays of stainless-steel squares on the rim; 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*.

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

SCHILLER — See Irmler.

SCHIMMEL

including Wilhelm Schimmel, Vogel, May Berlin Schimmel Piano Corporation 329 North New Street Lititz, Pennsylvania 17543 800-426-3205 schimmel@ptd.net

www.schimmel-piano.de

Pianos made by: Wilhelm Schimmel Pianofortefabrik GmbH, Braunschweig, Germany (Schimmel), and Kalisz, Poland (Wilhelm Schimmel); and Guangzhou Pearl River Piano Group Ltd., Guangzhou, China (Fridolin Schimmel)

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 70 years while earning a strong reputation for quality. In 2016, the Chinese piano maker Pearl River purchased a majority interest in Schimmel, in which the Schimmel family remains shareholders. Today,

Schimmel is managed by Hannes Schimmel-Vogel, the husband of Viola Schimmel. One of Europe's most prolific piano makers, Schimmel makes about 2,500 verticals and 500 grands per year.

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.

Schimmel's model line is organized into five categories: Konzert (K) and Classic (C), both made entirely in Germany; the Schimmel International series, made in Germany from parts sourced globally (this series is no longer exported to North America); Wilhelm Schimmel (formerly known as Vogel), made in Poland; and Fridolin Schimmel, made in China by Pearl River.

The company says that the purpose of the Konzert series is to expand the Schimmel line upward to a higher level of quality than it had previously attained, whereas the Classic series represents models that have been tested over time and are solid, traditional, high-quality instruments, but without all 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, and 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. All uprights have adjustable gliders (to adjust to unevenness in the floor) and come with a matching adjustable bench.

All Konzert grand models are scaled to use the model 280's concert-grand action. The case sides are angled slightly to accommodate a larger soundboard, and all have tunable front and rear duplex or triplex scales for greater tonal color. Other advanced features include: improved soundboard and bridge materials, more time spent voicing the instruments in the factory, sharps of real ebony, and mineral white keytops to mimic the feel of ivory. The largest grands have reinforced keys for optimal energy transmission.

Schimmel grand pianos historically had a very bright, clear tone that was a bit thin, and lacking in color in the treble. The grands were redesigned, in part, to add 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 in the past, as this is what the American ear tends to prefer. As for the verticals, the smaller models tend to have very big bass for their size, with a tone that emphasizes the fundamental, giving the low end 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 medium-size grand.

In 2002, Schimmel acquired the PianoEurope factory in Kalisz, Poland, a piano-restoration and manufacturing facility. Schimmel at first used the Kalisz factory to manufacture its Vogel brand, a moderately priced line named for the company's president. This line has now been replaced by the Wilhelm Schimmel brand, named for the company's founder. Schimmel says that although the skill level of its Polish employees is high, the lower wages and other lower costs available in Poland result in a piano approximately 30% less costly than comparable Schimmel models. Wilhelm Schimmel grand pianos feature full Renner actions, with other parts mainly made by Schimmel, in Braunschweig or in Kalisz. The Wilhelm Schimmel pianos, though designed by Schimmel, don't have all the refinements and advanced features of the latest Schimmel models. Nevertheless, they have received praise from many quarters for their high-quality workmanship and sound.

The May Berlin line, made for Schimmel in China, has been discontinued. The Fridolin Schimmel line is named for Wilhelm Schimmel's younger brother, who emigrated to America in 1890, and in 1893 established his own piano-manufacturing business, in Faribault, Minnesota. Fridolin Schimmel instruments feature scales, actions, and cabinets designed by Schimmel in Germany, and are made to high quality standards by Pearl River in China.

Warranty: Schimmel, Wilhelm Schimmel, and Fridolin Schimmel—10 years, parts and labor, to original purchaser.

SCHULZ, GEBR.

Piano Marketing Group, LLC 3227 Natoma Way Orlando, Florida 32825 954-559-9553

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Company Headquarters: Steffes & Schulz GmbH Mühlgasse 11-13 D-65183 Wiesbaden, Germany +49-611-992240

colintaylor@btconnect.com

Pianos made by: Steffes & Schulz GmbH, Wiesbaden, Germany; and Chappell Piano Ltd., Nanjing, Fujian Province, China.

The Schulz family has been involved in the German piano industry for more than five generations, in both manufacturing and trade. In 1888, the brothers Albert and Franz Schulz established the brand Gebr. Schulz (Schulz Bros.). The brand and company quickly became the strongest brand in the Rheingau, a county in the German state of Hesse, near Frankfurt and Wiesbaden.

In 2014, Frederik Steffes and Christoph Schulz established Steffes & Schulz to make the Gebr. Schulz brand internationally available. Steffes is the former owner of the Wilh. Steinberg factory, and Schulz is a member of the fifth generation of the Schulz family and a highly respected piano designer and technician. Their stated aim is to use their decades of combined experience in piano manufacturing "to create a piano wonderful in sound, touch, and style, which provides outstanding value for the money." To that end, the company has set up a production chain that combines modern design skills and high-tech manufacturing techniques with traditional German craftsmanship and quality control.

Currently, the company offers its G (German) line of pianos. The cabinets of G models are made in China, and, depending on the model, some sound-producing elements are made in Germany, some in China. The actions are installed, and final musical preparation is done, in Germany by specially trained and certified technicians. The G line consists of one upright model (G-20) and three grand models (G-58, G-86, and G-288). They use Renner action parts, Heller bass strings, and Paulello steel strings.

Warranty: 10 years, parts and labor, on main structural elements; 5 years, parts and labor, on other manufactured parts.

SCHULZE POLLMANN

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

Pianos made by: Schulze Pollmann s.r.l., Borgo Maggiore, San Marino

Schulze Pollmann was formed in 1928 by the merger of two German piano builders who had moved to Italy. Paul Pollmann had worked first with Ibach, then with Steinway & Sons (Hamburg), before opening his own piano factory in Germany. He later moved to Italy, where he met Albert Schulze, another relocated German piano builder. Pollmann managed the combined firms 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 entirely surrounded by Italy.

In North America, Schulze Pollmann offers two series of pianos: Masterpiece (grands) and Studio (verticals). The Masterpiece Series pianos, available only by special order, are made entirely in Italy and San Marino, and contain Delignit pinblocks, Renner actions and hammers from Germany, and Ciresa solid red-spruce soundboards from the Val di Fiemme, in Italy. The company uses both sophisticated technology and handwork in its manufacturing. All soundboards have finger-jointed construction to optimize stability and prevent cracking. Many of the cabinets have beautiful designs and inlays. The Studio series is partially made in Asia and finished off, including deluxe cabinetwork, in San Marino.

The uprights are well built and have a warm, colorful sound with a good amount of sustain. The treble is not nearly as brittle sounding as in some other European uprights. Schulze Pollmann grands are likewise very nicely crafted and arrive at the dealer in good condition, needing only solid preparation 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 Ferrari's racing red and a cast-iron plate in Ferrari gray carbon, the same color as the Scaglietti's engine. The car and the piano have been exhibited together in cities around the world.

Warranty: 10 years, parts and labor.

SCHUMANN

Redwood Distribution LLC 9491 South Monroe Street Sandy, Utah 84070 801-597-6168

www.schumannus.com

Pianos made by: Nanjing Schumann Piano Manufacturing Co., Ltd., Nanjing, Jiangsu Province, China

One of China's oldest piano manufacturers, Nanjing Schumann was founded in 1956 as Nanjing Moutrie, originally to manufacture the Moutrie piano brand. The Schumann brand was added in 1984. The factory covers 650,000 square feet and produces nearly 10,000 pianos annually.

The company says that its pianos are modeled after the "German piano tradition," with German components used in the production process. Examples include Röslau strings, German hammer felt, and imported German beechwood for pinblocks. The uprights have agraffes, and the grands sport bird's-eye maple veneer on the inner rim. All models include a veneered all-spruce soundboard, a slow-close fallboard (keyboard cover), silver/chrome hardware, and an adjustable padded bench.

Warranty: 10 years, parts and labor.

SEILER

including Johannes Seiler Samick Music Corp. (SMC) 1329 Gateway Drive Gallatin, Tennessee 37066 615-206-0077 info@smcmusic.com

www.seilerpianousa.com

Pianos made by: Ed. Seiler Pianofortefabrik, Kitzingen, Germany; with Samick Musical Instrument Mfg. Co. Ltd., Bogor, West Java, Indonesia

Eduard Seiler, the company's founder, began making pianos in 1849, in Liegnitz, Silesia, then part of Prussia. By 1923 the company had grown to over 435 employees, was producing up to 3,000 pianos per year, and was the largest piano manufacturer in Eastern Europe. In 1945 and after World War II, when Liegnitz (now Legnica) became part of Poland, 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, in Bavaria, 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 now produces about 1,000 pianos annually. Samick continues Seiler's tradition of making high-quality pianos, while diversifying the product lineup to suit a wider range of buyers.

Seiler uses a combination of traditional methods and modern technology. The scale designs are of relatively high tension, producing a balanced tone that is quite consistent from one Seiler piano to the next. Although brilliant, the tone also sings well, due to, the company says, a unique, patented soundboard feature called the Membrator system, used in Seiler's SE and ED lines: The perimeter of the soundboard is sculpted to be thicker and heavier in mass than the central portion of the board, forming an internal frame within the soundboard itself. The lighter, inner area becomes the vibrating membrane—a diaphragm on its own—unimpeded by the larger soundboard's attachment to the inner rim. Seiler says that its use of the Membrator system, as well as effective rib positioning, improves the soundboard's efficiency in radiating sound. It's easy to identify the Membrator by the tapered groove around the perimeter of the board.

The grands have wide tails, for greater soundboard area and string length. The German Seiler pianos feature Bavarian spruce soundboards, multi-laminated Delignit pinblocks, quartersawn beech bridges, full 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 had longer sustain and a more even-feeling touch.

Beginning in 2010, Samick expanded the Seiler line to cover several additional price points. The top-level, SE-series instruments continue to be handcrafted at the Seiler factory in Kitzingen, Germany, just as they have been for many years. These come in two styles, Classic and Trend. The construction and specifications of the two styles 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 are available in dozens of special furniture styles with beautiful, exotic woods and inlays.

The mid-level Seiler pianos, the ED models, are also known as the Eduard Seiler line. The pianos are manufactured entirely at Samick's Indonesian factory, using German CNC machinery, to the exact scales and specifications of the hand-built German models. The actions

include Renner wippen assemblies and an action rail of Delignit or hornbeam, with keys made by Samick.

New in 2016 is the custom model ED-186A, a specially prepared, limited-production version of the 6' 2" model ED-186, for the higher-level player who seeks a musical response greater than that generally found in regular factory-produced instruments. This model uses hand-selected Renner action parts, and higher-quality keys, keyframe, and hammers, all assembled, regulated, and voiced by Samick's Senior Technical Advisor at the company's facility in Tennessee. This model, as well as model ED-168HS (Heritage), will be part of Seiler's new Elite series. These pianos receive special care and attention from technical personnel in the Tennessee facility.

In July 2013, the new Johannes Seiler line was introduced. Though it features cabinetry as beautiful as that of its more expensive brethren, this lower-cost line has its own scale design not shared by other Samick-owned brands, and is produced entirely in the company's Indonesian facility, using Samick's premium action and hammers from Abel. These three grand and three vertical models can be identified by the "Johannes Seiler" label on the fallboard.

At both the German and Indonesian factories, strung backs are inspected and cabinet parts carefully fitted to ensure that all specifications have been met to precise tolerances. Soundboard mass distribution and rib positioning are under strict quality control, to achieve consistency in the soundboard's acoustical properties. Pre-stretching of the strings is done several times, followed by multiple tunings, to ensure maximum stability. Hammer alignment, voicing, and key weighting and balancing are all carefully performed by experienced Seiler technicians, both at the factory and at the company's Tennessee distribution facility, before shipment to dealers.

Seiler's 52" model SE-132, 49" model ED-126, and 52" model ED-132 are all available by special order with the optional Super Magnet Repetition (SMR) action, a patented feature that uses magnets to increase repetition speed. During play, tiny magnets attached to certain action parts of each note repel each other, forcing the parts to return to their rest position faster, ready for the next keystroke.

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

STEINBERG, G. — See Perzina, Gebr.

STEINBERG, WILH.

including Eisenberg

Thüringer Pianoforte GmbH Mozartstr. 3 07607 Eisenberg, Germany +49 (0) 36691 / 595-0 +49 (0) 36691 / 595-40 (fax)

sales@wilh-steinberg.com www.Wilh-Steinberg.com

Pianos made by: Thüringer Pianoforte GmbH, Eisenberg, Germany; and Parsons Music Ltd., China.

This company, formerly known as Wilh. Steinberg Pianofortefabrik, was formed after the reunification of Germany by the merger of several East German piano companies, the oldest of which traces its origins back to 1877. Since July 2013, the company has been owned by Parsons Music Ltd., a Hong Kong-based piano manufacturer. In addition to its own pianos, Thüringer Pianoforte makes several other European piano brands under OEM agreements. The company also specializes in custom cabinets and finishes. Piano production is about 500 verticals and 50 grands per year.

Wilh. Steinberg pianos are made in two levels of quality. The higher-quality level is the Signature series. These pianos are made in Germany with actions by Renner and keyboards by Kluge. Cabinets for the verticals are made by Thüringer Pianoforte in its own facilities; grand cabinets are supplied by Parsons Music. "Amadeus" and "Passione" are Signature series models that have special cabinet styles.

The lower-cost models, known as the P line (model numbers beginning with P), were formerly made under the Eisenberg brand name, a name no longer in use. P-line models are entirely made by Parsons Music in China using Thüringer designs.

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 world's best-kept secrets: Steingraeber &

Söhne. The company was founded in 1852 by Eduard Steingraeber, though its roots date back to the 1820s, when Eduard's father and uncle opened a workshop for square pianos and organs in the city of Neustadt. Eduard was an innovative piano designer, exhibiting his first full-size cast-iron frame at the world exhibition in Paris in 1867. From 1872 on, Steingraeber was associated with, and built pianos for, Franz Liszt and Richard Wagner, and in 1873 opened its first concert hall in Bayreuth.

Steingraeber has worked with furniture designers since 1904, when it collaborated with Bruno Paul on his Art Nouveau furniture for the St. Louis World's Fair. More recently, the company built a piano designed by Jørn Utzon, architect of the Sydney Opera House, with features reminiscent of that building. The Steingraeber engineering department offers consulting services on the technical development of pianos. This service was created in 1991, after reunification, to assist piano manufacturers of the former East Germany, and has designed and manufactured prototypes of new piano models for a number of European piano manufacturers. These designs are different from Steingraeber's own current models. In 2012, Steingraeber entered into a cooperative agreement with Pearl River, in China, to help that company design and manufacture a new line of premium pianos.

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 Schmidt-Steingraeber, who still makes pianos using the traditional methods of his forebears at the company's present factory, which it has occupied since 1872.

Steingraeber makes three sizes of vertical piano: 48", 51", and 54". An interesting option on the vertical models 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 five sizes of grand piano: 5' 7", 6' 3", 7', 7' 7", and 8' 11". The 5' 7" model A-170 grand has an unusually wide tail, allowing for a larger sound-board 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 recently redesigned from the model 205, was intended to embody the tone quality of the Steingraeber Liszt grand piano of circa 1873, but with more volume in 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 the 7'7" D-232 concert grand to provide an additional smaller, concert-size instrument. Its design includes many of the innovations of the E-272. New in 2012 is the 6'3" model B-192, which follows the design enhancements of the D-232 and C-212 in a size more comfortable for homes and smaller concert halls.

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 of which is a new action for uprights, available in all three vertical-piano models. 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. Another innovation, introduced in 2013, is the optional sordino pedal, which inserts a thin strip of felt between hammers and strings. Popular in early 19th-century grand pianos, the purpose of this feature is not, as in most modern pianos, to damp the sound almost completely, but rather to create a distant, ethereal sound, and thus to expand the instrument's expressive possibilities. On a Steingraeber piano, the sordino can either replace the sostenuto as the middle pedal or, be operated by a fourth pedal or a knee lever. A knee lever can also be employed to activate the so-called Mozart Rail, which reduces both the hammer-blow distance and the keytouch depth to simulate the sound and touch of the pianos of Mozart's day. In 2014, Steingraeber introduced the world's lightest grand piano lid, made of modern aircraft material with a honeycomb interior, which makes the lid nearly 50% lighter than conventional lids. The company says that the new material also projects sound better. 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.

Steingraeber pianos can also be special-ordered with a carbon-fiber soundboard, and with the Phoenix system of bridge agraffes (see www.hurstwoodfarmpianos.co.uk for more information on the Phoenix system).

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 is operated by biting on a special denture.

Warranty: 5 years, parts and labor, transferable to future owners within the warranty period.

STEINWAY & SONS

Steinway & Sons
One Steinway Place
Astoria, New York 11105
718-721-2600
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, and the combined company (called Steinway Musical Instruments, Inc.) was taken public on the New York Stock Exchange. In 2013, Paulson & Company, a private-equity firm led by Queens native John Paulson, purchased the public company and took it private once again. Paulson has said that he is committed to continuing the qualityfirst approach on which Steinway has built its reputation. 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. 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' 101/2" 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' 1134" 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. In addition to satin and semigloss finishes, all regular Steinway grands are also now available in polyester high-polish ebony, lacquer high-polish ebony, and polyester highpolish white.

Limited Edition models, issued at irregular intervals, are reproductions of turn-of-the-century designs, or pianos with artistic elements that make them unique. A currently-available 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. In 2016, another Pollarodesigned art-case model, the Fibonacci, was sold, for a

record-setting \$2.4 million, as Steinway's 600,000th piano. 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 woodworking 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 were recruited from its European operations rather than from America. It is speculated that this may have signaled 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.

In 2016, in a major development for the company, Steinway unveiled its own electronic player-piano system, Spirio. For details, see **Spirio** in the chapter on electronic player-piano systems.

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: various German and Asian manufacturers

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 1990, when 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, Gulbransen, Hobart M. Cable, Hampton, and Classic. In 1993 Story & Clark was purchased by QRS Piano Rolls, Inc., now QRS Music Technologies, Inc. (Ironically, QRS itself was founded in 1900 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 an electronic player-piano system, called PNOmation, that can be retrofitted into any piano (see "Buying an Electronic Player-Piano System").

Story & Clark offers two series of pianos, each series including verticals and grands made to its specifications by various Asian manufacturers. The Heritage Series is a popularly priced line of verticals and grands with a Storytone II soundboard—Story & Clark's name for a veneer-laminated, all-spruce soundboard.

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 Signature models 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, established by Hampton Story and Melville Clark, of integrating the latest technology into pianos, all Story & Clark pianos now come equipped with QRS's latest connected systems. Grand pianos, and the 48" model H7 Academy upright,

all have a PNOmation Studio reproducing-piano system, which includes the PNOmation3 playback system, the PNOscanTM record system, a keystop rail to prevent the hammers from striking the strings in Practice (Silent) mode, and a specially designed piano speaker. Most vertical pianos are standardly equipped with a connected PNOscan Studio system, which includes PNOscan, the PNOmation3 controller, a keystop rail, a specially designed piano speaker, headphones, and one year of PianoMarvel interactive piano lessons.

PNOscan is an optical sensor strip attached to the key frame directly under the keys. It senses the entire 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 QRS's PNOmation3 controller can then be used in multiple ways: wirelessly transmitted via Bluetooth to third-party apps, auto-recorded, auto-saved locally, or auto-archived to the customer's free PNOcloud account. The PNOmation3 controller also features built-in sounds for practicing in silence or layering. Use of any Wi-Fi-enabled or hardwired device will give full access to all settings, setups, and content, and the systems can also be controlled by Apple Watch and Amazon Echo. A USB connection or MIDI output to a computer, general MIDI sound module, or other digital device is also available. PNOscan and PNOmation are both HD MIDI ready. The addition of these systems to every Story & Clark acoustic piano gives customers the potential to have all the features of a digital piano and more.

In all Story & Clark pianos with a factory-installed PNOmation system, the system will be fully concealed, with no solenoid-rail cover visible, no need to cut the legs to accommodate the entire 88-note system, and full use of the original pedals and trapwork. This is called the QRS ZERO installation.

In 2017 Story & Clark introduced its new Black-Tie series, made to its specifications in cooperation with the German manufacturer Blüthner. The new models are specifically designed to perform in the rigors of commercial venues. Premium features include Renner hammers, Röslau strings, beech rims, solid brass hardware, tapered spruce soundboards, sand-cast plates, and advanced low-tension scales. The new models will include PNOmation Studio or PNOscan Studio systems, as outlined above. Prices were not available at press time.

Warranty: 10 years on moving parts to original purchaser.

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 \$1,500. 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.

WENDL & LUNG — See Feurich.

WERTHEIM

Wertheim Piano Level 3, 480 Collins Street 3000 Melbourne, Victoria, Australia +61 (0) 418 350124 info@wertheimpiano.com www.wertheimpianousa.com

Pianos for North American distribution made by: AXL Musical Instrument Co., Shanghai, China

Wertheim pianos were first produced in Germany from 1875 to 1908, and then in Richmond, Australia, a suburb of Melbourne, from 1908 to 1935. Approximately 18,000 uprights and grands were made during the Richmond period. They were popular, all-purpose pianos with a good reputation for easy maintenance, and were used in a wide variety of settings, including homes, schools, and public halls. The most famous exponent of the Wertheim brand was Dame Nellie Melba, who frequently requested Wertheim pianos for her performances.

The Wertheim brand is currently owned and distributed to the international market by John Martin, who revived it in 2002. In his more than 46 years in the music

industry, Martin has owned full-line retail music stores, managed a buying group for music-store retailers, and manufactured and distributed Wertheim pianos. Martin says that Wertheim's aim is to make the best-value, top-class pianos, using the best designs, materials, and workmanship, and working with leading piano designers and technicians from Germany, the U.S., Australia, and New Zealand.

Most Wertheim pianos for the North American market are made by AXL Musical Instrument Co., in Shanghai, China, which also manufactures the better-known Palatino brand. These Wertheims come in three series: Gold (model numbers beginning with W), Euro (WE), and Platinum (WP). The Gold-series models are for the budget-conscious buyer, Euro and Platinum for those desiring higher performance and quality. All contain German Röslau strings, solid spruce soundboard, and an 18-ply pinblock. The Gold and Euro series models use a Chinese action, the Platinum series models use a Renner action, with the option of a Wessell, Nickel & Gross composite action. The Euro and Platinum series have German Strunz soundboards and Renner hammers, and real ebony wood sharps. Currently available in North America are 48", 48½", and 49" verticals, and 5' 1", 5' 7", 5' 10", and 7' grands, each available in several popular finishes, and with some variation in cabinet design.

New in 2017 is the Wertheim/Fandrich series. These models, designed by internationally recognized piano designer Del Fandrich, are assembled in Wertheim's own new factory from the best internationally sourced components by workers who, the company says, are rewarded for high quality rather than high volume. The new models will be positioned to fill the mid- to upper range of the piano market.

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

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 how 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 in 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 are now being produced in Yamaha's other Asian plants. Yamaha also owns the renowned Austrian piano maker, Bösendorfer.

Yamaha's console line consists of the 43" model bl, in continental style, with a laminated soundboard; and the 44" models M460 and M560 in furniture style (freestanding legs), representing two levels of cabinet sophistication and price. All are internally similar (except for the soundboard) and have a compressed action typical of a console, which means that the action will not be quite as responsive as in 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 45" model b2, with a less-expensive institutional-style cabinet. The b2 replaces the Chinese-made model T118. All studio models are internally similar, with a full-size action. All Yamaha verticals under 48" tall are now made in the company's Indonesian factory, which has been making pianos for more than 30 years and, according to Yamaha, adheres to the same quality standards as its Japanese plant.

The uprights are the very popular 48" model U1; the 48" model b3, which is made in Indonesia, has the same scale design as the U1, and replaces the Chinese-made model T121SC; and the 52" model U3. The U3 joins the YUS5 (see below) in having 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 the 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. The YUS5 has German Röslau music wire instead of Yamaha wire, also for a mellower tone. This top-of-the-line 52" upright also has agraffes, duplex scaling, and a sostenuto pedal (all other Yamaha verticals have a practice/mute pedal). The U- and YU-series uprights are all made in Japan and come with soft-close fallboards.

Yamaha verticals are very well made for mass-produced pianos. 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 to have a broader spectrum of tonal color. Double-striking of the hammer in the low tenor on a soft or incomplete keystroke 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 trade-off being better-than-normal repetition for a vertical piano. If necessary, it's possible that a technician can lessen this problem with careful adjustment, but at the risk of sacrificing some speed of repetition.

Yamaha grands come in several 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 fallboard, and sostenuto pedal.

The Conservatory Classic and Conservatory Concert Collections of C-series grands were replaced in 2012 with the CX series, consisting of the 5' 3" model C1X, the 5' 8" model C2X, the 6' 1" model C3X, the 6' 7" model C5X, the 7' model C6X, and the 7' 6" model C7X. The new CX series incorporates some of the design elements of the limited-production CF series (see below) into the higher-production C-series pianos to create a sound more like that of a high-end American or European instrument—see our review in the Spring 2014 issue. 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 changes in cabinet design.

Both the C and CX models have the advanced construction, scaling, and cabinetry mentioned earlier,

including a true sostenuto pedal and a soft-close fall-board. Both also 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 C and CX grands have keytops of IvoriteTM, Yamaha's ivory alternative.

The new CF Series, one of two Yamaha Premium Collection lines, comprises the 9' model CFX (replacing model CFIIIS), and the 6' 3" model CF4 and 7' model CF6 (respectively replacing, in the U.S., 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: e.g., 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 by its craftsmen, designers, and engineers. The Yamaha concert grand is endorsed and used by a number of notable musicians, including Olga Kern, Michael Tilson Thomas, Chick Corea, and Elton John.

The second Premium Collection line, added in 2017, is the SX Series, positioned between the CX and CF lines and comprising the 6' 1" model S3X, the 6' 7" model S5X, and the 7' 6" model S7X. The SX series uses the same soundboard and scale-design approach as the flagship CFX model; has a completely new hammer design derived from testing more than 100 prototypes; and, most significant, has a new, thicker rim construction in which the wood is treated with a patented accelerated-aging process called Acoustic Resonance Enhancement, to give the piano a warmer, more romantic sound with a wider range of expression.

The price differences between the SX and CF models are related to their production processes: the CF instruments are fully handcrafted, whereas the SX pianos are

built with a combination of handcraftsmanship and innovative technologies. Yamaha says that SX pianos are intended especially for institutions and smaller concert venues, the CF models for larger concert halls.

Yamaha grands have historically 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 has long since been corrected. The clarity and percussiveness are very attractive but are less well suited for classical music, which tends to require a singing tone and lush harmonic color. On the other hand, Yamaha has long been the piano of choice for jazz and popular music, which may value clarity and brightness more than the other qualities mentioned.

In recent years, however, Yamaha has been trying to move away from this image of a "bright" piano whose sound is limited to jazz. First with its larger grands, and later with the smaller ones, Yamaha has changed such things as bridge construction and hammer density, and provided more custom voicing at the factory, to bring out a broader spectrum of tonal color. Now, with its Premium Collection models, and the innovative soundboard, hammer, and rim technologies used in their design and construction, Yamaha has come fully into the world of instruments suited for classical music (as well as jazz).

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.

Until recently, Yamaha made an entry-level line of pianos under the name Cable-Nelson. This 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. The most recent Cable-Nelson models were made in Yamaha's factories in China and Indonesia.

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.

Yamaha also makes electronic player pianos called Disklaviers, as well as a variety of hybrid acoustic/digital instruments—including Silent Piano (formerly called MIDIPiano), the AvantGrand series, and the model

NU1, that account for a substantial percentage of the company's sales. These products are separately reviewed in the articles "Buying an Electronic Player-Piano System" and "Hybrid Pianos."

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

YOUNG CHANG

including Weber and Albert Weber

PAL Sound 1240 S Allec Street Anaheim, California 92805 657-233-1888 fax 844-855-5111

www.youngchang.com www.weberpiano.com

Pianos made by: Young Chang Co., Ltd., Incheon, South Korea; and Tianjin, China

In 1956, three brothers—Jai-Young, Jai-Chang, 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 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 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, and established a North American distribution office in California in 1984. In addition to making pianos under its own name, Young Chang 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.

Weber & Co. was established in 1852 by Albert Weber, a German immigrant, and was one of the most prominent and highly respected American piano brands of the late 19th and early 20th centuries. During the consolidation of the American piano industry in the early

20th century, Weber became part of the Aeolian family of brands. Following Aeolian's demise in 1985, Young Chang acquired the Weber name.

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. Today, the Tianjin facility produces Young Chang and Weber pianos, and components for the Albert Weber line, which is assembled in South Korea.

Hyundai Development Company, a Korean civilengineering and construction firm, acquired Young Chang in 2006. The company says that Hyundai Development has brought the necessary capital for factory renovations and has instituted new advanced industrial quality-control systems.

In 2008 Young Chang hired noted American piano designer Delwin D. Fandrich to undertake a redesign of the entire Young Chang and Weber piano line. Highlights include extensively redesigned cast-iron plates, new string scales, and new rib designs. New directly-coupled bass bridges, along with unique "floating soundboard" configurations, improve soundboard mobility around the bass bridge for better bass tonal response. At the same time, a revised hammer-making process, in which the hammers are cold-pressed with less felt compression, provides for greater hammer resilience and improved tone, with less voicing required. Fandrich says that all of these features and processes contribute to his goal of building instruments with improved tonal balance and musicality, and provide opportunities to standardize manufacturing processes for better quality control. The new designs were phased in gradually from 2011 to 2013.

Along with being redesigned by Delwin Fandrich, former multiple piano lines were consolidated into just three lines: the Young Chang (Y) and Weber (W) series are entry- and mid-level instruments made in China, and the Albert Weber (AW) line comprises upper-level models made in Korea. The AW grands have lower-tension scales, maple rims, and Renner actions, and higher-quality hammer felt, soundboard material, and veneers (on wood-veneered models). The Y and W grands have lauan rims and Young Chang actions. The AW 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 Young Chang and Weber pianos distinctly differ from one another: the Weber models have a low-tension scale and softer, cold-pressed hammers, and the greater warmth and romantic tonal characteristics that often accompany that type of scale; the Young Chang models have a higher-tension scale and firmer cold-pressed hammers, and the greater brightness and stronger projection of a more modern sound. The Weber line, also known as the Premium Edition, also has agraffes in the bass section of the verticals, and beveled lids on the grands.

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. The 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 Group 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.

Young Chang also owns Kurzweil Music Systems, a manufacturer of professional keyboards and home digital pianos, which it acquired in 1990.

Warranty: Young Chang and Weber—10 years, parts and labor, to the original purchaser; Albert Weber—15 years, parts and labor, transferable to future owners during the warranty period, plus a lifetime warranty on parts to the original owner.

ACOUSTIC PIANO

Model & Pricing Guide

[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 February 2018 and apply only to piano sales in the U.S. Prices in Canada are often very different due to differences in duty, freight, sales practices, and competition.

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 = \$1.05–1.25. 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 15 to 25 percent. This does *not* mean that if you try hard enough, you can talk the salesperson into giving you a 25 percent discount. Rather, it reflects the

wide range of prices possible in the marketplace due to the many factors discussed earlier. For budgeting purposes only, I suggest figuring a discount of about 20 percent. This will probably bring you within about 5 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]

BALDWIN Verticals B342		43 43	French Provincial Satin Cherry		
B342		-	French Provincial Satin Cherry		
-		-	French Provincial Satin Cherry		
D 4 4 0		43		10,545	7,590
B442			Satin Mahogany	10,545	7,590
BP1		47	Polished Ebony	9,265	6,790
BP1/S		47	Polished Ebony with Silver Hardware	9,595	6,990
B243		47	Satin Ebony/Walnut (school piano)	10,545	7,590
BP3		48	French Provincial Polished Rosewood	10,865	7,790
BP3T		48	Polished Ebony	10,545	7,590
BP3T		48	Polished Rosewood	10,865	7,790
BP5		49	Polished Ebony	11,185	7,990
BP5		49	Polished Rosewood	11,505	8,190
B252		52	Satin Ebony	14,065	9,390
Grands					
BP148	4	10	Satin Ebony Lacquer	24,945	16,590
BP148	4	10	Polished Ebony	21,425	14,390
BP148	4	10	Polished Ebony with Silver Hardware	22,395	14,990
BP148	4	10	Polished Mahogany/Walnut/White	22,395	14,990
BP152	5		Satin Ebony Lacquer	27,825	18,390
BP152	5		Polished Ebony	24,325	16,190
BP152	5		Polished Mahogany/Walnut/White	25,295	16,790
BP165	5	5	Satin Ebony Lacquer	29,995	19,790
BP165	5	5	Polished Ebony	26,595	17,590
BP165	5	5	Polished Ebony with Silver Hardware	27,550	18,190
BP165	5	5	Polished Mahogany/Walnut/White	27,550	18,190
BP178	5	10	Satin Ebony Lacquer	39,995	25,990
BP178	5	10	Polished Ebony	35,825	23,390
BP178	5	10	Polished Mahogany/Walnut	37,425	24,390
BP190	6	3	Satin Ebony Lacquer	47,345	30,590
BP190	6	3	Polished Ebony	42,895	27,790
BP190	6	3	Polished Mahogany/Walnut	44,795	28,990
BP211	6	11	Polished Ebony	63,995	40,990

^{*}See pricing explanation on page 194.

Model	Feet	Inches	Description	MSRP*	SMP*
BECHSTEIN,	, C.				
C. Bechstein	Academ	y Series Ve	erticals		
A114 Modern	1	44	Polished Ebony	24,280	23,848
A112 Modern	ı	44	Polished White	26,220	26,220
A114 Chrome	e Art	44	Polished Ebony	26,220	26,220
A112 Chrome	e Art	44	Polished White	28,180	28,180
A114 Compa	ıct	45.5	Polished Ebony	26,220	26,180
A116 Compa	ct	45.5	Polished White	28,180	28,180
A116 Compa	ıct	45.5	Satin and Polished Walnut/Mahogany/Cherry	29,140	29,140
A124 Imposa	ınt	49	Polished Ebony	28,180	28,180
A124 Imposa	ınt	49	Polished White	30,120	30,120
A124 Style		49.5	Polished Ebony	28,180	28,180
A124 Style		49.5	Polished White	30,120	30,120
A124 Style		49.5	Satin and Polished Mahogany/Walnut/Cherry	32,060	32,060
C. Bechstein	Verticals	s	3 7	,	,
Millenium 116		46	Polished Ebony	30,120	30,120
Millenium 116		46	Polished White	32,060	32,060
Classic 118	011	46.5	Polished Ebony	32,060	32,060
Classic 118		46.5	Polished White	34,000	34,000
Classic 118		46.5	Satin and Polished Walnut/Mahogany/Cherry	35,960	35,960
Contour 118		46.5	Polished Ebony	32,060	32,060
Contour 118		46.5	Polished White	34,000	34,000
Contour 118		46.5	Satin and Polished Walnut/Mahogany/Cherry	35,960	35,960
Classic 124		49	Polished Ebony	39,840	39,840
Classic 124		49	Polished White	41,780	41,780
Classic 124		49	Satin and Polished Walnut/Mahogany/Cherry	43,720	43,720
Elegance 124	1	49	Polished Ebony	39,840	39,840
Elegance 124		49	Polished White	41,780	41,780
Elegance 124		49	Satin and Polished Walnut/Mahogany/Cherry	71,700	41,700
Concert 8	+	51.5	Polished Ebony	68,980	68,980
Concert 8		51.5	Polished White	70,860	70,860
Concert 8		51.5	Polished Walnut/Mahogany	70,000	70,000
Concert 8		51.5	Polished Burl Walnut		
Concert 8		51.5	Polished Cherry w/Inlays		
C. Bechstein	Academ				
A160	5	3	Polished Ebony	65,620	65,620
A160	5	3	Satin and Polished Mahogany/Walnut	79.240	79,240
A160	5	3	Polished White	69,520	69,520
4175	5	9	Polished Ebony	69,520	69,520
4175 4175	5	9	Satin and Polished Walnut/Mahogany	83,120	83,120
A175			Polished White		
	5	9		75,340	75,340
A190	6	3	Polished Ebony	73,400	73,400
A190	6	3	Satin and Polished Mahogany/Walnut	87,020	87,020
A190	6	3	Polished Chart	79,240	79,240
A208	6	8	Polished Ebony	85,060	84,182
A208	6	8	Satin and Polished Mahogany/Walnut	104,520	102,472
A208	6	8	Polished White	90,900	90,900
A228	7	5	Polished Ebony	98,680	95,458
A228	7	5	Satin and Polished Mahogany/Walnut	118,120	118,120
A228	7	5	Polished White	104,520	104,520

^{*}See pricing explanation on page 194.

. C . (con:				
, . , ,	tinued)			
Grands				
5	6	Polished Ebony	126,040	120,446
5		-	•	142,100
		<u> </u>		131,700
				139,538
		•		162,070
				158,140
				171,360
		-		180,800
_				209,140
		•		220,480
				268,372
9	2	Polished White	287,340	287,340
	bench.			
	45	Satin and Polished Ebony	33,639	31,443
	45	Satin and Polished Walnut/Mahogany	36,330	33,878
	45	Satin and Polished Cherry	36,499	34,031
	45	Satin and Polished White	35,994	33,574
	45	Satin and Polished Bubinga/Yew/Rosewood/Macassar	37,340	34,792
	46	Satin and Polished Ebony	37,377	34,825
	46	Satin and Polished Mahogany/Walnut	40,367	37,531
	46	Satin and Polished Cherry	40,554	37,700
	46	Satin and Polished White		37,193
	46	Satin and Polished Bubinga/Yew/Rosewood/Macassar		38,546
	46			43,958
	46		•	46,664
	49	•		39,973
				43,090
				43,285
	-	•		42,700
				44,260
			•	50,495
				53,613
		•		45,120
		-		48,650
				48,871
		•		48,208
				49,973
		<u> </u>		57,033
				60,562
		•		60,362
				65,032
			•	
		•		65,329
				64,439
		-		66,811
				76,297
	57.5	Polished Burl Walnut/Camphor e-volution Hybrid Piano System, add	88,444 8,200	81,040 7,421
	5 5 6 6 6 6 7 7 9	5 6 5 6 5 6 6 4 6 4 6 4 6 11 7 7 7 7 7 7 9 2 9 2 9 2 t include bench. 45 45 45 45 45 46 46 46 46 46 46 46 49 49 49 49 49 49 49 49 49 49 49 49 52 52 52 52 52 52 52 52 57.5 57.5 57.5	5 6 Polished Ebony 5 6 Satin and Polished Mahogany/Walnut/Cherry 6 0 Polished White 6 4 Polished White 6 4 Polished White 6 1 Polished Ebony 6 1 Polished Ebony 6 11 Polished Ebony 6 11 Polished Ebony 7 7 Polished Ebony 9 2 Polished Bony 9 2 Polished Bony 9 2 Polished White 9 3 Polished White 9 2 Polished White 9 2 Polished White 9 2 Polished White 9 2 Polished White 9 3 Polished White 15 Satin and Polished Walnut/Mahogany 16 Satin and Polished White 17 Satin and Polished Bubinga/Yew/Rosewood/Macassar 18 Satin and Polished Bubinga/Yew/Rosewood/Macassar 18 Satin and Polished Cherry 18 Satin and Polished Cherry 18 Satin and Polished White 18 Satin and Polished Bubinga/Yew/Rosewood/Macassar 18 Saxony Polished Pyramid Mahogany 19 Satin and Polished Ebony 20 Satin and Polished Cherry 21 Satin and Polished White 22 Satin and Polished White 23 Satin and Polished Bubinga/Yew/Rosewood/Macassar 24 Saxony Polished Pyramid Mahogany 25 Satin and Polished Bubinga/Yew/Rosewood/Macassar 26 Saxony Polished Pyramid Mahogany 27 Satin and Polished Bubinga/Yew/Rosewood/Macassar 28 Saxony Polished Pyramid Mahogany 29 Polished Burl Walnut/Camphor 20 Satin and Polished Bubinga/Yew/Rosewood/Macassar 20 Satin and Polished Bubinga/Yew/Rosewood/Macassar 21 Satin and Polished Bubinga/Yew/Rosewood/Macassar 22 Satin and Polished Bubinga/Yew/Rosewood/Macassar 23 Saxony Polished Pyramid Mahogany 24 Polished Burl Walnut/Camphor 25 Satin and Polished Bubinga/Yew/Rosewood/Macassar 26 Saxony Polished Pyramid Mahogany 27 Satin and Polished Bubinga/Yew/Rosewood/Macassar 28 Saxony Polished Pyramid Mahogany/Walnut 29 Satin and Polished Bubinga/Yew/Rosewood/Macassar 29 Satin and Polished Bubinga/Yew/Rosewood/Macassar 20 Saxony Polished Pyramid Mahogany	5 6 Polished Ebony 126,040 5 6 Satin and Polished Mahogany/Walnut/Cherry 144,920 6 4 Polished Ebony 148,700 6 4 Polished Ebony 167,580 6 4 Polished White 158,140 6 11 Polished Ebony 171,360 6 11 Polished White 180,800 7 7 Polished Ebony 209,140 7 7 Polished Ebony 272,240 9 2 Polished White 220,480 9 2 Polished White 287,340 45 Satin and Polished Walnut/Mahogany 36,330 45 Satin and Polished White 35,994 45 Satin and Polished White 35,994 45 Satin and Polished Bubinga/Yew/Rosewood/Macassar 37,340 46 Satin and Polished Mahogany/Walnut 40,367 46 Satin and Polished Mahogany/Walnut 40,367 46 Satin and Polished Mahogany/Walnut </td

^{*}See pricing explanation on page 194.

Model	Feet	Inches	Description	MSRP*	SMP*
BLÜTHNER	? (continue	ed)			
Grands					
11	5	1	Satin and Polished Ebony	85,170	78,077
11	5	1	Satin and Polished Mahogany/Walnut	91,984	84,243
11	5	1	Satin and Polished Cherry	92,410	84,629
11	5	1	Satin and Polished White	91,132	83,472
11	5	1	Satin and Polished Bubinga/Yew/Rosewood/Macassar	94,539	86,556
11	5	1	Saxony Polished Pyramid Mahogany	109,018	99,659
11	5	1	Polished Burl Walnut/Camphor	109,018	99,659
11	5	1	President Polished Ebony	96,759	88,565
11	5	1	President Polished Mahogany/Walnut	103,572	94,730
11	5	1	President Polished Bubinga	106,128	97,043
11	5	1	President Burl Walnut	120,607	110,147
11	5	1	Wilhelm II Satin and Polished Ebony	99,649	91,180
11	5	1	Wilhelm II Polished Mahogany/Walnut	107,621	98,395
11	5	1	Wilhelm II Polished Pyramid Mahogany	127,045	115,973
11	5	1	Wilhelm II Polished Burl Walnut	127,045	115,973
11	5	1	Ambassador Santos Rosewood	122,901	112,223
11	5	1	Ambassador Walnut	119,579	109,216
11	5	1	Nicolas II Satin Walnut with Burl Inlay	122,100	111,498
11	5	1	Louis XIV Rococo Satin White with Gold	136,699	124,710
11	5	1		103,197	94,391
11	5	1	Jubilee Polished Ebony Jubilee Polished Mahogany/Walnut	·	
			<u> </u>	110,010	100,557
11	5	1	Jubilee Burl Walnut	127,045	115,973
11	5	1	Julius Bluthner Edition	107,837	98,590
11	5	1	Crystal Edition Elegance	123,000	112,312
11	5	1	Crystal Edition Idyllic	144,000	131,317
10	5	5	Satin and Polished Ebony	98,183	89,853
10	5	5	Satin and Polished Mahogany/Walnut	106,037	96,961
10	5	5	Satin and Polished Cherry	106,528	97,405
10	5	5	Satin and Polished White	105,055	96,072
10	5	5	Satin and Polished Bubinga/Yew/Rosewood/Macassar	108,983	99,627
10	5	5	Saxony Polished Pyramid Mahogany	123,710	112,955
10	5	5	Polished Burl Walnut/Camphor	123,710	112,955
10	5	5	President Polished Ebony	109,771	100,340
10	5	5	President Polished Mahogany/Walnut	117,626	107,449
10	5	5	President Polished Bubinga	120,571	110,114
10	5	5	President Burl Walnut	135,298	123,442
10	5	5	Senator Walnut w/Leather	115,884	105,872
10	5	5	Senator Jacaranda Satin Rosewood w/Leather	125,541	114,612
10	5	5	Wilhelm II Satin and Polished Ebony	114,874	104,958
10	5	5	Wilhelm II Polished Mahogany/Walnut	124,064	113,275
10	5	5	Wilhelm II Polished Pyramid Mahogany	141,736	129,268
10	5	5	Wilhelm II Polished Burl Walnut	141,736	129,268
10	5	5	Ambassador Santos Rosewood	141,677	129,214
10	5	5	Ambassador Walnut	137,848	125,749
10	5	5	Nicolas II Satin Walnut with Burl Inlay	136,081	124,150
10	5	5	Louis XIV Rococo Satin White with Gold	157,583	143,609
10	5	5	Jubilee Polished Ebony	116,209	106,167
10	5	5	Jubilee Polished Mahogany/Walnut	124,064	113,275
10	5	5	Jubilee Burl Walnut	141,736	129,268
10	5	5	Julius Bluthner Edition	119,103	108,786
10	5	5	Crystal Edition Elegance	135,000	123,172
10	5	5	Crystal Edition Idyllic	156,000	142,176
PH	5	9	Paul Hennigsen Design	154,000	140,367
6	6	3	Satin and Polished Ebony	111,635	102,027
3	6	3	Satin and Polished Ebony Satin and Polished Mahogany/Walnut	120,566	110,110
5 5	6	3	Satin and Polished Managarry, Walnut Satin and Polished Cherry	121,124	110,110
5 5	6	3	Satin and Polished White	119,449	109,099
,	U	3	Gath and Folioned Wille	113,443	103,033

^{*}See pricing explanation on page 194.

6 3 Saxony Polished Pyramid Mahogany 140,660 128,294 6 6 3 Prelished Try Wahrut/Camphor 140,660 128,294 6 6 3 President Polished Ebony 122,223 112,325 6 6 3 President Polished Bhogany/Wahrut 132,154 120,596 6 6 3 President Polished Bhogany (12,223 112,327) 6 6 6 3 President Polished Bhogany (12,223 112,327) 7 6 6 3 President Polished Bhogany (12,223 112,327) 8 6 6 3 President Polished Bhogany (12,223 112,327) 8 6 6 3 Senator Wahrut will cather 128,760 117,525 8 6 3 Senator Wahrut will cather 128,760 117,525 8 6 3 Senator Wahrut will cather 139,417 128,264 8 6 3 Wilhelm II Polished Bhogany/Wahrut 141,082 112,026 8 6 3 Wilhelm II Polished Pyramid Mahogany (14,023 112,026) 8 6 3 Wilhelm II Polished Pyramid Mahogany (15,036) 141,032 8 6 3 Wilhelm II Polished Burl Wahrut 158,686 144,607 8 6 3 Ambassador Santos Rosswood 153,634 140,033 8 6 3 Jubile Polished Ebony 129,661 118,340 8 6 3 Jubile Polished Bhogany/Wahrut 139,592 126,852 8 6 3 Jubile Polished Ebony 131,313 1335 119,855 8 6 3 Jubile Polished Bhogany/Wahrut 158,868 144,807 8 6 3 Jubile Polished Bhogany/Wahrut 158,868 144,807 8 6 3 Crystal Edition Elogance 144,000 163,863 8 6 6 10 Satin and Polished Bhogany/Wahrut 158,868 144,807 143,46 10 Satin and Polished Mahogany/Wahrut 163,430 139,851 119,853 14 6 10 Satin and Polished Mahogany/Wahrut 163,430 139,851 119,853 15 6 10 Satin and Polished Bhogany/Wahrut 163,430 139,851 119,334 119,335 119,335 119,336 119,336 119,336 119,336 119,336 119,336 119,336 119,336 119,336 119,336 119,336 119,336 119,336 119,336	Model	Feet	Inches	Description	MSRP*	SMP*
6 3 Salin and Polished Bullinga/New/Rosewood/Macassar 123,915 113,140 6 6 3 Saxony Polished Pyramid Mandagany 140,660 128,294 6 6 3 President Polished Ehony 123,223 112,514 6 6 3 President Polished Buhinga 135,553 128,284 6 6 3 President Polished Buhinga 135,553 128,687 6 6 3 President Polished Buhinga 135,550 132,687 6 6 3 President Polished Buhinga 135,550 132,687 6 3 President Polished Buhinga 135,500 132,687 6 3 Senator Walnut Walnut 152,696 117,725 6 3 Wilhelm II Polished Parmid Mandagany 153,868 144,607 6 3 Wilhelm II Polished Parmid Mandagany 153,868 144,607 6 3 Wilhelm II Polished Buhinga 153,654 144,607 6 3 Wilhelm II Poli	BLÜTHNER	? (continu	ed)			
6 3 Saxony Polished Byramid Mahogany 140,660 128,294 6 6 3 President Polished Ebony 123,223 112,232 112,105,96 6 3 President Polished Bubinga 135,503 123,627 6 6 3 President Bull Walnut 152,248 128,062 6 3 President Bull Walnut 152,248 183,503 123,627 6 3 President Bull Walnut 152,248 183,781 183,781 6 3 Senator Jacaranda Salin Rosewood wileather 128,760 117,525 6 3 Senator Jacaranda Salin Rosewood wileather 138,411 128,688 6 3 Wilhelm II Polished Bull Walnut 141,062 128,688 6 3 Wilhelm II Polished Bull Walnut 158,686 144,607 6 3 Ambassador Santor Rosewood 158,686 144,607 6 3 Ambassador Santor Walnut 150,070 137,368 6 3 Ambassador Santo Walnut	6			Satin and Polished Bubinga/Yew/Rosewood/Macassar	123,915	113,140
6 3 President Polished Ebony 8 6 3 President Polished Mahogany/Walnut 132,154 8 6 3 President Polished Bubinga 135,503 123,627 8 6 3 President Burl Walnut 152,486 8 6 3 President Burl Walnut 152,487 8 6 6 3 Senator Valanut wLeather 183,760 117,525 8 6 3 Senator Jaccaranda Satin Rosewood wLeather 188,417 126,265 8 6 3 Wilhelm II Statin and Polished Ebony 130,613 119,202 8 6 3 Wilhelm II Polished Mahogany/Walnut 141,062 128,686 8 6 3 Wilhelm II Polished Parmid Mahogany 158,686 144,607 8 6 3 Wilhelm II Polished Parmid Mahogany 158,686 144,607 8 6 3 Wilhelm II Polished Parmid Walnut 158,686 144,607 8 6 3 Milhelm II Polished Parmid Walnut 159,686 144,607 8 6 3 Ambassador Santos Rosewood 153,654 140,053 8 6 3 Ambassador Santos Rosewood 153,654 140,053 8 6 3 Louis XIV Roocoo Satin White with Burl Inlay 154,726 8 6 3 Louis XIV Roocoo Satin White with Gold 179,174 163,183 8 6 3 Jubilee Polished Ebony 129,661 8 3 Jubilee Polished Ebony 129,661 8 3 Jubilee Polished Ebony 139,592 128,263 8 6 3 Jubilee Polished Ebony 130,535 8 6 3 Jubilee Polished Mahogany/Walnut 156,686 8 144,607 158,686 158,687 1	6	6	3		140,660	128,294
6 3 President Polished Mahogany,Walnut 132,154 120,586 6 3 President Burl Walnut 152,248 138,781 6 3 President Burl Walnut 152,248 138,781 6 6 3 President Burl Walnut 152,248 138,781 6 6 3 Senator Valnut w/Leather 128,760 117,525 6 6 3 Senator Valnut w/Leather 128,760 117,525 6 6 3 Wilhelm II Satin and Polished Ebory 130,613 119,205 6 6 3 Wilhelm II Solished Mahogany,Walnut 141,062 128,658 6 3 Wilhelm II Polished Mahogany,Walnut 158,686 144,607 6 6 3 Wilhelm II Polished Burl Walnut 158,686 144,607 6 6 3 Wilhelm II Polished Burl Walnut 158,686 144,607 6 6 3 Wilhelm II Polished Burl Walnut 158,686 144,607 137,386 6 3 Arnbassador Walnut 158,686 144,607 137,386 6 3 Arnbassador Walnut 158,050 153,654 144,053 6 6 3 Miscolas II Satin Walnut with Burl Inlay 154,726 141,024 6 6 3 Usbilee Polished Ebory 129,643 145,024 6 6 3 Usbilee Polished Ebory 129,643 145,624 6 3 Usbilee Polished Burl Walnut 158,686 144,607 6 3 Usbilee Polished Mahogany,Walnut 158,656 144,607 6 3 Usbilee Polished Mahogany,Walnut 158,656 144,607 6 3 Usbilee Polished Mahogany,Walnut 158,656 144,607 6 3 Usbilee Polished Borny 158,657 144,607 6 3 Usbilee Polished Mahogany,Walnut 158,656 144,607 6 3 Usbilee Polished Mahogany,Walnut 158,656 144,607 6 3 Usbilee Polished Borny 158,657 144,607 6 3 Usbilee Plate, add 5,794 5,243 144,607 6 144,60	6	6	3	Polished Burl Walnut/Camphor	140,660	128,294
6 3 President Bull Walnut 152,692 128,692 138,781 6 6 3 Senator Walnut will-cather 128,760 117,262 6 3 Senator Locaranda Salin Rosewood will-cather 128,760 117,262 6 3 Wilhelm II Satin and Polished Ebony 130,613 119,202 6 3 Wilhelm II Polished Polished Ebony 130,668 144,607 6 3 Wilhelm II Polished Mahogany/Walnut 158,686 144,607 6 3 Wilhelm II Polished Buri Walnut 158,686 144,607 6 3 Wilhelm II Polished Buri Walnut 150,707 137,368 6 3 Ambassador Santos Rosewood 158,686 144,600 6 3 Ambassador Santos Rosewood 150,707 137,368 6 3 Ambassador Santos Rosewood 150,707 137,368 6 3 Michal Walnut 150,707 137,368 6 3 Jubila Santos Malanut 150,707 137,368 <t< td=""><td>6</td><td>6</td><td>3</td><td>President Polished Ebony</td><td>123,223</td><td></td></t<>	6	6	3	President Polished Ebony	123,223	
6 3 President Bull Walnut 152,692 128,692 138,781 6 6 3 Senator Walnut will-cather 128,760 117,262 6 3 Senator Locaranda Salin Rosewood will-cather 128,760 117,262 6 3 Wilhelm II Satin and Polished Ebony 130,613 119,202 6 3 Wilhelm II Polished Polished Ebony 130,668 144,607 6 3 Wilhelm II Polished Mahogany/Walnut 158,686 144,607 6 3 Wilhelm II Polished Buri Walnut 158,686 144,607 6 3 Wilhelm II Polished Buri Walnut 150,707 137,368 6 3 Ambassador Santos Rosewood 158,686 144,600 6 3 Ambassador Santos Rosewood 150,707 137,368 6 3 Ambassador Santos Rosewood 150,707 137,368 6 3 Michal Walnut 150,707 137,368 6 3 Jubila Santos Malanut 150,707 137,368 <t< td=""><td>6</td><td>6</td><td></td><td>•</td><td></td><td></td></t<>	6	6		•		
18,248	6	6				
6 3 Senator Walnut wil.eather 128,760 117,525 6 6 3 Senator Jacaranda Satin Rosewood wil.eather 138,417 126,264 6 6 3 Wilhelm II Polished Mahogany/Walnut 141,062 128,638 6 6 3 Wilhelm II Polished Mahogany 158,686 144,607 6 6 3 Wilhelm II Polished Burl Walnut 158,686 144,607 6 6 3 Ambassador Santos Rosewood 153,644 140,033 6 6 3 Ambassador Walnut 150,707 137,386 6 6 3 Ambassador Walnut 150,707 137,386 6 6 3 Louis XIV Roceo Satin White with Gold 179,174 163,148 6 6 3 Jubilee Polished Ebony 129,661 148,007 6 6 3 Jubilee Polished Ebony 158,686 144,607 7 6 6 3 Jubilee Polished Cabony 148,002 181,337	6			•	•	
6 3 Senator Jacaranda Satin Rosewood wLeather 138,417 126,264 6 3 Wilhelm II Satin and Polished Ebony 130,613 119,202 6 6 3 Wilhelm II Polished Mahogany/Walnut 140,602 128,686 6 6 3 Wilhelm II Polished Burl Walnut 155,686 144,607 6 6 3 Wilhelm II Polished Burl Walnut 150,686 144,607 6 6 3 Ambassador Walnut 150,707 157,386 6 6 3 Ambassador Walnut 150,707 157,386 6 6 3 Nicolas II Satin Walnut with Burl Inlay 154,726 141,024 6 6 3 Jubilee Burl Walnut 158,686 144,607 6 6 3 Jubilee Polished Ebony 122,661 118,340 6 6 3 Jubilee Polished Mahogany/Walnut 158,582 124,6423 6 6 3 Jubilee Polished Satin and Polished Satin Sati	6		-		·	
6 3 Wilhelm II Satin and Polished Ebony 130,613 119,202 6 6 3 Wilhelm II Polished Mapogany/Walnut 141,626 6 3 Wilhelm II Polished Pyramid Mahogany 158,686 144,607 6 6 3 Wilhelm II Polished Burl Walnut 158,686 144,607 6 6 3 Ambassador Santos Rosewood 155,654 140,033 6 6 3 Ambassador Walnut 150,707 137,386 6 6 3 Mischall Mark Walnut 150,776 141,026 6 6 3 Jubile Polished Ebony 129,616 163,181 6 6 3 Jubile Burl Walnut 158,686 144,607 6 3 Jubile Burl Walnut	6				,	
14,002	6					
18,886	6			•		
6 6 3 Wilhelm II Polished Burl Walnut 158,886 144,607 137,366 6 3 Ambassador Santos Rosewood 153,654 140,053 6 6 3 Ambassador Walnut 150,777 137,386 6 3 Nicolas II Satin Walnut with Burl Inlay 154,726 141,024 150,777 137,386 6 3 Nicolas II Satin Walnut with Burl Inlay 154,726 141,024 150,65 6 3 Louis XIV Roceco Satin White with Gold 179,174 163,148 6 6 3 Jubilee Polished Ebory 129,661 118,340 138,592 126,423 140,65 6 3 Jubilee Polished Mahogany/Walnut 138,592 126,423 140,65 6 3 Jubilee Burl Walnut 158,886 144,607 151,317 158,686 144,607 151,317 158,686 144,607 151,317 158,686 144,607 151,317 158,686 144,607 151,317	6				,	
6 3 Ambassador Santos Rosewood 153,654 140,053 6 6 3 Ambassador Walnut 150,707 137,368 6 6 3 Nicolas II Satin Walnut with Burl Inlay 154,726 141,024 6 6 3 Jubilee Polished Ebory 129,661 118,340 6 6 3 Jubilee Polished Mahogany/Walnut 158,686 144,607 6 6 3 Jubilee Delished Mahogany/Walnut 158,686 144,607 6 6 3 Jubilee Delished Mahogany/Walnut 158,866 144,607 6 6 3 Julius Bluther Edition 125,874 114,913 7 6 6 3 Crystal Edition Idylic 80,000 163,886 8 6 3 Crystal Edition Idylic 80,000 163,886 8 6 3 Jubilee Plate, add 5,794 5,243 8 6 10 Satin and Polished Ebory 131,355 118,65	6				•	
6 3 Ambassador Walnut 6 6 3 Nicolas II Satin Walnut with Burl Inlay 6 6 3 Louis XIV Rococo Satin White with Gold 779,174 183,148 6 6 3 Jubilee Polished Ebony 7 129,661 118,340 6 6 3 Jubilee Polished Ebony 7 129,661 118,340 7 6 3 Jubilee Polished Ebony 7 129,661 118,340 8 6 6 3 Jubilee Polished Mahogany/Walnut 7 158,686 144,607 8 6 3 Jubilee Burl Walnut 7 158,686 144,607 8 6 3 Jubilee Burl Walnut 8 158,686 144,607 8 6 3 Crystal Edition Elegance 1 144,000 131,317 8 6 6 3 Crystal Edition Idyllic 1 180,000 163,896 8 6 3 Jubilee Plate, add 1 180,000 183,896 8 6 6 3 Jubilee Plate, add 1 180,000 183,896 8 6 6 3 Jubilee Plate, add 1 180,000 183,896 8 6 10 Satin and Polished Bhory 1 131,335 119,855 8 6 10 Satin and Polished Bhory 1 142,499 129,998 8 6 10 Satin and Polished Cherry 1 142,499 129,998 8 6 10 Satin and Polished White 1 140,529 128,176 8 6 10 Satin and Polished White 1 145,782 132,929 8 6 10 Satin and Polished White 1 145,782 132,929 8 6 10 Satin and Polished White 1 145,782 132,929 8 6 10 Satin and Polished Bubinga/rew/Rosewood/Macassar 1 145,782 132,929 8 6 10 Satin and Polished Bubinga/rew/Rosewood/Macassar 1 145,782 132,929 8 6 10 President Polished Bubinga/rew/Rosewood/Macassar 1 145,782 130,343 8 6 10 President Polished Bubinga/rew/Rosewood/Macassar 1 149,782 130,343 8 6 10 President Polished Bubinga/rew/Rosewood/Macassar 1 149,782 130,343 8 6 10 President Polished Bubinga/rew/Rosewood/Macassar 1 149,782 130,343 8 6 10 President Polished Bubinga 1 179,071 161,245 8 10 President Polished Bubinga 1 179,071 179,071 161,245 8 10 President Burl Walnut 1 179,071 179,071 161,245 8 10 President Burl Walnut 1 179,071 151,265 8 10 President Burl	6				,	,
6 6 3 Nicolas II Satin Wahnut with Burl Inlay 154,726 141,024 6 6 3 Jubilee Polished Ebony 129,661 118,340 6 6 3 Jubilee Polished Ebony 129,661 118,340 6 6 3 Jubilee Polished Mahogany/Walnut 138,592 126,423 6 6 3 Jubilee Burl Walnut 158,686 144,607 6 6 3 Jubilee Polished Ebony 125,74 114,913 6 6 3 Crystal Edition Elegance 144,000 131,317 6 6 3 Crystal Edition Glylic 1880,000 183,896 6 3 Crystal Edition Glylic 1880,000 183,896 6 3 Crystal Edition Glylic 1880,000 183,896 6 6 3 Crystal Edition Glylic 1880,000 183,896 6 6 3 Jubilee Plate, add 5,794 5,243 7 6 6 6 3 Jubilee Plate, add 5,794 5,243 7 7 8 Satin and Polished Bony 131,335 119,855 7 8 Satin and Polished Cherry 142,499 129,958 7 8 Satin and Polished Wahngany/Walnut 141,842 129,364 7 8 Satin and Polished White 144,629 129,364 7 8 Satin and Polished Wahngany/Walnut 144,842 129,364 7 8 Satin and Polished Wahngany/Walnut 144,842 129,364 7 8 Satin and Polished Walnut/Camphor 164,482 150,757 8 6 10 Satin and Polished White 144,629 128,176 8 6 10 Satin and Polished Bubinga/Yew/Rosewood/Macassar 145,782 132,999 8 6 10 Satin and Polished Bubinga/Yew/Rosewood/Macassar 145,782 132,999 8 6 10 Satin and Polished Bubinga/Yew/Rosewood/Macassar 145,782 132,993 8 6 10 President Polished Mahogany/Walnut 153,430 139,851 8 6 10 President Polished Bubinga/Yew/Rosewood/Macassar 145,737 143,416 8 10 President Polished Bubinga/Yew/Rosewood/Macassar 145,737 143,416 8 10 President Polished Bubinga/Yew/Rosewood Wileather 157,731 143,416 8 10 President Burl Walnut 177,071 161,245 8 6 10 Senator Valnut Wileather 148,074 135,004 8 6 10 President Burl Walnut 177,071 161,245 8 6 10 Senator Valnut Wileather 148,074 135,004 8 6 10 Wilhelm II Polished Bony 135,009 8 167,071 8 16 10 Wilhelm II Polished Pony 149,362 136,662 140,061 8 6 10 Wilhelm II Polished Pony 149,362 136,662 140,061 8 6 10 Wilhelm II Polished Pony 149,362 136,662 140,061 8 6 10 Wilhelm II Polished Mahogany/Walnut 183,509 167,071 8 16 6 10 Jubilee Polished Chony 147,752 134,712 8 17,7604 8 18 10 Jubilee Polished Chony 147,7					·	
6 3 Louis XIV Rococo Satin White with Gold 179,174 183,148 6 6 3 Jubilee Polished Bony 129,661 118,340 6 3 Jubilee Polished Mahogany/Walnut 135,592 126,423 6 6 3 Jubilee Burl Walnut 155,686 144,600 6 6 3 Jubilee Plate Burl Walnut 155,686 144,000 181,317 6 6 3 Crystal Edition Idyline 180,000 183,896 6 3 Crystal Edition Idyline 180,000 183,896 6 3 Jubilee Plate, add 5,794 5,243 1 6 10 Satin and Polished Burl Manuty 141,842 129,354 1 6 10 Satin and Polished Burl Manuty 142,499 129,358 1 6 10 Satin and Polished Mahogany/Walnut 141,529 128,176 2 6 10 Saxin and Polished Burlingal/Walnut 153,430 159,375 3 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td></td<>						
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16	4	6	10	Satin and Polished Bubinga/Yew/Rosewood/Macassar	145,782	132,929
4 6 10 President Polished Ebony 142,924 130,343 4 6 10 President Polished Mahogany/Walnut 153,430 139,851 4 6 10 President Polished Bubinga 157,370 143,416 5 6 10 President Burl Walnut 177,071 161,245 6 10 Senator Walnut w/Leather 148,074 135,004 4 6 10 Senator Jacaranda Satin Rosewood w/Leather 157,731 143,743 4 6 10 Wilhelm II Satin and Polished Ebony 153,662 140,061 4 6 10 Wilhelm II Polished Mahogany/Walnut 165,955 151,186 5 10 Wilhelm II Polished Mahogany/Walnut 183,509 167,071 4 6 10 Wilhelm II Polished Burl Walnut 183,509 167,071 4 6 10 Ambassador Santos Rosewood 177,854 161,954 4 6 10 Ambassador Santos Rosewood 177,854 161,95	4	6	10	Saxony Polished Pyramid Mahogany	165,482	150,757
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4 6 10 President Polished Bubinga 157,370 143,416 4 6 10 President Burl Walnut 177,071 161,245 4 6 10 Senator Walnut w/Leather 148,074 135,004 4 6 10 Senator Jacaranda Satin Rosewood w/Leather 157,731 143,743 4 6 10 Wilhelm II Satin and Polished Ebony 153,662 140,061 4 6 10 Wilhelm II Polished Mahogany/Walnut 165,955 151,186 4 6 10 Wilhelm II Polished Burl Walnut 183,509 167,071 4 6 10 Wilhelm II Polished Burl Walnut 183,509 167,071 4 6 10 Ambassador Santos Rosewood 177,854 161,954 4 6 10 Ambassador Walnut 173,047 157,604 4 6 10 Nicolas II Satin Walnut with Burl Inlay 182,031 165,734 4 6 10 Louis XIV Rococo Satin White with Gold	4	6	10	President Polished Mahogany/Walnut	153,430	
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4 6 10 Nicolas II Satin Walnut with Burl Inlay 182,031 165,734 4 6 10 Louis XIV Rococo Satin White with Gold 210,793 191,763 4 6 10 Jubilee Polished Ebony 149,362 136,169 4 6 10 Jubilee Polished Mahogany/Walnut 159,868 145,677 4 6 10 Jubilee Burl Walnut 183,509 167,071 4 6 10 Julius Bluthner Edition 152,903 139,374 4 6 10 Queen Victoria JB Edition Polished Rosewood 183,000 166,611 4 6 10 Crystal Edition Elegance 165,000 150,321 4 6 10 Crystal Edition Idyllic 204,000 185,615 2 7 8 Satin and Polished Ebony 147,752 134,712 2 7 8 Satin and Polished Mahogany/Walnut 159,572 145,409 2 7 8 Satin and Polished Cherry 160,311 146,078 2 7 8 Satin and Polished Bubing					· ·	
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4 6 10 Jubilee Polished Ebony 149,362 136,169 4 6 10 Jubilee Polished Mahogany/Walnut 159,868 145,677 4 6 10 Jubilee Burl Walnut 183,509 167,071 4 6 10 Julius Bluthner Edition 152,903 139,374 4 6 10 Queen Victoria JB Edition Polished Rosewood 183,000 166,611 4 6 10 Crystal Edition Elegance 165,000 150,321 4 6 10 Crystal Edition Idyllic 204,000 185,615 2 7 8 Satin and Polished Ebony 147,752 134,712 2 7 8 Satin and Polished Mahogany/Walnut 159,572 145,409 2 7 8 Satin and Polished Cherry 160,311 146,078 2 7 8 Satin and Polished White 158,095 144,072 2 7 8 Satin and Polished Bubinga/Yew/Rosewood/Macassar 164,005 149,421				•		
4 6 10 Jubilee Polished Mahogany/Walnut 159,868 145,677 4 6 10 Jubilee Burl Walnut 183,509 167,071 4 6 10 Julius Bluthner Edition 152,903 139,374 4 6 10 Queen Victoria JB Edition Polished Rosewood 183,000 166,611 4 6 10 Crystal Edition Elegance 165,000 150,321 4 6 10 Crystal Edition Idyllic 204,000 185,615 2 7 8 Satin and Polished Ebony 147,752 134,712 2 7 8 Satin and Polished Mahogany/Walnut 159,572 145,409 2 7 8 Satin and Polished Cherry 160,311 146,078 2 7 8 Satin and Polished White 158,095 144,072 2 7 8 Satin and Polished Bubinga/Yew/Rosewood/Macassar 164,005 149,421	4					
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4 6 10 Julius Bluthner Edition 152,903 139,374 4 6 10 Queen Victoria JB Edition Polished Rosewood 183,000 166,611 4 6 10 Crystal Edition Elegance 165,000 150,321 4 6 10 Crystal Edition Idyllic 204,000 185,615 2 7 8 Satin and Polished Ebony 147,752 134,712 2 7 8 Satin and Polished Mahogany/Walnut 159,572 145,409 2 7 8 Satin and Polished Cherry 160,311 146,078 2 7 8 Satin and Polished White 158,095 144,072 2 7 8 Satin and Polished Bubinga/Yew/Rosewood/Macassar 164,005 149,421						
4 6 10 Queen Victoria JB Edition Polished Rosewood 183,000 166,611 4 6 10 Crystal Edition Elegance 165,000 150,321 4 6 10 Crystal Edition Idyllic 204,000 185,615 2 7 8 Satin and Polished Ebony 147,752 134,712 2 7 8 Satin and Polished Mahogany/Walnut 159,572 145,409 2 7 8 Satin and Polished Cherry 160,311 146,078 2 7 8 Satin and Polished White 158,095 144,072 2 7 8 Satin and Polished Bubinga/Yew/Rosewood/Macassar 164,005 149,421					•	
4 6 10 Crystal Edition Elegance 165,000 150,321 4 6 10 Crystal Edition Idyllic 204,000 185,615 2 7 8 Satin and Polished Ebony 147,752 134,712 2 7 8 Satin and Polished Mahogany/Walnut 159,572 145,409 2 7 8 Satin and Polished Cherry 160,311 146,078 2 7 8 Satin and Polished White 158,095 144,072 2 7 8 Satin and Polished Bubinga/Yew/Rosewood/Macassar 164,005 149,421	1				,	
4 6 10 Crystal Edition Idyllic 204,000 185,615 2 7 8 Satin and Polished Ebony 147,752 134,712 2 7 8 Satin and Polished Mahogany/Walnut 159,572 145,409 2 7 8 Satin and Polished Cherry 160,311 146,078 2 7 8 Satin and Polished White 158,095 144,072 2 7 8 Satin and Polished Bubinga/Yew/Rosewood/Macassar 164,005 149,421	1					
2 7 8 Satin and Polished Ebony 147,752 134,712 2 7 8 Satin and Polished Mahogany/Walnut 159,572 145,409 2 7 8 Satin and Polished Cherry 160,311 146,078 2 7 8 Satin and Polished White 158,095 144,072 2 7 8 Satin and Polished Bubinga/Yew/Rosewood/Macassar 164,005 149,421	4	6				
2 7 8 Satin and Polished Mahogany/Walnut 159,572 145,409 2 7 8 Satin and Polished Cherry 160,311 146,078 2 7 8 Satin and Polished White 158,095 144,072 2 7 8 Satin and Polished Bubinga/Yew/Rosewood/Macassar 164,005 149,421	4				204,000	185,615
2 7 8 Satin and Polished Mahogany/Walnut 159,572 145,409 2 7 8 Satin and Polished Cherry 160,311 146,078 2 7 8 Satin and Polished White 158,095 144,072 2 7 8 Satin and Polished Bubinga/Yew/Rosewood/Macassar 164,005 149,421	2	7	8	Satin and Polished Ebony	147,752	134,712
2 7 8 Satin and Polished Cherry 160,311 146,078 2 7 8 Satin and Polished White 158,095 144,072 2 7 8 Satin and Polished Bubinga/Yew/Rosewood/Macassar 164,005 149,421	2	7	8	Satin and Polished Mahogany/Walnut	159,572	145,409
2 7 8 Satin and Polished White 158,095 144,072 2 7 8 Satin and Polished Bubinga/Yew/Rosewood/Macassar 164,005 149,421	2		8	- ·	160,311	
2 7 8 Satin and Polished Bubinga/Yew/Rosewood/Macassar 164,005 149,421	2			•		
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^{*}See pricing explanation on page 194.

BLÜTHNER (2 2 2	continu 7 7	ed)			
2 2	-				
2	7	8	Polished Burl Walnut/Camphor	187,645	170,814
	1	8	President Polished Ebony	159,341	145,200
•	7	8	President Polished Mahogany/Walnut	171,161	155,897
2	7	8	President Polished Bubinga	175,593	159,908
2	7	8	President Burl Walnut	199,234	181,302
2	7	8	Senator Walnut w/Leather	160,950	146,656
2	7	8	Senator Jacaranda Satin Rosewood w/Leather	170,607	155,395
2	7	8	Wilhelm II Satin and Polished Ebony	172,870	157,443
2	7	8	Wilhelm II Polished Mahogany/Walnut	186,700	169,959
2	7	8	Wilhelm II Polished Pyramid Mahogany	205,672	187,129
2	7	8	Wilhelm II Polished Burl Walnut	205,672	187,129
2	7	8	Ambassador Santos Rosewood	200,086	182,073
2	7	8	Ambassador Walnut	194,678	177,179
2	7	8	Nicolas II Satin Walnut with Burl Inlay	206,410	187,796
2	7	8	Louis XIV Rococo Satin White with Gold	237,142	215,608
2	7	8	Jubilee Polished Ebony	165,779	151,026
2	7	8	Jubilee Polished Mahogany/Walnut	177,599	161,723
2	7	8	Jubilee Burl Walnut	205,672	187,129
2	7	8	Julius Bluthner Edition	177,045	161,222
2	7	8	Queen Victoria JB Edition Polished Rosewood	202,456	184,218
2	7	8	Crystal Edition Elegance	216,000	196,475
2	7	8	Crystal Edition Idyllic	255,000	231,769
1	9	2	Satin and Polished Ebony	199,267	181,332
1	9	2	Satin and Polished Libory Satin and Polished Mahogany/Walnut	215,209	195,759
1	9	2	Satin and Polished Cherry	216,205	
1	9	2	Satin and Polished White	,	196,661
1	9	2		213,216	193,956
1	9	2	Satin and Polished Bubinga/Yew/Rosewood/Macassar	221,187	201,169
1	9		Saxony Polished Pyramid Mahogany	253,069	230,022
1	9	2	Polished Burl Walnut/Camphor	259,047	235,432
1			President Polished Ebony	212,054	192,904
1	9	2	President Polished Mahogany/Walnut	227,996	207,331
1	9	2	President Polished Bubinga	233,974	212,741
1	-		President Burl Walnut	271,835	247,005
1	9	2	Wilhelm II Satin and Polished Ebony	233,143	211,989
1	9	2	Wilhelm II Polished Mahogany/Walnut	251,794	228,868
1	9	2	Wilhelm II Polished Pyramid Mahogany	272,961	248,024
1	9	2	Wilhelm II Polished Burl Walnut	278,939	253,433
1	9	2	Ambassador Santos Rosewood	274,271	249,209
1	9	2	Ambassador Walnut	269,011	244,449
1	9	2	Nicolas II Satin Walnut with Burl Inlay	284,952	258,875
1	9	2	Jubilee Polished Ebony	219,158	199,333
1	9	2	Jubilee Polished Mahogany/Walnut	235,100	213,760
1	9	2	Jubilee Burl Walnut	278,939	253,433
1	9	2	Julius Bluthner Edition	230,798	209,867
1	9	2	Queen Victoria JB Edition Polished Rosewood	244,938	222,663
1	9	2	Crystal Edition Elegance	246,000	223,624
1	9	2	Crystal Edition Idyllic	285,000	258,919
Grands			e-volution Hybrid Piano System, add	8,800	7,964

^{*}See pricing explanation on page 194.

Model	Feet	Inches	Description	MSRP*	SMP*
BÖSENDOF	RFER				
Verticals					
130		52	Satin and Polished Ebony	76,999	72,998
130		52	Satin and Polished White, other colors	91,999	86,998
130		52	Polished, Satin, Open-pore: Walnut, Cherry, Mahogany, Pomele	98,999	92,998
130		52	Polished, Satin, Open-pore: Pyramid Mahogany, Burl Walnut,	30,333	32,330
130		32	Birdseye Maple, Macassar, Madronna, Vavona, Wenge	103,999	98,998
Grands					,
155	-	4	Catin and Reliahed Ehany	101 000	114 000
	5	1	Satin and Polished Ebony	121,999	114,998
155	5	1	Satin and Polished White, other colors	136,999	128,998
155	5	1	Polished, Satin, Open-pore: Walnut, Cherry, Mahogany, Pomele	146,999	138,998
155	5	1	Polished , Satin, Open-pore: Pyramid Mahogany, Burl Walnut,	150,000	150,000
455	_		Birdseye Maple, Macassar, Madronna, Vavona, Wenge	159,999	150,998
155	5	1	Chrome: Satin and Polished Ebony	138,999	130,998
170	5	7	Satin and Polished Ebony	126,999	120,998
170	5	7	Satin and Polished White, other colors	142,999	134,998
170	5	7	Polished, Satin, Open-pore: Walnut, Cherry, Mahogany, Pomele	153,999	144,998
170	5	7	Polished , Satin, Open-pore: Bubinga, Pyramid Mahogany,		
			Santos Rosewood, Burl Walnut, Birdseye Maple, Macassar,		
			Madronna, Vavona, Wenge	164,999	154,998
170	5	7	Chrome: Satin and Polished Ebony	142,999	134,998
170	5	7	Johann Strauss: Satin and Polished Ebony w/Maple	152,999	144,998
170	5	7	Johann Strauss: Any finish and veneer	178,999	168,998
170	5	7	Liszt: Polished Vavona	182,999	172,998
170	5	7	Chopin, Louis XVI: Satin Pommele	207,999	196,998
170	5	7	Baroque: Light Satin Ivory; Vienna: Polished Amboyna	232,999	218,998
170	5	7	Artisan Satin and Polished	297,999	280,998
185CS	6	1	Conservatory Satin Ebony	116,999	110,998
185	6	1	Satin and Polished Ebony	133,999	126,998
185	6	1	Satin and Polished White, other colors	149,999	140,998
185	6	1	Polished, Satin, Open-pore: Walnut, Cherry, Mahogany, Pomele	157,999	148,998
185	6	1	Polished , Satin, Open-pore: Pyramid Mahogany, Burl Walnut,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	-,
	ŭ	·	Birdseye Maple, Macassar, Madronna, Vavona, Wenge	169,999	160,998
185	6	1	Chrome: Satin and Polished Ebony	149,999	140,998
185	6	1	Johann Strauss: Satin and Polished Ebony w/Maple	159,999	150,998
185	6	1	Johann Strauss: Any finish and veneer	185,000	174,998
185	6	1	Liszt: Polished Vavona	189,999	174,998
185	6	1	Edge: Satin and Polished Ebony	212,999	200,998
	-	•	•		
185	6	1	Chopin, Louis XVI: Satin Pommele	215,999	202,998
185	6	1	Baroque: Satin Light Ivory; Vienna: Polished Amboyna	236,999	222,998
185	6	1	Porsche Design: Diamond Black Metallic Gloss	248,999	234,998
185	6	1	Artisan Satin and Polished	306,999	288,998
200CS	6	7	Conservatory Satin Ebony	122,999	116,998
200	6	7	Satin and Polished Ebony	144,999	136,998
200	6	7	Satin and Polished White, other colors	161,999	152,998
200	6	7	Polished, Satin, Open-pore: Walnut, Cherry, Mahogany, Pomele	172,999	162,998
200	6	7	Polished , Satin, Open-pore: Pyramid Mahogany, Burl Walnut,		
			Birdseye Maple, Macassar, Madronna, Vavona, Wenge	185,999	174,998
200	6	7	Chrome Satin and Polished Ebony	145,596	120,744
200	6	7	Chrome: Satin and Polished Ebony	159,999	150,998
200	6	7	Johann Strauss: Satin and Polished Ebony w/Maple	170,999	160,998
200	6	7	Johann Strauss: Any finish and veneer	201,999	190,998
200	6	7	Dragonfly: Maple and Polished Ebony	206,999	194,998
200	6	7	Liszt: Polished Vavona	206,999	194,998
200	6	7	Beethoven Polished Ebony, Klimt "Woman in Gold"	176,999	166,998
200	6	7	Beethoven: Chrome; Cocteau: White	204,999	192,998
200	6	7	Edge: Satin and Polished Ebony	233,999	220,998
200	6	7	Chopin, Louis XVI: Satin Pommele	236,999	222,998

^{*}See pricing explanation on page 194.

Model	Feet	Inches	Description	MSRP*	SMP*
BÖSENDORF	ER (cor	ntinued)			
200	6	7	Baroque: Satin Light Ivory; Vienna: Polished Amboyna	259,999	244,998
200	6	7	Artisan Satin and Polished	325,999	306,998
214VC CS	7		Conservatory Satin Ebony	132,999	126,998
214VC	7		Satin and Polished Ebony	158,999	150,998
214VC	7		Satin and Polished White, other colors	181,999	170,998
214VC	7		Polished, Satin, Open-pore: Walnut, Cherry, Mahogany, Pomele	193,999	182,998
214VC	7		Polished, Satin, Open-pore: Pyramid Mahogany, Burl Walnut,		
			Birdseye Maple, Macassar, Madronna, Vavona, Wenge	211,999	198,998
214VC	7		Chrome: Satin and Polished Ebony	180,999	170,998
214VC	7		Johann Strauss: Satin and Polished Ebony w/Maple	189,999	178,998
214VC	7		Johann Strauss: Any finish and veneer	227,999	214,998
214VC	7		Liszt: Polished Vavona	233,999	220,998
214VC	7		Beethoven: Polished Ebony, Klimt "Woman in Gold"	191,999	182,998
214VC	7		Beethoven: Chrome; Cocteau: White	225,999	212,998
214VC	7		Edge: Satin and Polished Ebony	258,999	246,998
214VC	7		Chopin, Louis XVI: Satin Pommele	266,999	250,998
214VC	7		Baroque: Satin Light Ivory; Vienna: Polished Amboyna	292,999	274,998
214VC	7		Porsche Design: Diamond Black Metallic Gloss	308,999	290,998
214VC	7		Audi Design Polished Ebony	372,999	352,998
214VC	7		Artisan Satin and Polished	372,999	352,998
225	7	4	Satin and Polished Ebony	178,999	168,998
225	7	4	Satin and Polished White, other colors	197,999	186,998
225	7	4	Polished, Satin, Open-pore: Walnut, Cherry, Mahogany, Pomele	212,999	200,998
225	7	4	Polished , Satin, Open-pore: Pyramid Mahogany, Burl Walnut,		
			Birdseye Maple, Macassar, Madronna, Vavona, Wenge	229,999	216,998
225	7	4	Chrome: Satin and Polished Ebony	193,999	182,999
225	7	4	Johann Strauss: Satin and Polished Ebony w/Maple	204,999	192,998
225	7	4	Johann Strauss: Any finish and veneer	248,999	234,998
225	7	4	Liszt: Polished Vavona	255,999	240,998
225	7	4	Chopin, Louis XVI: Satin Pommele	291,999	274,998
225	7	4	Baroque: Satin Light Ivory; Vienna: Polished Amboyna	319,999	300,998
225	7	4	Artisan Satin and Polished	398,999	374,998
225	7	4	Grand Bohemian: Polished Ebony	420,000	420,000
280VC	9	2	Satin and Polished Ebony	229,999	216,998
280VC	9	2	Satin and Polished White, other colors	254,999	240,998
280VC	9	2	Polished, Satin, Open-pore: Walnut, Cherry, Mahogany, Pomele	274,999	258,998
280VC	9	2	Polished , Satin, Open-pore: Pyramid Mahogany, Burl Walnut,	27 1,000	200,000
20010	J	_	Birdseye Maple, Macassar, Madronna, Vavona, Wenge	297,999	280,998
280VC	9	2	Johann Strauss: Satin and Polished Ebony w/Maple	270,999	254,998
280VC	9	2	Johann Strauss: Any finish and veneer	323,999	304,998
280VC	9	2	Liszt: Polished Vavona	331,999	312,998
280VC	9	2	Chopin, Louis XVI: Satin Pommele	379,999	356,998
280VC	9	2	Baroque: Satin Light Ivory; Vienna: Polished Amboyna	412,999	390,998
280VC 280VC	9	2	Porsche Design: Diamond Black Metallic Gloss	437,999	412,998
280VC	9	2	Artisan Satin and Polished	472,999	444,998
290	9	6	Satin and Polished Ebony	262,999	246,998
290	9	6	Satin and Polished Ebony Satin and Polished White, other colors	,	
290	9	6	Polished, Satin, Open-pore: Walnut, Cherry, Mahogany, Pomele	288,999	272,998 294,998
290	9	6		312,999	234,330
230	9	υ	Polished , Satin, Open-pore: Pyramid Mahogany, Burl Walnut,	330 000	210 000
200	0	6	Birdseye Maple, Macassar, Madronna, Vavona, Wenge	338,999	318,998
290	9	6	Johann Strauss: Satin and Polished Ebony w/Maple	302,999	284,998
290	9	6	Johann Strauss: Any finish and veneer	369,999	346,998
290	9	6	Liszt: Polished Vavona	377,999	354,998
290	9	6	Chopin, Louis XVI: Satin Pommele	429,999	404,998
290	9	6	Baroque: Satin Light Ivory; Vienna: Polished Amboyna	472,999	444,998
290	9	6	Artisan Satin and Polished	536,999	506,998
Select models			Disklavier Enspire PRO, add	39,999	37,998

^{*}See pricing explanation on page 194.

Model	Feet	Inches	Description	MSRP*	SMP*
BOSTON					
Boston MSRP	is the pi	rice at the	New York retail store.		
Verticals					
UP-118E PE		46	Satin and Polished Ebony	11,950	11,950
UP-118E PE		46	Polished Mahogany	13,800	13,800
UP-118E PE		46	Satin and Polished Walnut	13,800	13,800
UP-118S PE		46	Satin Black Oak	7,850	7,850
UP-118S PE		46	Satin Mahogany	9,400	9,400
UP-126E PE		50	Polished Ebony	14,300	14,300
UP-126E PE		50	Polished Mahogany	16,600	16,600
UP-132E PE		52	Polished Ebony	15,900	15,900
		02	1 Ollohod Eborry	10,000	10,000
Grands					
GP-156 PE	5	1	Satin and Polished Ebony	21,800	21,800
GP-163 PE	5	4	Satin and Polished Ebony	26,600	26,600
GP-163 PE	5	4	Satin and Polished Mahogany	29,100	29,100
GP-163 PE	5	4	Satin and Polished Walnut	29,500	29,500
GP-163 PE	5	4	Polished White	32,800	32,800
GP-178 PE	5	10	Satin and Polished Ebony	31,100	31,100
GP-178 PE	5	10	Satin and Polished Mahogany	33,600	33,600
GP-178 PE	5	10	Satin and Polished Walnut	34,100	34,100
GP-193 PE	6	4	Satin and Polished Ebony	40,500	40,500
GP-215 PE	7	1	Polished Ebony	52,950	52,950
BRODMANN	I				
Verticals					
CE 118		47	Polished Ebony	7,350	5,900
PE 118V		47	Vienna Polished Ebony	10,170	7,780
PE 121		48	Polished Ebony	9,150	7,100
PE 121		48	Polished Mahogany/Walnut	10,050	7,700
PE 121		48	Polished White	10,350	7,900
PE 124V		48	Vienna Polished Ebony	11,670	8,780
PE 124V		48	ViennaPolished Bubinga	12,570	9,380
PE 125		49	Polished Ebony	10,050	7,700
PE 130		52	Polished Ebony	14,250	10,500
PE 132V		52	Vienna Polished Ebony	15,570	11,380
AS 132		52	Polished Ebony	23,970	16,980
Grands		-	,	-,	-,
CE 148	4	10	Polished Ebony	18,270	13,180
CE 175	5	9	Polished Ebony	21,270	15,180
PE 150	5	5	Polished Ebony	21,870	15,180
PE 162	5	4	Polished Ebony	25,470	17,980
PE 162	5	4	Polished Mahogany/Walnut	28,170	19,780
			Polished White		
PE 162 PE 162	5 5	4		27,270	19,180
PE 162 PE 162		4	Polished Bubinga Polished Two Tone (Ebony/Bubinga)	28,470	19,980
	5		` ,	26,070	18,380
PE 187	6	2	Polished Ebony	29,070	20,380
PE 187 IV	6	2	Polished Ebony w/Carbon-Fiber Action	34,440	23,960
PE 187	6	2	Polished Mahogany/Walnut	31,770	22,180
PE 187	6	2	Polished White	31,170	21,780
PE 187	6	2	Polished Bubinga	32,670	22,780
PE 187	6	2	Strauss Polished Ebony	31,170	21,780
PE 187	6	2	Strauss Polished Two Tone (Ebony/Bubinga)	32,070	22,380
PE 212	7		Polished Ebony	45,870	31,580
PE 228	7	5	Polished Ebony	58,770	40,180
AS 188	6	2	Polished Ebony	53,970	36,980
AS 211	7		Polished Ebony	68,970	46,980

^{*}See pricing explanation on page 194.

Model	Feet	Inches	Description	MSRP*	SMP*
BRODMANN (d	contin	ued)			
AS 227	7	6	Polished Ebony	77,970	52,980
AS 275	9		Polished Ebony	128,970	86,980
Grands			With Carbon-Fiber Action, add	5,370	3,580
CLINE					
Verticals					
CL118		46.5	Polished Ebony		6,300
CL118		46.5	Polished Ebony w/Nickel		6,500
CL118		46.5	Polished Walnut/Mahogany		6,500
CL121/123		48	Polished Ebony		7,390
CL121/123		48	Polished Ebony w/Nickel		7,590
CL121/123		48	Polished Mahogany/Walnut		7,590
CL121/123		48	Polished Mahogany/Walnut w/Detail Trim		7,590
Grands					
CL 150	4	11	Polished Ebony		12,300
CL 150	4	11	Polished Mahogany/Walnut		12,500
CRISTOFORI					
Verticals					
V430R		43	French Provincial Satin Cherry	4,999	4,999
V450		45	Polished Ebony	3,999	3,999
V450		45	Polished Mahogany	4,199	4,199
V465		46.5	Polished Ebony	4,499	4,220
V465		46.5	Polished Mahogany	4,699	4,442
V480LS		48	Polished Ebony	4,999	4,530
V480LS		48	Polished Mahogany	5,199	4,668
Grands					
G410L	4	10	Polished Ebony	8,990	8,750
G410L	4	10	Polished Mahogany	9,490	9,418
G53L	5	3	Satin and Polished Ebony	9,990	9,990
G53L	5	3	Polished Mahogany/Snow White	10,490	10,490
G57L	5	7	Satin and Polished Ebony	11,990	10,642
G57L	5	7	Polished Mahogany	12,490	11,406
G62L	6	2	Satin and Polished Ebony	13,990	11,902
CUNNINGHAM	1				
Verticals					
Liberty Console		44	Satin Ebony	6,590	6,590
Liberty Console		44	Polished Ebony	5,890	5,890
Liberty Console		44	Satin Mahogany	6,890	6,890
Liberty Console		44	Polished Mahogany	6,190	6,190
Studio Upright		50	Satin Ebony	10,690	10,690
Studio Upright		50	Polished Ebony	9,890	9,890
Studio Upright		50	Satin Mahogany	10,990	10,990
Studio Upright		50	Polished Mahogany	10,190	10,190
Grands					
Baby Grand	5		Satin Ebony	20,390	20,390
Baby Grand	5		Polished Ebony	19,190	19,190
Baby Grand	5		Satin Mahogany	21,090	21,090
Baby Grand	5		Polished Mahogany	19,890	19,890
Studio Grand	5	4	Satin Ebony	22,090	22,090
Studio Grand	5	4	Polished Ebony	20,890	20,890
	5	4	Satin Mahogany	22,790	22,790

^{*}See pricing explanation on page 194.

Feet	Inches	Description	MSRP*	SMP*
1 (con	tinued)			
5	4	Polished Mahogany	21,590	21,590
5	10	Satin Ebony	26,390	26,390
5	10	Polished Ebony	25,190	25,190
5	10	Satin Mahogany	27,090	27,090
5	10	Polished Mahogany	25,890	25,890
7		Satin Ebony	41,290	41,290
7		Polished Ebony	39,790	39,790
9		Satin Ebony	62,990	62,990
9		Polished Ebony	60,990	60,990
	5 5 5 5 7 7 9	5 10 5 10 5 10 5 10 7 7 9	1 (continued) 5 4 Polished Mahogany 5 10 Satin Ebony 5 10 Polished Ebony 5 10 Satin Mahogany 5 10 Polished Mahogany 7 Satin Ebony 7 Polished Ebony 9 Satin Ebony	I (continued) 5 4 Polished Mahogany 21,590 5 10 Satin Ebony 26,390 5 10 Polished Ebony 25,190 5 10 Satin Mahogany 27,090 5 10 Polished Mahogany 25,890 7 Satin Ebony 41,290 7 Polished Ebony 39,790 9 Satin Ebony 62,990

DISKLAVIER — see Yamaha; see also Bösendorfer

ESSEX

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

Verticals

EUP-108C		42	Continental Polished Ebony	5,690	5,690
EUP-111E		44	Polished Ebony	6,390	6,390
EUP-111E		44	Polished Sapele Mahogany	6,790	6,540
EUP-116E		45	Polished Ebony	7,190	6,760
EUP-116E		45	Polished Sapele Mahogany	7,490	6,860
EUP-116E		45	Polished White	7,790	7,100
EUP-116CT		45	Contemporary Satin Lustre Sapele Mahogany	8,250	7,600
EUP-116QA		45	Queen Anne Satin Lustre Cherry	7,950	7,740
EUP-116EC		45	English Country Satin Lustre Walnut	7,950	7,560
EUP-116FF		45	Formal French Satin Lustre Brown Cherry	8,250	7,780
EUP-123E		48	Satin Ebony w/Chrome Hardware	8,650	7,980
EUP-123E		48	Polished Ebony	7,690	7,300
EUP-123E		48	Polished Ebony w/Chrome Hardware	7,790	7,400
EUP-123E		48	Polished Sapele Mahogany	8,750	7,800
EUP-123FL		48	Empire Satin Walnut	8,850	7,860
EUP-123FL		48	Empire Satin Sapele Mahogany	8,850	8,080
EUP-123S		48	Institutional Studio Polished Ebony	7,690	7,620
Grands					
EGP-155	5	1	Satin and Polished Ebony	13,900	13,900
EGP-155	5	1	Polished Sapele Mahogany	15,250	15,250
EGP-155	5	1	Satin Lustre Sapele Mahogany	15,600	15,600
EGP-155	5	1	Polished White	18,600	16,480
EGP-155F	5	1	French Provincial Satin Lustre Brown Cherry	17,700	17,620
EGP-173	5	8	Satin Lustre and Polished Ebony	17,620	17,620

ESTONIA

The Estonia factory can make custom-designed finishes with exotic veneers; prices upon request. Prices here include Jansen adjustable artist benches.

Grands

L168	5	6	Satin and Polished Ebony	43,800	41,538
L168	5	6	Satin and Polished Mahogany/Walnut	47,380	44,641
L168	5	6	Polished Kewazinga Bubinga	51,395	48,564
L168	5	6	Polished Pyramid Mahogany	56,873	53,814
L168	5	6	Satin and Polished White	49,880	46,927
L168	5	6	Hidden Beauty Polished Ebony w/Bubinga	48,473	45,603
L190	6	3	Satin and Polished Ebony	53,789	50,496
L190	6	3	Satin and Polished Mahogany/Walnut	57,298	54,212
L190	6	3	Polished Pyramid Mahogany	68,400	63,318
L190	6	3	Polished Santos Rosewood	68,400	63,146
L190	6	3	Polished Kewazinga Bubinga	61,688	58,256

^{*}See pricing explanation on page 194.

Model	Feet	Inches	Description	MSRP*	SMP*
ESTONIA (continue	d)			
L190	6	3	Hidden Beauty Polished Ebony w/Bubinga	56,570	53,399
L210	6	10	Satin and Polished Ebony	63,300	60,796
L210	6	10	Satin and Polished Mahogany/Walnut/White	69,630	66,778
L210	6	10	Polished Pyramid Mahogany	79,125	75,746
L210	6	10	Polished Kewazinga Bubinga	74,700	71,560
L210	6	10	Hidden Beauty Polished Ebony w/Bubinga	67,230	64,293
L225	7	4	Satin and Polished Ebony	79,689	74,297
L225	7	4	Satin and Polished Mahogany/Walnut/White	85,727	80,667
L225	7	4	Polished Pyramid Mahogany	95,156	90,710
L225	7	4	Polished Kewazinga Bubinga	86,100	83,597
L225	7	4	Hidden Beauty Polished Ebony w/Bubinga	84,635	79,451
L274	9		Satin and Polished Ebony	127,140	112,678
L274	9		Satin and Polished Mahogany/Walnut	139,430	124,475
L274	9		Polished Pyramid Mahogany	144,254	137,514
L274	9		Satin and Polished White	131,177	119,193

FANDRICH & SONS

These are the prices on the Fandrich & Sons website. Other finishes available at additional cost. See website for details.

Verticals

118-S		46	Polished Ebony with Nickel Trim	5,640	5,640
122		48	Polished Ebony	6,640	6,640
122		48	Polished Mahogany/Walnut/Cherry	6,840	6,840
131-V		52	Polished Ebony	12,890	12,890
Grands					
170-S	5	7	Polished Ebony	18,890	18,890
188-S	6	2	Polished Ebony	22,490	22,490
212-S	7		Polished Ebony	34,990	34,990
212-E	7		Polished Ebony	36,490	36,490

FAZIOLI

Fazioli is willing to make custom-designed cases with exotic veneers, marquetry, and other embellishments. Prices on request to Fazioli. Euro = \$1.075

Grands

F156	5	2	Satin and Polished Ebony	120,000	113,951
F156	5	2	Satin and Polished White/Red	138,000	130,609
F156	5	2	Satin and Polished Walnut/Cherry/Mahogany	150,000	141,414
F156	5	2	Satin and Polished Pyramid Mahogany/Macassar	168,000	157,846
F156	5	2	Satin and Polished Briers: Mahogany/California Walnut/Sequoia	180,000	168,651
F183	6		Satin and Polished Ebony	122,900	116,602
F183	6		Satin and Polished White/Red	141,300	133,260
F183	6		Satin and Polished Walnut/Cherry/Mahogany	153,600	144,515
F183	6		Satin and Polished Pyramid Mahogany/Macassar	172,100	161,173
F183	6		Satin and Polished Briers: Mahogany/California Walnut/Sequoia	184,300	172,428
F212	7		Satin and Polished Ebony	137,300	130,458
F212	7		Satin and Polished White/Red	151,000	142,839
F212	7		Satin and Polished Walnut/Cherry/Mahogany	164,800	155,220
F212	7		Satin and Polished Pyramid Mahogany/Macassar	178,500	167,600
F212	7		Satin and Polished Briers: Mahogany/California Walnut/Sequoia	192,200	179,981
F228	7	6	Satin and Polished Ebony	153,600	146,415
F228	7	6	Satin and Polished White/Red	169,000	160,372
F228	7	6	Satin and Polished Walnut/Cherry/Mahogany	184,300	174,553
F228	7	6	Satin and Polished Pyramid Mahogany/Macassar	199,700	188,510
F228	7	6	Satin and Polished Briers: Mahogany/California Walnut/Sequoia	215,000	202,466
F278	9	2	Satin and Polished Ebony	205,400	193,162
F278	9	2	Satin and Polished White/Red	225,900	211,846
F278	9	2	Satin and Polished Walnut/Cherry/Mahogany	246,500	230,529

^{*}See pricing explanation on page 194.

Model	Feet	Inches	Description	MSRP*	SMP*
FAZIOLI (conti	inued)				
F278	9	2	Satin and Polished Pyramid Mahogany/Macassar	267,000	249,213
F278	9	2	Satin and Polished Briers: Mahogany/California Walnut/Sequoia	287,600	267,897
F308	10	2	Satin and Polished Ebony	224,600	207,418
F308	10	2	Satin and Polished White/Red	247,100	227,677
F308	10	2	Satin and Polished Walnut/Cherry/Mahogany	269,500	247,712
F308	10	2	Satin and Polished Pyramid Mahogany/Macassar	292,000	267,521
F308	10	2	Satin and Polished Briers: Mahogany/California Walnut/Sequoia	314,400	287,330
FEURICH					
Verticals					
115 Premiere		45	Polished Ebony	8,800	6,172
122 Universal		48	Polished Ebony	9,800	7,055
123 Vienna		48.5	Polished Ebony	15,500	15,128
			•		
133 Concert		52	Polished Ebony	12,500	9,956
Grands	-	4	D.P. L. d.Fl.	10.500	45.000
162 Dynamic I	5	4	Polished Ebony	19,500	15,380
179 Dynamic II	5	10	Polished Ebony	23,500	18,407
218 Concert I	7	2	Polished Ebony	37,900	31,021
Grands			Harmonic Pedal, add	3,000	1,892
Prices do not in Verticals	nclude l				
116 C		46	Chippendale Satin Mahogany		26,975
116 C		46	Chippendale Satin Walnut		28,354
116 D		46	Continental Polished Ebony		20,457
116 D		46	Continental Satin Mahogany/Beech/Alder		20,959
116 D		46	Continental Polished Mahogany		20,959
116 D		46	Continental Satin and Polished Walnut/Oak/Cherry		22,388
116 D		46	Continental Polished White		21,961
116 E		46	Polished Ebony		23,917
116 E		46	Satin and Polished Mahogany/Beech/Alder		24,443
116 E		46	Satin and Polished Walnut/Oak/Cherry		25,822
116 E		46	Polished White		25,446
125 F		49	Polished Ebony		27,602
125 G		49	Polished Ebony		27,025
125 G		49	Satin Mahogany/Beech/Alder		27,602
125 G		49	Polished Mahogany/Beech/Alder		27,627
125 G		49	Satin and Polished Walnut/Oak/Cherry		29,583
125 G		49	Polished White		28,555
134 K		53	Polished Ebony		40,939
Grands					
170	5	8	Polished Ebony		56,307
170	5	8	Satin and Polished Walnut		59,717
170	5	8	Satin and Polished Mahogany		57,511
170	5	8	Polished White		59,742
170	5	8	Classik Polished Ebony		64,731
170	5	8	Classik Polished Walnut		74,458
170	5	8	Classik Polished Mahogany		69,093
170	5	8	Classik Polished White		68,617
190	6	4	Polished Ebony		63,578
190		4	Satin and Polished Walnut		
	6				66,812
190	6	4	Satin and Polished Mahogany		64,656
190	6	4	Polished White		66,761

^{*}See pricing explanation on page 194.

Model	Feet	Inches	Description	MSRP*	SMP*
FÖRSTER, A	<i>NUGUST</i>	(continued)			
190	6	4	Classik Polished Ebony		71,800
190	6	4	Classik Polished Mahogany		76,263
190	6	4	Classik Polished Walnut		81,553
190	6	4	Classik Polished White		75,711
215	7	2	Polished Ebony		76,338
275	9	1	Polished Ebony		138,136
GEYER, A.					
Verticals					
GU 115		45	Polished Ebony	6,185	4,990
GU 115		45	Polished Mahogany/Walnut	6,685	5,290
GU 115		45	Polished White	6,485	5,190
GU 123		47	Polished Ebony	6,785	5,390
GU 123		47	Polished Mahogany/Walnut	7,235	5,690
GU 123		47	Polished White	7,085	5,590
GU 133		52	Polished Ebony	7,685	5,990
GU 133		52	Polished Mahogany/Walnut	8,285	6,390
GU 133		52	Polished White	7,985	6,190
Grands		02	Tollottod Willie	7,000	0,100
GG 150	4	11	Polished Ebony	12,785	9,590
GG 150	4	11	Polished Mahogany/Walnut	13,685	9,990
GG 150	4	11	Polished White	13,235	9,870
GG 160	5	3	Polished Ebony	14,535	10,590
GG 160	5	3	Polished Mahogany/Walnut	15,285	10,990
GG 160	5	3	Polished White	15,035	10,890
GG 170	5	7	Polished Ebony	16,385	11,790
GG 170	5	7	Polished Mahogany/Walnut	16,715	12,010
GG 170	5	7	Polished White	16,835	12,010
GG 170 GG 185	6	1			
GG 185	6	1	Polished Bony	18,785	13,390
GG 185	6	1	Polished Mahogany/Walnut Polished White	19,585	13,990
GG 230	7	7		19,385	13,790
GG 230	1	1	Polished Ebony	29,225	25,990
GROTRIAN Prices do not		bench. Oth	er woods available on request. Euro = \$1.10		
Studio 110		43.5	Satin Ebony	16,373	15,691
Studio 110		43.5	Satin White	16,675	15,980
Friedrich Gro	trian	43.5	Polished Ebony	17,119	16,406
Friedrich Gro		43.5	Open-pore Walnut	17,119	16,406
Cristal	ulali	44	Continental Satin Ebony	22,087	21,167
		44	Continental Salin Ebony		
Cristal				23,066	22,105
Cristal		44	Continental Open-pore Walnut	23,066	22,105
Cristal		44	Continental Polished Walnut/White	25,272	24,219
Contour		45	Polished Ebony	24,782	23,750
Contour		45	Open-pore Walnut	24,782	23,750
Contour		45	Polished Walnut/White	27,150	26,018
Canto		45	Satin Ebony	24,618	23,593
Canto		45	Polished Ebony	25,762	24,688
Canto		45	Open-pore Walnut	25,762	24,688
Carat		45.5	Polished Ebony	29,028	27,819
Carat		45.5	Open-pore Walnut	29,028	27,819
Carat		45.5	Polished Walnut/White	31,562	30,247
College		48	Satin Ebony	31,378	30,070
College		48	Polished Ebony	33,013	31,639

^{*}See pricing explanation on page 194.

Model	Feet	Inches	Description	MSRP*	SMP*
GROTRIAN (c	ontinu	ed)			
College		48	Open-pore Walnut	33,013	31,639
Classic		49	Polished Ebony	39,220	37,587
Classic		49	Open-pore Walnut	39,220	37,587
Classic		49	Polished Walnut/White	42,241	40,480
Concertino		52	Polished Ebony	49,386	47,329
Concertino		52	Open-pore Walnut	49,386	47,329
Verticals			Chippendale/Rococo/Empire, add	1,411	1,352
Verticals			Sostenuto, add	1,699	1,628
Wilhelm Grotr	ian Ver	rticals			
WG-18			Polished Ebony		9,998
WG-23			Polished Ebony		11,198
WG-26			Polished Ebony		12,198
WG-32			Polished Ebony		13,798
Wilhelm Grotr	ian Stu	dio Vertic	als		
WGS-116			Polished Ebony		6,798
WGS-120			Polished Ebony		7,598
WGS-122			Polished Ebony		8,398
Grotrian Gran	ds				
Chambre	5	5	Satin Ebony	72,544	72,544
Chambre	5	5	Polished Ebony	80,058	80,058
Chambre	5	5	Open-pore Walnut	80,058	80,058
Chambre	5	5	Polished Walnut/White	87,736	87,736
Cabinet	6	3	Satin Ebony	84,306	84,306
Cabinet	6	3	Polished Ebony	93,946	93,946
Cabinet	6	3	Studio Lacquer Ebony	65,310	65,310
Cabinet	6	3	Open-pore Walnut	93,946	93,946
Cabinet	6	3	Polished Walnut/White	102,931	102,931
Charis	6	10	Satin Ebony	99,377	99,377
Charis	6	10	Polished Ebony	108,524	108,524
Charis	6	10	Studio Lacquer Ebony	79,764	79,764
Charis	6	10	Open-pore Walnut	108,524	108,524
Concert	7	4	Satin Ebony	118,354	118,354
Concert	7	4	Polished Ebony	134,001	134,001
Concert	7	4	Open-pore Walnut	134,001	134,001
Concert Royal	9	1	Polished Ebony	179,914	179,914
Concert Royal	9	1	Open-pore Walnut	179,914	179,914
Grands			Chippendale/Empire, add	4,896	4,896
Grands			CS Style, add	5,472	5,472
Grands			Rococo, add	16,416	16,416
Wilhelm Grotr	ian Gra	ands		,	
WG-170	5	7	Polished Ebony		30,800
WG-188	6	2	Polished Ebony		38,980
WG-100 WG-211	6	11	Polished Ebony		56,980
Wilhelm Grotr			-		30,000
WGS-152	5	GIO GIAIIO	Polished Ebony		16,398
WGS-152 WGS-165		5	Polished Ebony		
VVG5-105	5	5	Folished Epony		19,398

^{*}See pricing explanation on page 194.

Model	Feet Inches	Description	MSRP*	SMP*
HAESSLER				
Prices do no	ot include bench.			
Verticals				
H 115	45	Polished Ebony	21,911	20,919
H 115	45	Satin Mahogany/Walnut	22,360	21,327
H 115	45	Polished Cherry	37,649	35,226
H 115	45	Satin Oak/Beech	23,258	22,144
H 115	45	Polished White	22,809	21,735
H 115	45	Polished Mahogany w/Vavona Inlay	37,649	35,226
H 115	45	Polished Cherry and Yew	37,649	35,226
H 118	47	Polished Ebony	24,156	22,960
H 118	47	Satin Mahogany/Walnut	25,279	23,981
H 118	47	Polished Mahogany/Walnut	29,320	27,655
H 118	47	Satin Cherry	25,728	24,389
H 118	47	Polished Cherry	29,769	28,063
H 118	47	Satin Oak/Beech	23,977	22,797
H 118	47	Polished White	26,401	25,001
H 118	47	Polished Bubinga	29,993	28,266
H 118	47	Satin Mahogany w/Vavona Inlay	27,075	25,614
H 118	47	Polished Mahogany w/Vavona Inlay	30,667	28,879
H 118	47	Polished Burl Walnut	30,442	28,675
H 118	47	Satin Burl Walnut w/Walnut Inlay	27,075	25,614
H 118 H 118	47 47	Polished Burl Walnut w/Walnut Inlay	30,667	28,879 25,695
H 118	47	Satin Cherry and Yew	27,165	
п 116 Н 124	49	Polished Cherry and Yew Polished Ebony	30,667 26,401	28,879 25,001
п 124 Н 124	49	Satin Mahogany/Walnut	27,389	25,899
H 124	49	Polished Mahogany/Walnut	31,565	29,695
H 124	49	Satin Cherry	27,524	26,022
H 124	49	Polished Cherry	32,014	30,104
H 124	49	Satin Oak/Beech	27,299	25,817
H 124	49	Polished White	28,646	27,042
H 124	49	Polished Bubinga	32,238	30,307
H 124	49	Polished Pyramid Mahogany	35,696	33,451
H 124	49	Satin Mahogany w/Vavona Inlay	28,871	27,246
H 124	49	Polished Mahogany w/Vavona Inlay	34,034	31,940
H 124	49	Polished Burl Walnut	35,247	33,043
H 124	49	Satin Burl Walnut w/Walnut Inlay	28,871	27,246
H 124	49	Polished Burl Walnut w/Walnut Inlay	34,034	31,940
H 124	49	Satin Cherry and Yew	28,871	27,246
H 124	49	Polished Cherry and Yew	35,247	33,043
K 124	49	Polished Ebony	28,557	26,961
K 124	49	Satin Mahogany/Walnut	29,544	27,858
K 124	49	Polished Mahogany/Walnut	33,720	31,655
K 124	49	Satin Cherry	29,679	27,981
K 124	49	Polished Cherry	34,169	32,063
K 124	49	Satin Oak/Beech	29,455	27,777
K 124	49	Polished White	30,802	29,002
K 124	49	Polished Bubinga	34,394	32,267
K 124	49	Polished Pyramid Mahogany	37,851	35,410
K 124	49 49	Satin Mahogany w/Vayona Inlay	31,026	29,205
K 124 K 124		Polished Mahogany w/Vavona Inlay Polished Burl Walnut	36,190	33,900
K 124 K 124	49 49	Satin Burl Walnut w/Walnut Inlay	37,402 31,026	35,002 29,205
K 124 K 124	49	Polished Burl Walnut w/Walnut Inlay	36,190	33,900
K 124 K 124	49	Satin Cherry and Yew	31,026	29,205
K 124 K 124	49	Polished Cherry and Yew	37,402	35,002
H 132	52	Polished Ebony	29,544	27,858
H 132	52	Satin Mahogany/Walnut	29,993	28,266
1102	32	Jami Manogary, Walliat	23,330	20,200

1922 52 Salin Cherry 31,340 29,491 1923 52 Polished Cherry 34,932 32,756 1924 52 Polished White 31,788 29,899 1925 52 Polished Bubinga 35,881 33,165 1926 52 Polished Pyramid Mahogany 38,300 38,818 1922 52 Polished Marcogany Wavona Inlay 32,912 30,920 1923 52 Salin Mahogany Wavona Inlay 37,402 35,002 1925 52 Salin Mahogany Wavona Inlay 37,402 35,002 1926 52 Salin Walnut Wavona Inlay 37,402 35,002 1926 52 Salin Walnut Wavona Inlay 39,912 30,920 1928 52 Salin Walnut Wavona Inlay 39,912 30,920 1928 52 Salin Walnut Wavona Inlay 39,912 30,920 1928 52 Salin Cherry and Yew 39,912 30,920 1929 52 Salin Cherry and Yew 39,912 30,920 1920 52 Polished Ebony 35,553 30,594 1921 52 Polished Ebony 35,553 30,594 1922 52 Polished Cherry and Yew 37,402 35,002 1923 52 Salin Cherry and Yew 37,402 35,002 1924 52 Salin Cherry 37,941 35,922 1925 52 Polished Cherry 37,941 35,922 1926 52 Polished Cherry 37,941 35,922 1921 52 Polished Cherry 37,941 35,922 1922 52 Polished Cherry 37,941 35,923 1923 52 Polished Cherry 37,941 35,923 1924 52 Polished Dubinga 38,390 38,900 1925 52 Polished Mahogany Wavona Inlay 41,410 37,736 1922 52 Polished Bubinga 38,390 38,900 1923 52 Polished Bubinga 38,390 38,900 1924 52 Polished Mahogany Wavona Inlay 40,410 37,736 1925 52 Polished Mahogany Wavona Inlay 40,410 37,736 1926 52 Polished Mahogany Wavona Inlay 40,410 37,736 1927 53 8 Polished Mahogany Wavona Inlay 40,410 37,736 1927 54 8 Polished Mahogany Wavona Inlay 40,410 37,7	Model	Feet Inches	Description	MSRP*	SMP*
1912 52	HAESSLER	(continued)			
192 52 Polished Cherry 34,932 32,756 192 52 Polished White 31,788 29,899 193 52 Polished Bubinga 35,818 33,185 193 52 Polished Pyramid Mehogany 38,300 38,818 193 52 Polished Pyramid Mehogany 38,300 38,818 193 52 Polished Buringany Waveona Inlay 32,912 30,900 193 52 Polished Buri Walnut 37,402 35,002 194 52 52 Satin Buri Walnut 37,402 35,002 194 52 52 Polished Buri Walnut 40,401 37,402 35,002 194 52 52 Polished Buri Walnut 40,401 37,402 35,002 194 52 52 Polished Cherry and Yew 37,402 35,003 195 52 52 Polished Cherry 34,349 32,253 195 52 52 Polished Cherry 34,349 32,254 195 52 52 Polished Manogany Walnut 39,002 31,002 195 52 52 Polished Manogany Walnut 37,798 32,635 195 52 Polished Cherry 34,349 32,256 195 52 Polished Cherry 34,349 32,256 195 52 Polished Mille 34,798 32,635 195 52 Polished White 34,798 32,635 195 52 Polished Forey 34,349 32,256 195 52 Polished Forey 34,349 35,900 195 52 Polished Forey 34,349 35,900 195 52 Polished Forey 34,349 35,900 195 52 Polished Buri Walnut 34,798 35,900 195 52 Polished Buri Walnut 35,900 36,900 195 52 Polished Buri Walnut 36,900 36,900 195 53 Polished Buri Walnut 36,900 36,900 195 54 Polished Buri Walnut 36,900 36,900 195 54 Polished Buri Walnut 36,900 36,900 195 54 Polished Buri Waln	H 132	52	Polished Mahogany/Walnut	34,483	32,348
192 52 Polished Cherry 34,932 32,756 192 52 Polished White 31,788 29,899 193 52 Polished Bubinga 35,818 33,185 193 52 Polished Pyramid Mehogany 38,300 38,818 193 52 Polished Pyramid Mehogany 38,300 38,818 193 52 Polished Buringany Waveona Inlay 32,912 30,900 193 52 Polished Buri Walnut 37,402 35,002 194 52 52 Satin Buri Walnut 37,402 35,002 194 52 52 Polished Buri Walnut 40,401 37,402 35,002 194 52 52 Polished Buri Walnut 40,401 37,402 35,002 194 52 52 Polished Cherry and Yew 37,402 35,003 195 52 52 Polished Cherry 34,349 32,253 195 52 52 Polished Cherry 34,349 32,254 195 52 52 Polished Manogany Walnut 39,002 31,002 195 52 52 Polished Manogany Walnut 37,798 32,635 195 52 Polished Cherry 34,349 32,256 195 52 Polished Cherry 34,349 32,256 195 52 Polished Mille 34,798 32,635 195 52 Polished White 34,798 32,635 195 52 Polished Forey 34,349 32,256 195 52 Polished Forey 34,349 35,900 195 52 Polished Forey 34,349 35,900 195 52 Polished Forey 34,349 35,900 195 52 Polished Buri Walnut 34,798 35,900 195 52 Polished Buri Walnut 35,900 36,900 195 52 Polished Buri Walnut 36,900 36,900 195 53 Polished Buri Walnut 36,900 36,900 195 54 Polished Buri Walnut 36,900 36,900 195 54 Polished Buri Walnut 36,900 36,900 195 54 Polished Buri Waln	H 132	52		31,340	29,491
1922 52 Polished Bubinga \$5,381 \$33,165 \$35,002 \$25,002 \$25,002 \$25,002 \$35,	H 132	52	Polished Cherry	34,932	
1912 52	H 132	52	•		
1922 52 Palisander Rosewood 37,402 35,002 35,	H 132		Polished Bubinga		
192 52	H 132		<u> </u>		
1132 52 Satin Mahogany w/Avoona Inlay 32,912 30,920 1132 52 Polished Burt Walnut 37,402 35,002 1132 52 Polished Burt Walnut w/Walnut Inlay 32,912 30,920 1132 52 Satin Burt Walnut w/Walnut Inlay 37,402 35,002 1132 52 Satin Cherry and Yew 32,912 30,920 1132 52 Satin Cherry and Yew 37,402 35,002 1132 52 Polished Eborny 32,553 30,502 1132 52 Polished Borny 32,553 30,502 1132 52 Polished Borny 32,553 30,502 1132 52 Polished Mahogany/Walnut 37,492 35,602 1132 52 Polished Mahogany 41,404 37,492 35,602 1132 52 Polished Mahogany 41,404 37,494 32,265 1132 52 Polished Mahogany 41,404 37,736 41,24 42,24 42,24	H 132		Polished Pyramid Mahogany		
132 52	H 132				,
132 52	H 132				
132 52 Satin Burl Walnut will hally 32,912 30,920 132 52 Polished Burl Walnut will hally 37,402 35,002 132 52 Satin Cherry and Yew 32,912 30,920 132 52 Polished Ebony 32,553 30,594 132 52 Polished Ebony 32,553 30,594 132 52 Satin Mahogany/Walnut 33,002 31,002 31,002 131,0	H 132				,
1132 52 Polished Burl Walnut w/Walnut Inlay 37,402 35,002 1132 52 Satin Cherry and Yew 32,912 30,002 132 52 Polished Cherry and Yew 37,402 35,002 132 52 Polished Cherry and Yew 33,002 31,002 132 52 Satin Manogany,Walnut 37,492 35,084 132 52 Satin Manogany,Walnut 37,492 35,084 132 52 Satin Cherry 34,349 32,265 132 52 Polished Cherry 37,941 35,492 132 52 Polished Bubinga 38,390 35,900 132 52 Polished Pyramid Mahogany 41,308 38,539 132 52 Polished Mahogany, Wavona Inlay 35,920 33,655 132 52 Polished Mahogany, Wavona Inlay 40,410 37,736 132 52 Polished Mahogany, Wavona Inlay 40,410 37,736 132 52 Satin Mahogany, Wavona Inlay	_				
132 52 Satin Cherry and Yew 3.2.912 30.920 132 52 Polished Cherry and Yew 3.7.402 35.002 132 52 Polished Ebony 3.2.553 30.594 132 52 Satin Mahogany/Walnut 37.492 35.003 13.002	H 132		•		
132 52					
192			•		
132 52 Satin Mahogany/Walnut 33,002 31,002 132 52 Polished Mahogany/Walnut 37,492 35,084 132 52 Satin Cherry 34,349 32,226 132 52 Polished White 34,798 32,635 132 52 Polished Bubinga 38,390 35,900 132 52 Polished Bubinga 38,390 35,900 132 52 Polished Pyramid Mahogany 41,308 38,563 132 52 Polished Mahogany w/Vavona Inlay 35,920 33,655 132 52 Polished Mahogany w/Vavona Inlay 40,410 37,736 132 52 Polished Mahogany w/Vavona Inlay 40,410 37,736 132 52 Polished Burl Walnut Walnut Inlay 35,920 33,655 132 52 Polished Burl Walnut Walnut Inlay 40,410 37,736 132 52 Satin Cherry and Yew 35,920 33,655 132 52 Satin Cherry and Yew			•		
132 52 Polished Mahogany/Walnut 37,492 35,084 132 52 Satin Cherry 34,349 32,226 132 52 Polished White 34,798 32,635 132 52 Polished Bubinga 38,890 35,900 132 52 Polished Bubinga 38,890 35,900 132 52 Polished Greenwood 40,410 37,365 132 52 Polished Greenwood 40,410 37,365 132 52 Polished Manogany w/Vavona Inlay 40,410 37,365 132 52 Polished Burd Walnut 40,410 37,736 132 52 Polished Burd Walnut w/Walnut Inlay 35,920 33,655 132 52 Satin Cherry and Yew 40,410 37,736 132 52 Satin Cherry and Yew 40,410 37,736 132 52 Polished Cherry and Yew 40,410 37,736 132 52 Polished Cherry and Yew 40,410 37,736			· · · · · · · · · · · · · · · · · · ·		
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132 52 Polished Cherry 37,941 35,28 132 52 Polished White 34,798 32,635 132 52 Polished Bubinga 38,390 35,900 132 52 Palisander Rosewood 40,410 37,736 132 52 Polished Pyramid Mahogany 41,410 37,365 132 52 Polished Burl Walnut 40,410 37,736 132 52 Polished Burl Walnut Inlay 40,410 37,736 132 52 Polished Burl Walnut Inlay 55,920 33,655 132 52 Satin Burl Walnut Walnut Inlay 40,410 37,736 132 52 Satin Cherry and Yew 40,410 37,736 132 52 Satin Cherry and Yew 40,410 37,736 132 52 Satin Cherry and Yew 40,410 37,736 132 53 Satin Cherry and Yew 40,410 37,736 132 53 Satin Cherry and Yew 40,410 37,736			_ ·		
132 52 Polished White 34,788 32,635 132 52 Polished Bubinga 38,390 35,900 132 52 Polished Pyramid Mahogany 41,308 38,553 132 52 Polished Pyramid Mahogany 41,308 38,553 132 52 Polished Mahogany w/Vavona Inlay 40,410 37,736 132 52 Polished Burl Walnut 40,410 37,736 132 52 Polished Burl Walnut w/Walnut Inlay 35,920 33,655 132 52 Polished Burl Walnut w/Walnut Inlay 40,410 37,736 132 52 Satin Cherry and Yew 35,920 33,655 132 52 Polished Cherry and Yew 40,410 37,736 132 52 Polished Cherry and Yew 75,960 70,055 132 52 Polished Mahogany/Walnut 81,657 75,234 1175 5 8 Satin Mahogany/Walnut 89,330 82,209 1175 5 8			•		
132 52 Polished Bubinga 38,390 35,900 132 52 Palisander Rosewood 40,410 37,736 132 52 Polished Pyramid Mahogany 41,308 38,553 132 52 Satin Mahogany w/Vavona Inlay 35,920 33,655 132 52 Polished Burl Walnut 40,410 37,736 132 52 Polished Burl Walnut Inlay 35,920 33,655 132 52 Satin Burl Walnut Walnut Inlay 35,920 33,655 132 52 Polished Burl Walnut Walnut Inlay 35,920 33,655 132 52 Polished Cherry and Yew 40,410 37,736 132 52 Polished Cherry and Yew 40,410 37,736 132 52 Satin Cherry and Yew 40,410 37,736 134 55 Satin Mahogany/Walnut 81,657 75,960 70,55 1475 5 8 Polished Mahogany/Walnut 81,657 75,234 1175 5			•		
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132 52 Polished Pyramid Mahogany 41,308 38,553 132 52 Satin Mahogany wVavona Inlay 35,920 33,655 132 52 Polished Mahogany wVavona Inlay 40,410 37,736 132 52 Polished Burl Walnut Inlay 35,920 33,655 132 52 Satin Burl Walnut wWalnut Inlay 40,410 37,736 132 52 Satin Cherry and Yew 35,920 33,655 132 53 Satin Cherry and Yew 31,657 75,294 175 5 8 Satin Mahogany,Walnut 81,657 75,294 175 5 8 Polished Bubinga 89,330 82,209 175 5 8 Polished Cherry 91,420 84,109 175 5 <t< td=""><td></td><td>-</td><td><u> </u></td><td>,</td><td></td></t<>		-	<u> </u>	,	
132 52 Satin Mahogany w/Vavona Ínlay 35,920 33,655 132 52 Polished Mahogany w/Vavona Ínlay 40,410 37,736 132 52 Polished Burl Walnut 40,410 37,736 132 52 Satin Burl Walnut w/Walnut Inlay 35,920 33,655 132 52 Polished Burl Walnut w/Walnut Inlay 35,920 33,655 132 52 Polished Cherry and Yew 35,920 33,655 132 52 Polished Cherry and Yew 35,920 33,655 132 52 Polished Cherry and Yew 40,410 37,736 riands 175 5 8 Satin Cherry and Yew 40,410 37,736 175 5 8 Satin Cherry 89,330 82,209 175 5 8 Satin Cherry 91,420 84,109 175 5 8 Polished White 81,277 74,888 175 5 8 Polished White 81,277	K 132				
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132 52 Satin Burl Walnut w/Walnut Inlay 35,920 33,655 132 52 Polished Burl Walnut w/Walnut Inlay 40,410 37,736 132 52 Satin Cherry and Yew 35,920 33,655 132 52 Polished Cherry and Yew 40,410 37,736 Intractions of the colspan="2">Intraction of th	K 132	52		40,410	37,736
132 52 Polished Burl Walnut w/Walnut İnlay 40,410 37,736 132 52 Satin Cherry and Yew 35,920 33,655 132 52 Polished Cherry and Yew 40,400 37,736 trands trands 175 5 8 Polished Ebony 75,960 70,055 175 5 8 Satin Mahogany/Walnut 81,657 75,234 175 5 8 Polished Mahogany/Walnut 89,330 82,209 175 5 8 Polished Cherry 80,974 74,613 175 5 8 Polished Cherry 91,420 84,109 175 5 8 Polished Cherry 91,420 84,109 175 5 8 Polished Mire 81,277 74,888 175 5 8 Polished Mire 93,091 89,066 175 5 8 Polished Pyramid Mahogany 102,283 93,985 175 </td <td>K 132</td> <td>52</td> <td>Polished Burl Walnut</td> <td>40,410</td> <td>37,736</td>	K 132	52	Polished Burl Walnut	40,410	37,736
132 52 Satin Cherry and Yew 35,920 33,655 132 52 Polished Cherry and Yew 40,410 37,736 irands IT 5 8 Polished Ebony 75,960 70,055 1175 5 8 Satin Mahogany/Walnut 89,330 82,209 1175 5 8 Polished Mahogany/Walnut 89,330 82,209 1175 5 8 Polished Cherry 80,974 74,613 1175 5 8 Polished Cherry 91,420 84,109 1175 5 8 Polished Cherry 91,420 84,109 1175 5 8 Polished White 81,277 74,888 1175 5 8 Polished Bubringa 93,091 85,628 1175 5 8 Polished Bubringa 97,687 89,806 1175 5 8 Polished Bubringa 91,702 89,766 19,705 1175 5 8 Pol	K 132	52	Satin Burl Walnut w/Walnut Inlay	35,920	33,655
132 52 Polished Cherry and Yew 40,410 37,736 irands Int75 5 8 Polished Ebony 75,960 70,055 1175 5 8 Polished Mahogany/Walnut 89,330 82,209 1175 5 8 Polished Mahogany/Walnut 89,330 82,209 1175 5 8 Polished Cherry 80,974 74,613 1175 5 8 Polished White 81,277 74,888 1175 5 8 Polished White 81,277 74,888 1175 5 8 Polished White 93,091 85,628 1175 5 8 Polished Pyramid Mahogany 92,091 85,628 1175 5 8 Polished Pyramid Mahogany 102,223 39,985 1175 5 8 Polished Mahogany W/Vavona Inlay 111,893 102,721 1175 5 8 Polished Burl Walnut 99,776 91,705 1175	K 132	52	Polished Burl Walnut w/Walnut Inlay	40,410	37,736
175	K 132	52	Satin Cherry and Yew	35,920	33,655
1175 5 8 Polished Ebony 75,960 70,055 1175 5 8 Satin Mahogany/Walnut 81,657 75,234 1175 5 8 Polished Mahogany/Walnut 89,330 82,209 1175 5 8 Satin Cherry 80,974 74,613 1175 5 8 Polished Cherry 91,420 84,109 1175 5 8 Polished White 81,277 74,888 1175 5 8 Polished Bubinga 93,091 85,628 1175 5 8 Polished Burl Walnud 97,687 89,806 1175 5 8 Polished Mahogany w/Vavona Inlay 111,893 102,721 1175 5 8 Polished Burl Walnut w/Walnut Inlay 111,893 102,721 1175 5 8 Polished Burl Walnut w/Walnut Inlay 111,893 102,721 1175 5 8 Polished Cherry and Yew 106,043 97,403 1175	K 132	52	Polished Cherry and Yew	40,410	37,736
1175 5 8 Polished Ebony 75,960 70,055 1175 5 8 Satin Mahogany/Walnut 81,657 75,234 1175 5 8 Polished Mahogany/Walnut 89,330 82,209 1175 5 8 Satin Cherry 80,974 74,613 1175 5 8 Polished Cherry 91,420 84,109 1175 5 8 Polished White 81,277 74,888 1175 5 8 Polished Bubinga 93,091 85,628 1175 5 8 Polished Burl Walnud 97,687 89,806 1175 5 8 Polished Mahogany w/Vavona Inlay 111,893 102,721 1175 5 8 Polished Burl Walnut w/Walnut Inlay 111,893 102,721 1175 5 8 Polished Burl Walnut w/Walnut Inlay 111,893 102,721 1175 5 8 Polished Cherry and Yew 106,043 97,403 1175	Grands				
175 5 8 Satin Mahogany/Walnut 81,657 75,234 175 5 8 Polished Mahogany/Walnut 89,330 82,209 175 5 8 Satin Cherry 90,974 74,613 175 5 8 Polished Cherry 91,420 84,109 175 5 8 Polished White 81,277 74,888 175 5 8 Polished Bubinga 93,091 85,628 175 5 8 Polished Pyramid Mahogany 102,283 39,985 175 5 8 Polished Pyramid Mahogany 102,283 39,985 175 5 8 Polished Mahogany w/Vavona Inlay 111,893 102,721 175 5 8 Polished Burl Walnut 99,776 91,705 175 5 8 Polished Walnut Walnut Inlay 111,893 102,721 175 5 8 Polished Cherry and Yew 106,043 97,403 175 5	H 175	5 8	Polished Fhony	75 960	70.055
1175 5 8 Polished Mahogany/Walnut 89,330 82,209 1175 5 8 Satin Cherry 80,974 74,613 1175 5 8 Polished Cherry 91,420 84,109 1175 5 8 Polished White 81,277 74,888 1175 5 8 Polished Bubinga 93,091 85,628 1175 5 8 Polished Pyramid Mahogany 102,283 93,985 1175 5 8 Polished Mahogany W/avona Inlay 111,893 102,721 1175 5 8 Polished Burl Walnut 99,776 91,705 1175 5 8 Polished Burl Walnut w/Walnut Inlay 111,893 102,721 1175 5 8 Polished Cherry and Yew 106,043 97,403 1175 5 8 Satin Cherry and Yew 111,893 102,721 1175 5 8 Classic Alexandra Polished Ebony 91,002 83,729 1175 <td>H 175</td> <td></td> <td></td> <td></td> <td></td>	H 175				
175 5 8 Satin Cherry 91,420 84,109 175 5 8 Polished Cherry 91,420 84,109 175 5 8 Polished White 81,277 74,888 175 5 8 Polished Bubinga 93,091 85,628 175 5 8 Palisander Rosewood 97,687 89,806 175 5 8 Polished Pyramid Mahogany 102,283 93,985 175 5 8 Polished Mahogany w/Vavona Inlay 111,893 102,721 175 5 8 Polished Burl Walnut w/Walnut Inlay 111,893 102,721 175 5 8 Polished Burl Walnut w/Walnut Inlay 111,893 102,721 175 5 8 Satin Cherry and Yew 106,043 97,403 175 5 8 Polished Cherry and Yew 111,893 102,721 175 5 8 Classic Alexandra Polished Bunut 104,372 95,884 175 <td></td> <td></td> <td><u> </u></td> <td></td> <td></td>			<u> </u>		
175 5 8 Polished Cherry 91,420 84,109 175 5 8 Polished White 81,277 74,888 175 5 8 Polished Bubinga 93,091 85,628 175 5 8 Polished Pyramid Mahogany 102,283 93,985 175 5 8 Polished Mahogany w/Vavona Inlay 111,893 102,721 175 5 8 Polished Burl Walnut 99,776 91,705 175 5 8 Polished Burl Walnut w/Walnut Inlay 111,893 102,721 175 5 8 Polished Cherry and Yew 106,043 97,403 175 5 8 Polished Cherry and Yew 111,893 102,721 175 5 8 Polished Cherry and Yew 111,893 102,721 175 5 8 Classic Alexandra Polished Ebony 91,002 83,729 175 5 8 Classic Alexandra Burl Walnut 104,372 95,884 <			_ ·		
1175 5 8 Polished White 81,277 74,888 1175 5 8 Polished Bubinga 93,091 85,628 1175 5 8 Palisander Rosewood 97,687 89,806 1175 5 8 Polished Pyramid Mahogany 102,283 93,985 1175 5 8 Polished Mahogany w/Vavona Inlay 111,893 102,721 1175 5 8 Polished Burl Walnut w/Walnut Inlay 111,893 102,721 1175 5 8 Polished Burl Walnut w/Walnut Inlay 111,893 102,721 1175 5 8 Polished Cherry and Yew 106,043 97,403 1175 5 8 Polished Cherry and Yew 111,893 102,721 1175 5 8 Classic Alexandra Polished Ebony 91,002 83,729 1175 5 8 Classic Alexandra Polished Walnut 114,818 105,380 1175 5 8 Classic Alexandra Polished Walnut 114,623			•		
1175 5 8 Polished Bubinga 93,091 85,628 1175 5 8 Palisander Rosewood 97,687 89,806 1175 5 8 Polished Pyramid Mahogany 102,283 93,985 1175 5 8 Polished Burl Walnut 99,776 91,705 1175 5 8 Polished Burl Walnut w/Walnut Inlay 111,893 102,721 1175 5 8 Polished Cherry and Yew 106,043 97,403 1175 5 8 Polished Cherry and Yew 111,893 102,721 1175 5 8 Polished Cherry and Yew 111,893 102,721 1175 5 8 Polished Cherry and Yew 111,893 102,721 1175 5 8 Classic Alexandra Polished Ebony 91,002 83,729 1175 5 8 Classic Alexandra Polished Walnut 104,372 95,884 1175 5 8 Classic Alexandra Polished Walnut 114,818 105,380 </td <td></td> <td></td> <td>•</td> <td>,</td> <td></td>			•	,	
1175 5 8 Palisander Rosewood 97,687 89,806 1175 5 8 Polished Pyramid Mahogany 102,283 93,985 1175 5 8 Polished Mahogany w/Vavona Inlay 111,893 102,721 1175 5 8 Polished Burl Walnut 99,776 91,705 1175 5 8 Polished Burl Walnut w/Walnut Inlay 111,893 102,721 1175 5 8 Polished Cherry and Yew 106,043 97,403 1175 5 8 Polished Cherry and Yew 111,893 102,721 1175 5 8 Polished Cherry and Yew 111,893 102,721 1175 5 8 Classic Alexandra Polished Ebony 91,002 83,729 1175 5 8 Classic Alexandra Polished Walnut 104,372 95,884 1175 5 8 Classic Alexandra Palisander 112,729 103,481 1175 5 8 Classic Alexandra Polished Louis XV Mahogany					
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1175 5 8 Polished Mahogany w/Vavona Inlay 111,893 102,721 1175 5 8 Polished Burl Walnut 99,776 91,705 1175 5 8 Polished Burl Walnut w/Walnut Inlay 111,893 102,721 1175 5 8 Satin Cherry and Yew 106,043 97,403 1175 5 8 Polished Cherry and Yew 111,893 102,721 1175 5 8 Polished Cherry and Yew 111,893 102,721 1175 5 8 Classic Alexandra Polished Ebony 91,002 83,729 1175 5 8 Classic Alexandra Polished Walnut 104,372 95,884 1175 5 8 Classic Alexandra Palisander 112,729 103,481 1175 5 8 Classic Alexandra Palisander 112,729 103,481 1175 5 8 Classic Alexandra Polished Louis XV Mahogany 111,893 102,721 1175 5 8 Satin and Polished Louis XV Mahoga					
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175 5 8 Satin and Polished Louis XV Mahogany 111,893 102,721 175 5 8 Ambassador Palisander 137,881 126,346 175 5 8 Ambassador Walnut 133,703 122,548 186 6 1 Polished Ebony 80,556 74,233 186 6 1 Satin Mahogany/Walnut 86,598 79,725 186 6 1 Polished Mahogany/Walnut 93,927 86,388 186 6 1 Satin Cherry 85,570 78,791 186 6 1 Polished Cherry 96,016 88,287	H 175				
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175 5 8 Ambassador Walnut 133,703 122,548 186 6 1 Polished Ebony 80,556 74,233 186 6 1 Satin Mahogany/Walnut 86,598 79,725 186 6 1 Polished Mahogany/Walnut 93,927 86,388 186 6 1 Satin Cherry 85,570 78,791 186 6 1 Polished Cherry 96,016 88,287	H 175	5 8	Satin and Polished Louis XV Mahogany	111,893	102,721
175 5 8 Ambassador Walnut 133,703 122,548 186 6 1 Polished Ebony 80,556 74,233 186 6 1 Satin Mahogany/Walnut 86,598 79,725 186 6 1 Polished Mahogany/Walnut 93,927 86,388 186 6 1 Satin Cherry 85,570 78,791 186 6 1 Polished Cherry 96,016 88,287	H 175	5 8	Ambassador Palisander	137,881	126,346
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1186 6 1 Polished Cherry 96,016 88,287	H 186				
•	H 186				
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Model	Feet	Inches	Description	MSRP*	SMP*
HAESSLER ((continu	ed)			
H 186	6	1	Polished White	86,195	79,359
H 186	6	1	Polished Bubinga	100,194	92,085
H 186	6	1	Palisander Rosewood	102,283	93,985
H 186	6	1	Polished Pyramid Mahogany	108,550	99,682
l 186	6	1	Polished Mahogany w/Vavona Inlay	116,489	106,899
ł 186	6	1	Polished Burl Walnut	104,372	95,884
1 186	6	1	Polished Burl Walnut w/Walnut Inlay	116,489	106,899
H 186	6	1	Satin Cherry and Yew	101,447	93,225
H 186	6	1	Polished Cherry and Yew	116,489	106,899
H 186	6	1	Classic Alexandra Polished Ebony	95,598	87,907
H 186	6	1	Classic Alexandra Polished Walnut	108,968	100,062
H 186	6	1	Classic Alexandra Burl Walnut	119,414	109,558
H 186	6	1	Classic Alexandra Palisander	117,325	107,659
1186	6	1	Louis XIV Satin White w/Gold	150,416	137,742
1186	6	1	Satin and Polished Louis XV Mahogany	116,489	106,899
1186	6	1	Ambassador Palisander	150,416	137,742
1186	6	1	Ambassador Walnut	146,238	133,944
1210	6	10	Polished Ebony	93,801	86,274
1210	6	10	Satin Mahogany/Walnut	100,836	92,669
1210	6	10	Polished Mahogany/Walnut	110,974	101,885
1210	6	10		101,949	93,681
			Satin Cherry	,	
1210	6	10	Polished Cherry Polished White	112,729	103,481
1210	6	10		100,367	92,243
1210	6	10	Polished Bubinga	114,400	105,000
1210	6	10	Palisander Rosewood	123,174	112,976
1210	6	10	Polished Pyramid Mahogany	129,441	118,674
1210	6	10	Polished Mahogany w/Vavona Inlay	137,798	126,271
1210	6	10	Polished Burl Walnut	121,085	111,077
1210	6	10	Polished Burl Walnut w/Walnut Inlay	137,798	126,271
1210	6	10	Satin Cherry and Yew	121,169	111,154
1210	6	10	Polished Cherry and Yew	137,798	126,271
1210	6	10	Classic Alexandra Polished Ebony	108,843	99,948
1210	6	10	Classic Alexandra Polished Walnut	126,015	115,559
1210	6	10	Classic Alexandra Burl Walnut	136,127	124,752
1210	6	10	Classic Alexandra Palisander	138,216	126,651
1210	6	10	Louis XIV Satin White w/Gold	183,842	168,129
1210	6	10	Satin and Polished Louis XV Mahogany	129,734	118,940
1210	6	10	Ambassador Palisander	162,951	149,137
1210	6	10	Ambassador Walnut	158,773	145,339
HAILUN					
/erticals					
HU116		45.5	Institutional Polished Ebony	10,308	7,246
HU1-P		48	Polished Ebony	11,135	7,670
1U1-P		48	Polished Mahogany/Walnut	11,998	8,290
lU1-PS		48	Polished Ebony with Nickel Trim	11,604	7,936
HU1-EP		48	Polished Ebony w/mahogany leg, fallboard, cheekblocks	12,038	8,190
101-EF 1U121		48	Polished Ebony	7,950	6,500
10121 10121		48	Polished Mahogany	8,250	6,700
HU5-P		50	Polished Ebony	12,466	8,230
HU5-P		50	Polished Ebony with Nickel Trim	12,826	8,436
1U5-P		50	Polished Mahogany/Walnut	12,826	8,436
HU7-P		52	Polished Ebony w/Sostenuto	17,001	11,418

^{*}See pricing explanation on page 194.

Model	Feet	Inches	Description	MSRP*	SMP*
HAILUN (coi	ntinued)				
Grands					
HG150	4	10	Polished Ebony	16,485	12,390
HG150	4	10	Polished Mahogany	17,085	12,790
HG151	4	11.5	Polished Ebony	20,747	14,760
HG151	4	11.5	Polished Mahogany/Walnut	24,233	15,256
HG151C	4	11.5	Chippendale Polished Mahogany/Walnut	24,951	15,466
HG161	5	4	Polished Ebony	25,006	16,508
HG161	5	4	Polished Mahogany/Walnut	27,182	16,960
HG161G	5	4	Georgian Polished Mahogany/Walnut	30,151	17,760
HG178	5	10	Polished Ebony	30,024	19,416
HG178	5	10	Polished Mahogany/Walnut	31,338	20,284
HG178B	5	10	Baroque Polished Ebony w/Birds-Eye Maple Accents	33,605	20,284
HG198			Emerson Polished Ebony	,	
HG198	6 6	5 5	Emerson Polished Mahogany/Walnut	46,689	28,760
	7	2	• · ·	49,112	29,494
HG218	/	2	Paulello Polished Ebony	65,210	38,812
HALLET, DA	VIS & C) .			
Heritage Col	lection V	erticals			
H108		43	Continental Polished Ebony	5,295	4,300
H108		43	Continental Polished Mahogany	5,495	4,390
H117H		46	Polished Ebony	5,950	4,500
H117H		46	Polished Mahogany	6,150	4,590
H118F		46	Demi-Chippendale Polished Ebony	5,995	4,700
H118F		46	Demi-Chippendale Polished Mahogany	6,195	4,790
Signature Co	llection	Verticals			
HS115M2		45	Classic Studio Polished Ebony	6,995	4,590
HS115M2		45	Classic Studio Polished Mahogany/Walnut/White	7,195	4,790
HS118M		46.5	Polished Ebony	7,395	4,990
HS118M		46.5	Polished Mahogany/Walnut/White	7,595	5,190
HS121S		48	Polished Ebony	8,795	5,590
HS121S		48	Polished Mahogany/Walnut/White	9,095	5,790
HS131Y		52	Polished Ebony	9,495	6,390
Heritage Col	lection G	irands	•	·	·
H142C	4	7	Polished Ebony	13,195	9,390
H142C	4	7	Polished Mahogany	13,995	9,790
H142F	4	7	Queen Anne Polished Mahogany	14,995	10,190
Signature Co			and the same and t	. 1,000	
HS148	4	10	Satin Ebony	14,695	9,990
HS148	4	10	Polished Ebony	13,995	9,390
HS148	4	10	Polished Ebony w/Silver Plate	14,695	9,990
HS148	4	10	Polished Mahogany/Walnut/White	14,695	9,990
HS160	5	3	Satin Ebony	15,995	10,990
HS160	5	3	Polished Ebony	15,395	10,390
			-		
HS160	5	3	Polished Mahogany/Walnut/White	15,995	10,990
HS170	5	7	Satin Ebony	16,995	12,190
HS170	5	7	Polished Ebony	16,495	11,590
HS170	5	7	Polished Mahogany/Walnut/White	16,995	12,190
HS188	6	2	Satin Ebony	20,495	14,590
HS188	6	2	Polished Ebony	19,995	13,990
HS188	6	2	Polished Mahogany/Walnut	20,495	14,590
HS212	7		Polished Ebony	29,995	26,990

^{*}See pricing explanation on page 194.

Model	Feet	Inches	Description	MSRP*	SMP*
HALLET, DA	VIS & C	O. (contin	ued)		
Imperial Col	lection G	irands			
HD148B	4	10	Polished Ebony	14,995	10,990
HD152B	5		Polished Ebony	17,195	11,790
HD152T	5		Designer Birds-Eye Maple Two Tone	19,195	13,190
HD165B	5	5	Polished Ebony	19,495	12,990
HD165P	5	5	Polished Ebony (fluted leg)	20,995	14,390
HARDMAN,	, PECK 8	. CO.			
Verticals					
R110S		44	Polished Ebony	5,495	4,310
R110S		44	Polished Mahogany	5,695	4,390
R115LS		45	Polished Ebony	5,995	4,510
R115LS		45	Polished Mahogany	6,195	4,590
R116		46	School Polished Ebony	6,695	4,990
R116		46	School Satin Cherry	6,895	5,110
R117XK		46	Chippendale Polished Mahogany	6,695	4,910
R120LS		48	Polished Ebony	6.495	4,910
R120LS		48	Polished Mahogany	6,695	4,990
R132HA		52	Polished Ebony	9,495	6,490
Grands		02	1 didina Ebany	0,100	0, 100
	1	0	Delighed Eheny	10.005	0.200
R143S	4	8	Polished Ebony	13,895	9,390
R143S	4	8	Polished Mahogany	14,995	9,790
R143F	4	8	French Provincial Polished Mahogany	15,395	10,190
R150S	5	0	Polished Ebony	15,995	9,990
R158S	5	3	Polished Ebony	16,795	10,590
R158S	5	3	Polished Mahogany	17,495	10,990
R168S	5	7	Polished Ebony	18,195	11,390
R168S	5	7	Polished Mahogany	18,995	11,790
R185S	6	1	Polished Ebony	20,995	13,190
R185S	6	1	Polished Mahogany	22,395	13,790
HEINTZMA	N & CO.				
Heintzman \	/erticals				
121DL		48	Satin Mahogany	7,995	7,380
123B		48.5	Polished Mahogany	8,795	7,580
123F		48.5	French Provincial Polished Mahogany	7,995	6,980
126C		50	Polished Ebony	8,795	7,600
126 Royal		50	Polished Ebony	9,795	8,200
132D		52	Polished Mahogany, Decorative Panel	11,795	8,980
132E		52	French Provincial Polished Ebony	11,795	8,780
132E		52	French Provincial Satin and Polished Mahogany	11,795	8,980
132 Royal		52	Satin Mahogany	12,795	9,580
140CK		55	Polished Mahogany	14,995	10,980
Gerhard Hei	ntzman ˈ	Verticals			
G118		47	Polished Ebony w/Silver Plate and Trim	4,995	4,995
G118		47	Polished Mahogany w/Silver Plate and Trim	5,195	5,195
G120		48	Polished Ebony w/Silver Plate and Trim	5,995	5,700
G120		48	Polished Mahogany w/Silver Plate and Trim	6,195	5,900
G126		50	Polished Ebony w/Silver Plate and Trim	7,995	6,400
G126		50	Polished Mahogany w/Silver Plate and Trim	8,195	6,600
G132		52	Polished Ebony w/Silver Plate and Trim	9,295	7,200
				0,200	,

^{*}See pricing explanation on page 194.

Model	Feet	Inches	Description	MSRP*	SMP*
HEINTZMAN	√ & CO.	(continued)			
Heintzman G	irands				
168	5	6	Polished Ebony	18,995	16,990
168	5	6	Polished Mahogany	19,995	17,390
168 Royal	5	6	Polished Ebony	23,995	17,990
186	6	1	Polished Ebony	21,995	18,980
186	6	1	Polished Mahogany	22,995	20,180
186 Royal	6	1	Polished Ebony	26,995	19,980
203	6	8	Polished Ebony	24,995	20,580
203 Royal	6	8	Polished Ebony	29,995	21,580
277	9	· ·	Polished Ebony	89,995	60,995
Gerhard Heir	ntzman	Grands			,
G152	5		Polished Ebony	9,995	9,995
G152	5		Polished White	11,995	11,995
G152R	5		Empire Polished Mahogany	11,995	11,995
G168	5	6	Polished Ebony	15,995	12,800
G168	5	6	Polished White	19,995	13,800
G168R	5	6	Empire Polished Mahogany	17,995	13,800
HESSEN, J.F.					
Verticals	•				
120		47	Polished Ebony	15,200	12,200
120		47	Polished Ebony with Round Edges	15,450	12,600
120		47	Polished Walnut	16,100	12,800
123		48	Polished Ebony	18,200	12,800
123		48	Polished Ebony with Round Edges	18,450	13,200
		-			
123		48	Polished Walnut	19,100	13,400
132		52	Polished Ebony	26,200	13,800
132		52	Polished Ebony with Round Edges	26,450	14,200
132		52	Polished Walnut	27,100	14,400
Verticals			Renner action, add	1,400	1,400
Grands					
172	5	8	Polished Ebony	41,200	31,800
HOFFMANN	, w.				
Vision Series	Vertica	ls			
V112		44.5	Polished Ebony	12,220	12,220
V112		44.5	Polished Mahogany/Walnut	14,180	14,180
V112		44.5	Polished White	14,180	14,180
V112		44.5	Chippendale Polished Maogany	15,720	15,720
V112		44.5	Chippendale Polished Walnut	15,720	14,042
V120		47.6	Polished Ebony	14,180	14,180
V120		47.6	Polished White	16,120	16,120
V120		47.6	Chippendale Polished Mahogany	17,680	17,150
V120		47.6	Chippendale Polished Walnut	17,680	15,364
V120		47.6	Rococo Satin White	18,640	18,640
V120 V120		47.6	Rococo Polished White	19,420	19,420
V126		49.6	Polished Ebony	16,120	16,120
V126		49.6	Polished White	17,860	17,860
V126 V131		51.8	Polished Ebony	18,060	18,060
Viol Tradition Ser	ies Vert		. Gliorica Eporty	10,000	10,000
T122		48	Polished Ebony	16,700	16,700
T122		48	Satin Mahogany/Walnut	19,220	19,220
		40	Jann Mangany/Walliul	19.220	13,440
T122		48	Polished Mahogany/Walnut	19,220	19,220

^{*}See pricing explanation on page 194.

Model	Feet Inc	hes	Description	MSRP*	SMP*
HOFFMANI	V, W. (contir	nued)			
T122	48	3 Po	olished White	18,640	18,640
T128	50		olished Ebony	18,060	18,060
T128	50).4 Sa	atin Mahogany/Walnut	21,180	21,180
T128			olished Mahogany/Walnut	21,180	21,180
T128	50).4 Po	olished White	20,000	20,000
Professional	Series Verti	cals			
P114	45	5 Po	olished Ebony w/Chrome Hardware	17,680	17,680
P114	45		olished White w/Chrome Hardware	19,620	19,620
P120			olished Ebony w/Chrome Hardware	18,840	18,840
P120			olished White w/Chrome Hardware	20,780	20,780
P126	49	9.6 Po	olished Ebony w/Chrome Hardware	20,000	20,000
Vision Series	s Grands				
V158	5 2	2 P(olished Ebony	32,100	32,100
V158	5 2	2 Po	olished Mahogany/Walnut/White	35,980	35,980
V175	5 9) Po	olished Ebony	35,980	35,980
V175	5 9) Po	olished Walnut/Mahogany/White	39,880	39,880
V183	6	Po	olished Ebony	39,880	39,880
V183	6	Po	olished Walnut/Mahogany/White	43,760	43,760
Tradition Se	ries Grands				
T161	5 3	3 P	olished Ebony	41,820	41,820
T161	5 3		olished Mahogany/Walnut	47,660	47,660
T161	5 3	3 P	olished White	45,720	45,720
T177	5 10) P	olished Ebony	47,660	47,660
T177	5 10		olished Mahogany/Walnut	53,480	53,480
T177	5 10		olished White	51,540	51,540
T186	6 1	l P	olished Ebony	53,480	53,480
T186	6 1		olished Mahogany/Walnut	59,320	59,320
T186	6 1		olished White	57,380	57,380
Professional	Series Gran	ds			
P162	5 4	1 Po	olished Ebony w/Chrome Hardware	52,980	52,980
P188	6 2	2 P	olished Ebony w/Chrome Hardware	58,820	58,820
P206	6 9		olished Ebony w/Chrome Hardware	66,600	66,600
HUPFELD Studio Editio	on Verticals				
HU 118			olished Ebony	6,462	6,462
HU 121			olished Ebony	6,725	6,725
HU 121			olished White	6,865	6,865
HU 125	49		plished Ebony	8,208	8,208
			olished Ebony		0.500
	52	2 P	Silanea Ebony	9,563	9,500
	52 ion Verticals			9,563	
HU 116E	ion Verticals 4	5.5 Po	blished Ebony	11,086	10,854
Europe Editi HU 116E HU 116E	ion Verticals 45 45	5.5 Pc	blished Ebony atin Mahogany/Walnut	11,086 11,086	10,854 10,854
Europe Editi HU 116E	ion Verticals 45 45	5.5 Po 5.5 Sa	blished Ebony	11,086	10,854
Europe Editi HU 116E HU 116E HU 116E HU 116E	ion Verticals 4ક 4ક 4ક 4ક 4ક	5.5 Pc 5.5 Sa 5.5 Pc 5.5 Sa	olished Ebony atin Mahogany/Walnut olished Mahogany/Walnut atin Cherry	11,086 11,086 11,782 11,782	10,854 10,854 11,473 11,473
Europe Editi HU 116E HU 116E HU 116E HU 116E HU 116E	ion Verticals 48 48 49 48 48	5.5 Pc 5.5 Sc 5.5 Pc 5.5 Sc 5.5 Pc	olished Ebony atin Mahogany/Walnut olished Mahogany/Walnut atin Cherry olished Cherry/White	11,086 11,086 11,782 11,782 13,174	10,854 10,854 11,473 11,473 12,710
Europe Editi HU 116E HU 116E HU 116E HU 116E HU 116E HU 122E	ion Verticals 48 48 48 48 48 48	5.5 Pc 5.5 Sc 5.5 Pc 5.5 Sc 5.5 Pc 3 Pc	olished Ebony atin Mahogany/Walnut olished Mahogany/Walnut atin Cherry olished Cherry/White olished Ebony	11,086 11,086 11,782 11,782	10,854 10,854 11,473 11,473 12,710 11,937
Europe Editi HU 116E HU 116E HU 116E HU 116E HU 116E	ion Verticals 48 48 49 49 48 48 48	5.5 Pc 5.5 Sc 5.5 Pc 5.5 Pc 5.5 Pc 3 Pc 3 Sc	olished Ebony atin Mahogany/Walnut olished Mahogany/Walnut atin Cherry olished Cherry/White olished Ebony atin Mahogany/Walnut	11,086 11,086 11,782 11,782 13,174	10,854 10,854 11,473 11,473 12,710
Europe Editi HU 116E HU 116E HU 116E HU 116E HU 116E HU 122E HU 122E HU 122E	ion Verticals 48 48 48 48 48 48	5.5 Pc 5.5 Sc 5.5 Pc 5.5 Pc 5.5 Pc 3 Pc 3 Sc 3 Pc	blished Ebony atin Mahogany/Walnut blished Mahogany/Walnut atin Cherry blished Cherry/White blished Ebony atin Mahogany/Walnut blished Mahogany/Walnut	11,086 11,086 11,782 11,782 13,174 12,304	10,854 10,854 11,473 11,473 12,710 11,937 11,937 12,556
Europe Editi HU 116E HU 116E HU 116E HU 116E HU 116E HU 122E HU 122E HU 122E	ion Verticals 48 48 49 49 48 48 48	5.5 Pc 5.5 Sc 5.5 Pc 5.5 Pc 5.5 Pc 3 Pc 3 Sc 3 Sc	blished Ebony atin Mahogany/Walnut blished Mahogany/Walnut atin Cherry blished Cherry/White blished Ebony atin Mahogany/Walnut blished Mahogany/Walnut blished Mahogany/Walnut atin Cherry	11,086 11,086 11,782 11,782 13,174 12,304	10,854 10,854 11,473 11,473 12,710 11,937 11,937
Europe Editi HU 116E HU 116E HU 116E HU 116E HU 116E HU 122E HU 122E HU 122E HU 122E	ion Verticals 48 48 49 49 48 48 48 48	5.5 Pc 5.5 Si 5.5 Pc 5.5 Si 5.5 Pc 5.5 Si 5.5 Pc 6.5 Si 6.	blished Ebony atin Mahogany/Walnut blished Mahogany/Walnut atin Cherry blished Cherry/White blished Ebony atin Mahogany/Walnut blished Mahogany/Walnut atin Cherry blished Cherry/White	11,086 11,086 11,782 11,782 13,174 12,304 12,304 13,000 13,000 14,392	10,854 10,854 11,473 11,473 12,710 11,937 11,937 12,556 12,556 13,793
Europe Editi HU 116E HU 116E HU 116E HU 116E HU 116E HU 122E HU 122E	ion Verticals 45 45 45 46 48 48 48 48	5.5 Pc 5.5 Si 5.5 Pc 5.5 Si 5.5 Pc 5.5 Si 5.5 Pc 6.5 Si 6.	blished Ebony atin Mahogany/Walnut blished Mahogany/Walnut atin Cherry blished Cherry/White blished Ebony atin Mahogany/Walnut blished Mahogany/Walnut blished Mahogany/Walnut atin Cherry	11,086 11,086 11,782 11,782 13,174 12,304 12,304 13,000 13,000	10,854 10,854 11,473 11,473 12,710 11,937 11,937 12,556 12,556
Europe Editi HU 116E HU 116E HU 116E HU 116E HU 116E HU 122E HU 122E HU 122E HU 122E HU 122E	ion Verticals 45 45 45 45 46 48 48 48 48	5.5 Pc 5.5 Sc 5.5 Pc 5.5 Sc 5.5 Pc 6.5 Pc 8	blished Ebony atin Mahogany/Walnut blished Mahogany/Walnut atin Cherry blished Cherry/White blished Ebony atin Mahogany/Walnut blished Mahogany/Walnut atin Cherry blished Cherry/White	11,086 11,086 11,782 11,782 13,174 12,304 12,304 13,000 13,000 14,392	10,854 10,854 11,473 11,473 12,710 11,937 11,937 12,556 12,556 13,793

^{*}See pricing explanation on page 194.

Model	Feet Inches	Description	MSRP*	SMP*
HUPFELD (d	continued)			
HU 132E	52	Polished Mahogany/Walnut	13,731	13,205
HU 132E	52	Satin Cherry	13,731	13,205
HU 132E	52	Polished Cherry/White	15,123	14,443
HU 132E	52	Polished Bubinga	18,185	17,164
Studio Editi	on Grands			
HU 148	4 10	Polished Ebony	17,989	16,990
HU 148	4 10	Polished Mahogany/Walnut	19,037	17,922
HU 148	4 10	Polished White	18,689	17,612
HU 160	5 3	Polished Ebony	20,783	19,474
HU 160	5 3	Polished Mahogany/Walnut	21,641	20,236
HU 160	5 3	Polished White	21,483	20,096
HU 188	6 2	Polished Ebony	29,691	27,392
HU 188	6 2	Polished Mahogany/Walnut	30,303	27,936
HU 188	6 2	Polished White	30,391	28,014
HU 213	7	Polished Ebony	36,329	33,292
HU 213	7	Polished White	38,075	34,844
Europe Editi	ion Grands			
HU 160E	5 3	Polished Ebony	34,724	31,866
HU 160E	5 3	Polished Mahogany/Walnut	37,197	34,064
HU 160E	5 3	Polished Cherry/Bubinga/White	40,083	36,629
HU 175E	5 9	Polished Ebony	38,022	34,79
HU 175E	5 9	Polished Mahogany/Walnut	40,495	36,996
HU 175E	5 9	Polished Bubinga/White	43,380	39,560
HU 186E	6 3	Polished Ebony	45,441	41,392
HU 186E	6 3	Polished Mahogany/Walnut	47,914	43,590
HU 186E	6 3	Polished Bubinga/White	50,799	46,15
HU 210E	6 10.5	Polished Ebony	50,799	46,15
HU 228E	7 6.5	Polished Ebony	59,043	53,483
IRMLER				
Studio Editi	on Verticals			
	on Verticals	Deliahad Eham.	0.040	0.01
P112	44	Polished Ebony	6,318	6,318
P112 P118	44 46.5	Polished Ebony	6,576	6,573
P112 P118 P118	44 46.5 46.5	Polished Ebony Polished White	6,576 6,712	6,573 6,688
P112 P118 P118 P125	44 46.5 46.5 49	Polished Ebony	6,576	6,573 6,688
P112 P118 P118 P125 Art Design \	44 46.5 46.5 49 Verticals	Polished Ebony Polished White Polished Ebony	6,576 6,712 8,026	6,573 6,688 7,802
P112 P118 P118 P125 Art Design \ Mia	44 46.5 46.5 49 Verticals	Polished Ebony Polished White Polished Ebony Polished Ebony	6,576 6,712 8,026	6,573 6,688 7,802 8,394
P112 P118 P118 P125 Art Design \ Mia Gina	44 46.5 46.5 49 Verticals 47.5 48.5	Polished Ebony Polished White Polished Ebony Polished Ebony Polished Ebony	6,576 6,712 8,026 8,725 9,095	6,573 6,688 7,802 8,394 8,708
P112 P118 P118 P125 Art Design \ Mia Gina Monique	44 46.5 46.5 49 Verticals 47.5 48.5 49	Polished Ebony Polished White Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony	6,576 6,712 8,026 8,725 9,095 9,095	6,573 6,688 7,802 8,394 8,708 8,708
P112 P118 P118 P125 Art Design \ Mia Gina Monique Louis	44 46.5 46.5 49 Verticals 47.5 48.5 49	Polished Ebony Polished White Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony	6,576 6,712 8,026 8,725 9,095 9,095 8,725	6,573 6,688 7,802 8,394 8,708 8,708 8,394
P112 P118 P118 P125 Art Design \ Mia Gina Monique Louis Titus	44 46.5 46.5 49 Verticals 47.5 48.5 49 49	Polished Ebony Polished White Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony	6,576 6,712 8,026 8,725 9,095 9,095 8,725 9,095	6,573 6,688 7,802 8,394 8,708 8,708 8,708
P112 P118 P118 P125 Art Design \ Mia Gina Monique Louis Titus Alexa	44 46.5 46.5 49 Verticals 47.5 48.5 49 49	Polished Ebony Polished White Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony	6,576 6,712 8,026 8,725 9,095 9,095 8,725 9,095 10,320	6,573 6,688 7,802 8,394 8,708 8,708 8,708 8,708 9,744
P112 P118 P118 P125 Art Design \ Mia Gina Monique Louis Titus Alexa Carlo	44 46.5 46.5 49 Verticals 47.5 48.5 49 49 49	Polished Ebony Polished White Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony	6,576 6,712 8,026 8,725 9,095 9,095 8,725 9,095	6,573 6,683 7,803 8,394 8,703 8,703 8,703 8,703 9,744
P112 P118 P118 P125 Art Design \ Mia Gina Monique Louis Titus Alexa Carlo Supreme Ed	44 46.5 46.5 49 Verticals 47.5 48.5 49 49	Polished Ebony Polished White Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony	6,576 6,712 8,026 8,725 9,095 9,095 8,725 9,095 10,320	6,573 6,688 7,802 8,394 8,708 8,708 8,708 8,708 9,746
P112 P118 P118 P125 Art Design \ Mia Gina Monique Louis Titus Alexa Carlo Supreme Ed	44 46.5 46.5 49 Verticals 47.5 48.5 49 49 49 49 49 49	Polished Ebony Polished White Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony	6,576 6,712 8,026 8,725 9,095 9,095 8,725 9,095 10,320 10,320	6,573 6,684 7,802 8,394 8,704 8,704 9,744 7,923
P112 P118 P118 P125 Art Design \ Mia Gina Monique Louis Titus Alexa Carlo Supreme Ed SP118 SP121	44 46.5 46.5 49 Verticals 47.5 48.5 49 49 49 49 49 49 49 49	Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony	6,576 6,712 8,026 8,725 9,095 9,095 8,725 9,095 10,320 10,320 8,169 8,725	6,573 6,688 7,802 8,394 8,708 8,708 8,708 9,746 9,746
P112 P118 P118 P125 Art Design \ Mia Gina Monique Louis Titus Alexa Carlo Supreme Ed SP118 SP121 SP125	44 46.5 46.5 49 /erticals 47.5 48.5 49 49 49 49 49 49 49 49 49 49 49	Polished Ebony Polished White Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony	6,576 6,712 8,026 8,725 9,095 9,095 8,725 9,095 10,320 10,320 8,169 8,725 9,579	6,573 6,688 7,802 8,394 8,708 8,708 9,746 9,746 7,923 8,394 9,118
P112 P118 P118 P125 Art Design \ Mia Gina Monique Louis Titus Alexa Carlo Supreme Ed SP118 SP121 SP125	44 46.5 46.5 49 Verticals 47.5 48.5 49 49 49 49 49 49 49 49	Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony	6,576 6,712 8,026 8,725 9,095 9,095 8,725 9,095 10,320 10,320 8,169 8,725	6,573 6,684 7,802 8,394 8,704 8,704 9,744 9,744 7,923 8,394 9,114
P112 P118 P118 P125 Art Design \ Mia Gina Monique Louis Titus Alexa Carlo Supreme Ed SP118 SP121 SP125 SP132	44 46.5 46.5 49 /erticals 47.5 48.5 49 49 49 49 49 49 49 49 49 49 49	Polished Ebony Polished White Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony	6,576 6,712 8,026 8,725 9,095 9,095 8,725 9,095 10,320 10,320 8,169 8,725 9,579	6,573 6,684 7,802 8,394 8,704 8,704 9,744 9,744 7,923 8,394 9,114
P112 P118 P118 P125 Art Design \ Mia Gina Monique Louis Titus Alexa Carlo Supreme Ed SP118 SP121 SP125 SP132 Professional	44 46.5 46.5 49 Verticals 47.5 48.5 49 49 49 49 49 52 I Edition Verticals 46.5	Polished Ebony Polished White Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony	6,576 6,712 8,026 8,725 9,095 9,095 8,725 9,095 10,320 10,320 8,169 8,725 9,579 10,622	6,573 6,688 7,802 8,394 8,703 8,704 9,744 9,744 7,923 8,394 9,118 10,002
P112 P118 P118 P125 Art Design \ Mia Gina Monique Louis Titus Alexa Carlo Supreme Ed SP118 SP121 SP125 SP132 Professional P116E P116E	44 46.5 46.5 49 Verticals 47.5 48.5 49 49 49 49 49 52 I Edition Verticals 46.5 48 49 52	Polished Ebony Polished White Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Satin Mahogany/Walnut	6,576 6,712 8,026 8,725 9,095 9,095 8,725 9,095 10,320 10,320 8,169 8,725 9,579 10,622	6,573 6,688 7,802 8,394 8,703 8,704 9,744 9,744 7,923 8,394 9,111 10,002
P112 P118 P118 P125 Art Design \ Mia Gina Monique Louis Titus Alexa Carlo Supreme Ed SP118 SP121 SP125 SP132 Professional P116E P116E	44 46.5 46.5 49 /erticals 47.5 48.5 49 49 49 49 49 52 I Edition Verticals 46.5 48 49 52	Polished Ebony Polished White Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Satin Mahogany/Walnut Satin Cherry	6,576 6,712 8,026 8,725 9,095 9,095 8,725 9,095 10,320 10,320 8,169 8,725 9,579 10,622 9,362 9,362 9,949	6,57: 6,68: 7,80: 8,39- 8,70: 8,70: 8,70: 9,74: 7,92: 8,39- 9,11: 10,00: 8,93- 8,93- 9,43
P112 P118 P118 P125 Art Design \ Mia Gina Monique Louis Titus Alexa Carlo Supreme Ed SP118 SP121 SP125 SP132	44 46.5 46.5 49 Verticals 47.5 48.5 49 49 49 49 49 52 I Edition Verticals 46.5 48 49 52	Polished Ebony Polished White Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Polished Ebony Satin Mahogany/Walnut	6,576 6,712 8,026 8,725 9,095 9,095 8,725 9,095 10,320 10,320 8,169 8,725 9,579 10,622	6,573 6,688 7,802 8,394 8,708 8,708 8,708 9,746 9,746

^{*}See pricing explanation on page 194.

Model	Feet	Inches	Description	MSRP*	SMP*
IRMLER (co	ntinued)				
P122E		48	Polished Ebony	10,390	9,805
P122E		48	Satin Mahogany/Walnut	10,390	9,805
P122E		48	Satin Cherry	10,978	10,303
P122E		48	Polished Mahogany/Walnut	10,978	10,303
P122E		48	Polished Cherry/White	12,153	11,299
P122E		48	Polished Bubinga	13,005	12,021
P132E		52	Polished Ebony	11,007	10,328
P132E		52	Satin Mahogany/Walnut	11,007	10,328
P132E		52	Satin Cherry	11,595	10,826
P132E		52	Polished Mahogany/Walnut	11,595	10,826
P132E		52	Polished Cherry/White	12,770	11,822
P132E		52	Polished Bubinga	15,356	14,014
Studio Editi	on Grands	;	•		
F148	4	10	Polished Ebony	17,589	15,906
F148	4	10	Polished Mahogany/Walnut	18,614	16,775
F148	4	10	Polished White	18,273	16,486
F160	5	3	Polished Ebony	20,321	18,221
F160	5	3	Polished Mahogany/Walnut	21,160	18,932
F160	5	3	Polished White	21,006	18,802
F188	6	2	Polished Ebony	29,031	25,603
F188	6	2	Polished Mahogany/Walnut	29,630	26,110
F188	6	2	Polished White	29,715	26,182
F213	7		Polished Ebony	35,521	31,103
F213	7		Polished White	37,228	32,549
Professiona	l Edition G	irands		,	,
F160E	5	3	Polished Ebony	32,409	28,465
F160E	5	3	Polished Mahogany/Walnut	34,718	30,422
F160E	5	3	Polished Cherry	37,410	32,703
F160E	5	3	Polished White	37,410	32,703
F160E	5	3	Polished Bubinga	37,410	32,703
F175E	5	9	Polished Ebony	35,487	31,074
F175E	5	9	Polished Mahogany/Walnut	37,795	33,030
F175E	5	9	Polished White	40,488	35,312
F175E	5	9	Polished Bubinga	40,488	35,312
F190E	6	3	Polished Ebony	42,412	36,942
F190E	6	3	Polished Mahogany/Walnut	44,720	38,898
F190E	6	3	Polished White	47,413	41,181
F190E	6	3	Polished Bubinga	47,413	41,181
F210E	6	10.5	Polished Ebony	47,413	41,181
F230E	7	6.5	Polished Ebony	55,107	47,701
KAWAI					
Verticals					
K-15		44	Continental Polished Ebony	5,495	5,495
K-15		44	Continental Polished Mahogany	5,695	5,695
506N		44.5	Satin Ebony/Mahogany	5,495	5,495
508		44.5	Satin Mahogany	6,195	6,190
607		44.5	French Renaissance Satin Cherry	7,495	7,190
607		44.5	Queen Anne Satin Mahogany	7,495	7,190
K-200		45	Satin and Polished Ebony	7,495	7,190
K-200		45	Satin and Polished Mahogany	8,195	7,790
K-200NKL		45	Satin and Polished Ebony with Nickel Trim	7,895	7,490
UST-9		46	Satin Ebony/Oak/Walnut/Cherry	7,995	7,590
907N		46.5	English Regency Satin Mahogany	10,695	9,990
907N		46.5	French Provincial Satin Cherry	10,695	9,990
K-300		48	Satin and Polished Ebony	11,195	10,390
*See pricing	n ovnlanat		•	,	,

^{*}See pricing explanation on page 194.

Model	Feet	Inches	Description	MSRP*	SMP*
KAWAI (cont	inued)				
K-300		48	Satin and Polished Mahogany	11,995	10,990
K-300		48	Polished Snow White	12,195	11,190
K-300NKL		48	Satin and Polished Ebony with Nickel Trim	11,595	10,790
K-400		48	Polished Ebony	11,995	10,990
K-400NKL		48	Polished Ebony with Nickel Trim	12,195	11,290
K-500		51	Satin and Polished Ebony	14,695	13,190
K-500		51	Polished Sapele Mahogany	16,495	14,790
AnyTime (Sile	nt) Ver	ticals			
K-200 ATX2-CA	Ą	45	AnyTime Polished Ebony w/CA Sound	11,695	10,590
K-300 ATX2-SS	3	48	AnyTime Polished Ebony w/Soundboard Speaker	16,495	14,590
Grands					
GL-10	5		Satin and Polished Ebony	15,095	14,790
GL-10	5		Polished Ebony with Nickel Trim	15,995	15,590
GL-10	5		Polished Mahogany/Snow White	16,795	16,190
GL-10	5		French Provincial Polished Mahogany	17,895	17,190
GL-20	5	2	Satin and Polished Ebony	20,395	19,790
GL-20	5	2	Polished Sapele Mahogany	23,895	22,790
GL-20	5	2	Polished Snow White	22,895	21,990
GL-30	5	5	Satin and Polished Ebony	27,295	25,990
GL-30	5	5	Polished Sapele Mahogany	32,895	31,190
GL-30	5	5	Satin Dark Walnut	32,895	31,190
GL-30	5	5	Polished Snow White	31,595	29,990
GX-1 BLK	5	5	Satin and Polished Ebony	36,695	31,590
GX-1 BLK	5	5	Polished Dark Walnut	42,995	36,790
GL-40	5	11	Satin and Polished Ebony	32,295	30,590
GL-40	5	11	Polished Sapele Mahogany	38,095	35,990
GL-40	5	11	Satin Dark Walnut	38,095	35,990
GX-2 BLK	5	11	Satin and Polished Ebony	42,495	36,390
GX-2 BLK	5	11	Satin Walnut/Cherry/Oak	46,995	40,190
GX-2 BLK	5	11	Polished Walnut/Sapeli Mahogany	48,995	41,790
GX-2 BLK	5	11	Polished Snow White	45,195	38,590
CR40-PL	6	1			
GL-50			Plexiglass Crystal Piano	231,495	186,190
	6	2	Polished Ebony	36,995	34,990
GX-3 BLK	6	2	Satin and Polished Ebony	54,495	46,390
GX-5 BLK	6	7	Satin and Polished Ebony	61,695	52,390
GX-6 BLK	7	•	Satin and Polished Ebony	69,195	58,590
GX-7 BLK EX-L	7 9	6 1	Satin and Polished Ebony	80,195 218,995	67,790
		•	Polished Ebony	210,995	183,190
AnyTime (Sile GL-30 ATX-SS	nt) Gra 5		AnyTime Deliched Ehenyw/Coundheard Speeker	20.105	28,590
GL-30 ATA-33	5	5	AnyTime Polished Ebony w/Soundboard Speaker	30,195	26,590
KAWAI, SHIG	ERU				
Grands					
SK-2	5	11	Polished Ebony	64,000	54,200
SK-2	5	11	Polished Sapele Mahogany	73,800	62,400
SK-3	6	2	Polished Ebony	74,800	63,200
SK-3	6	2	Polished Sapele Mahogany	85,800	72,400
SK-3	6	2	Polished Pyramid Mahogany	99,500	83,800
SK-5	6	7	Polished Ebony	86,000	72,600
SK-6	7		Polished Ebony	97,000	81,800
wSK-7	7	6	Polished Ebony	108,000	90,600
WSR-7	•	0	1 Olici lod Ebolly	100,000	00,000

^{*}See pricing explanation on page 194.

Model	Feet	Inches	Description	MSRP*	SMP*
KAYSERBUR	? G				
Verticals					
KA-121B		48	Polished Ebony	15,995	12,990
KA-121B		48	Polished Dark Walnut	16,995	13,790
KA-126B		50	Polished Ebony	18,495	14,590
KA-126B		50	Polished Cherry	19,995	15,390
KA-132B		52	Polished Ebony	20,995	16,190
KA-132C		52	Polished Ebony w/Sostenuto	21,495	16,990
Grands			,	,	,
KA-180	5	11	Polished Ebony	59,995	52,990
KINGSBURG	i				
Verticals					
LM 116		46	Chippendale Polished Walnut	6,610	5,893
KG 120		48	Polished Ebony	9,459	7,326
KU 120		48	Polished Ebony	8,815	6,114
KU 120		48	Satin and Polished Mahogany/Walnut	9,146	6,334
KG 122		48	Polished Ebony	10,085	7,657
KF 122		48	Polished Ebony	13,473	9,440
KF 123		50	Polished White & Red	13,480	9,862
KG 123		50	Decorator Satin Walnut	12,402	9,321
KU 123		50	Decorator Satin Walnut	9,917	6,996
KG 125		50	Polished Ebony	10,367	7,998
KU 125		50	Polished Ebony	9,917	6,775
KU 125		50	Polished Ebony w/Inlay	10,602	7,216
KU 125		50	Satin and Polished Mahogany/Walnut	10,469	6,996
KF 126		50	Satin Walnut	14,720	10,744
KF 128		50	Polished Ebony	14,498	11,626
KF 133		52	Polished Ebony	16,483	12,508
KG 133		52	Polished Ebony	12,497	9,421
KU 133		52	Polished Ebony	10,574	7,437
KU 133		52	Polished Mahogany/Walnut	11,003	7,657
Grands					
KF 158	5	3	Polished Ebony	25,909	25,859
KG 158	5	3	Polished Ebony	19,840	13,611
KG 158	5	3	Polished Ebony w/Inlay	20,942	14,272
KG 158	5	3	Polished Mahogany/Walnut	20,391	14,052
KG 175	5	9	Polished Ebony	22,320	14,006
KF 185	6	1	Polished Ebony	33,020	32,970
KG 185	6	1	Polished Ebony	24,250	15,375
KG 185	6	1	Polished Ebony w/Inlay	25,904	16,036
KG 185	6	1	Polished Mahogany/Walnut	25,352	15,816
KF 228	7	4	Polished Ebony	69,458	64,195
KNABE, WM	7				
Baltimore Se		ticals			
WV 43		43	Continental Polished Ebony	7,295	5,398
WV 243F		43	French Provincial Satin Cherry	7,995	5,798
WV 243T		43	Satin Mahogany/Walnut	7,995	5,798
WV 115		45	Satin Ebony	8,795	6,298
WV 115		45	Polished Ebony	7,995	5,798
		46.5	Satin Ebony	9,295	6,598
WV 118H				0,200	0,000
WV 118H WV 118H		46.5	Polished Ebony	8,995	6,398

^{*}See pricing explanation on page 194.

Model	Feet Inches	Description	MSRP*	SMP*
KNABE, WN	1. (continued)			
Academy Sei	ries Verticals			
WMV 245	45	Satin Ebony	8,695	6,198
WMV 245	45	Polished Ebony	8,295	5,998
WMV 247	46.5	Satin Ebony	9,995	6,998
WMV 247	46.5	Polished Ebony	9,695	6,798
WMV 647F	46.5	French Provincial Satin Cherry	9,695	6,798
WMV 647R	46.5	Renaissance Satin Walnut	9,695	6,798
WMV 647T	46.5	Satin Mahogany	9,695	6,798
WMV 121M	47.5	Satin Ebony	9,995	6,998
WMV 121M	47.5	Polished Ebony		
		•	9,695	6,798
WMV 132	52	Satin Ebony	12,295	8,398
WMV 132	52	Polished Ebony	11,695	7,998
Verticals		Other finishes, add		1,500
Concert Artis	st Series Verticals			
WKV 118F	46.5	French Provincial Lacquer Semigloss Cherry	13,995	9,398
WKV 118R	46.5	Renaissance Lacquer Satin Ebony	13,995	9,398
WKV 118R	46.5	Renaissance Lacquer Semigloss Walnut	13,995	9,398
WKV 118T	46.5	Lacquer Semigloss Mahogany	13,995	9,398
WKV 121	48	Satin Ebony	14,595	9,798
WKV 121	48	Polished Ebony	13,995	9,398
WKV 132MD	52	Satin Ebony	15,995	10,598
WKV 132MD	52	Polished Ebony	14,595	9,798
Verticals		Other finishes, add	,	1,500
Baltimore Se	ries Grands			,
WG 50	5	Satin Ebony	18,295	11,998
WG 50	5	Polished Ebony	17,295	11,398
WG 50	5	Polished Mahogany/Walnut	18,595	12,198
WG 50 WG 54		5 ,		
	5 4	Satin Ebony	19,995	12,998
WG 54	5 4	Polished Ebony	18,595	12,198
WG 54	5 4	Polished Mahogany/Walnut	20,295	13,198
WG 54	5 4	Polished Ebony w/Bubinga or Pommele Accents	23,295	14,998
WSG 54	5 4	M Leg w/Bubinga or Pommele Accents	26,595	16,998
WG 59	5 9	Satin Ebony	24,695	15,798
WG 59	5 9	Polished Ebony	22,995	14,798
WG 61	6 1	Satin Ebony	25,995	16,598
WG 61	6 1	Polished Ebony	24,695	15,798
Grands		Other finishes, add		2,000
Academy Sei	ries Grands			
WMG 610	5 9	Satin Ebony	27,695	17,598
WMG 610	5 9	Polished Ebony	26,295	16,798
WMG 660	6 1	Satin Ebony	30,995	19,598
WMG 660	6 1	Polished Ebony	29,695	18,798
WFM 700T	6 10	Satin Ebony	33,995	21,398
WFM 700T	6 10	Polished Ebony	32,695	20,598
Grands	0 10	Other finishes, add	02,000	2,000
	st Series Grands	Other milanes, add		2,000
		Catin Ehany	00.005	00.000
WKG 53	5 3	Satin Ebony	33,295	20,998
WKG 53	5 3	Polished Ebony	32,295	20,398
WKG 58	5 8	Satin Ebony	40,995	25,598
WKG 58	5 8	Polished Ebony	39,995	24,998
WKG 70	7	Satin Ebony	56,295	34,798
WKG 70	7	Polished Ebony	55,295	34,198
WKG 76	7 6	Satin Ebony	58,195	35,898
WKG 76	7 6	Polished Ebony	57,295	35,398

^{*}See pricing explanation on page 194.

Model	Feet Inche	s Description	MSRP*	SMP*
KNABE, WM	1. (continued)			
WKG 90	9 2	Polished Ebony	143,595	87,198
Grands		Other finishes, add		2,000
MASON & H	IAMLIN			
Verticals				
50	50	Satin and Polished Ebony	28,210	25,881
Verticals		Cambridge Collection, add	3,061	2,700
Grands		•		
В	5 4	Satin and Polished Ebony	62,802	53,314
В	5 4	Polished Mahogany/Walnut	67,120	56,911
В	5 4	Polished Pyramid Mahogany	76,624	64,828
В	5 4	Polished Rosewood	70,431	59,669
В	5 4	Polished Bubinga	73,035	61,838
В	5 4	Polished Macassar Ebony	76,624	64,828
4	5 8	Satin and Polished Ebony	72,334	61,255
4	5 8	Polished Mahogany/Walnut	77,132	65,252
4	5 8	Polished Pyramid Mahogany	93,653	79,013
4	5 8	Polished Rosewood	85,515	72,233
A	5 8	Polished Bubinga	88,508	74,727
4	5 8	Polished Macassar Ebony	93,653	79,013
AΑ	6 4	Satin and Polished Ebony	82,566	69,779
AΑ	6 4	Polished Mahogany/Walnut	87,025	73,493
λA	6 4	Polished Pyramid Mahogany	99,996	84,297
λA	6 4	Polished Rosewood	91,836	77,500
λA	6 4	Polished Bubinga	94,823	79,989
λA	6 4	Polished Macassar Ebony	99,996	84,297
3B	7	Satin and Polished Ebony	93,694	79,047
3B	7	Polished Mahogany/Walnut	97,009	81,810
3B	7	Polished Pyramid Mahogany	115,504	97,215
3B	7	Polished Rosewood	108,595	91,460
BB	7	Polished Bubinga	111,289	93,704
3B	7	Polished Macassar Ebony	115,504	97,215
CC	9 4	Satin and Polished Ebony	139,302	117,039
CC	9 4	Polished Mahogany/Walnut	149,104	125,204
CC	9 4	Polished Pyramid Mahogany	169,752	142,404
CC	9 4	Polished Rosewood	157,581	132,266
CC	9 4	Polished Bubinga	162,863	136,665
CC	9 4	Polished Macassar Ebony	169,752	142,404
Grands		Monticello Art Case, add	8,000	6,800
Grands		Cambridge Collection, add	8,000	6,800
NIENDORF				
/erticals				
N-RS-118	46.5	Polished Ebony		24,390
N-RF1-118	46.5	Polished Wood Veneer		29,580
N-RS-123	48.5	Polished Ebony		26,950
N-RSF1-123	48.5	Polished Ebony w/Burl Walnut		28,990
N-RF2-123	48.5	Polished Wood Veneer		32,300
Grands				
N-RS-145	4 9	Polished Ebony		56,790
V-RS-172	5 8	Polished Ebony		64,280
N-RF1-172	5 8	Polished Wood Veneer		74,650
N-RS-227	7 5	Polished Ebony		103,190
N-RF2-227	7 5	Polished Ebony w/Burl Walnut		116,110
N-RS-275	9	Polished Ebony Polished Ebony		151,390
1110°21J	J	1 Olionica Ebony		151,390

Model	Feet	Inches	Description	MSRP*	SMP*
PALATINO					
Verticals					
PUP-22C		48	Polished Mahogany/Cherry	5,000	5,000
PUP-22C		48	Satin Walnut	5,000	5,000
PUP-123T		48	Torino Polished Ebony	5,900	5,900
PUP-123T		48	Torino Polished Dark Walnut	6,200	6,200
PUP-125		50	Satin and Polished Ebony	5,950	5,950
PUP-125		50	Polished Mahogany/White	5,950	5,950
PUP-126		50	Capri Polished Ebony	6,900	6,900
PUP-126		50	Capri Polished Dark Walnut	7,500	7,500
Grands				,	,
PGD-50	5		Milano Polished Ebony	12,000	12,000
PGD-50	5		Milano Polished Dark Walnut	12,500	12,500
PGD-59	5	9	Roma Polished Ebony	13,400	13,400
PGD-62	6	2	Firenze Polished Ebony	15,400	15,400
			•		
PEARL RIVER					
Verticals		10	8.51.151		
EU 110		43	Polished Ebony	4,695	4,500
EU 110 Silent		43	Polished Ebony w/Silent System	7,995	6,900
EU 111PA		43	French Provincial Satin Cherry	5,995	5,300
EU 111PB		43	Mediterranean Satin Walnut	5,995	5,300
EU 111PC		43	Italian Provincial Satin Mahogany	5,995	5,300
UP 115E		45	Satin Ebony/Mahogany (School)	5,995	5,300
UP 115M5		45	Polished Ebony	4,995	4,700
UP 115M5		45	Polished Mahogany/Walnut/White	5,395	4,900
EU 118S		46.5	Polished Ebony w/Silver Hardware	5,595	5,190
EU 118S		46.5	Polished Mahogany/Walnut w/Silver Hardware	5,795	5,390
EU 122		48	Polished Ebony	6,695	5,790
EU 122		48	Polished Mahogany/Walnut/White	6,895	5,990
EU 122		48	Satin Cherry	6,895	5,990
EU 122S		48	Polished Ebony w/Silver Hardware	6,895	5,990
EU 122 Silent		48	Polished Ebony w/Silent System	9,195	8,190
EU 131		52	Polished Ebony	7,695	6,390
Grands					
GP 150	4	11	Hand-rubbed Satin Ebony	12,495	9,790
GP 150	4	11	Polished Ebony	11,995	9,390
GP 150	4	11	Polished Mahogany/Walnut/White	12,495	9,790
GP 150	4	11	Polished Sapele Mahogany/Artisan Walnut	12,995	10,190
GP 150SP	4	11	Polished Ebony w/Silver Plate/Hardware	12,495	9,790
GP 160	5	3	Hand-rubbed Satin Ebony	13,995	10,590
GP 160	5	3	Polished Ebony	13,495	10,190
GP 160	5	3	Polished Mahogany/Walnut/White	13,995	10,590
GP 160	5	3	Polished Sapele Mahogany/Artisan Walnut	13,995	10,990
GP 170	5	7	Hand-rubbed Satin Ebony	16,495	12,190
GP 170	5	7	Polished Ebony	15,995	11,790
GP 170	5	7	Polished Mahogany/Walnut	16,495	12,190
GP 170	5	7	Polished Sapele Mahogany/Artisan Walnut	16,995	12,590
GP 188A	6	2	Polished Ebony	18,995	14,390
GP 212	7	_	Polished Ebony	30,995	23,990
GP 275	9		Polished Ebony	79,995	60,990

^{*}See pricing explanation on page 194.

Model	Feet	Inches	Description	MSRP*	SMP*
PERZINA, GE	BR.				
Verticals					
GP-112 Komp	act	45	Continental Polished Ebony	8,890	8,000
GP-112 Komp	act	45	Continental Polished Walnut/Mahogany	9,450	8,250
GP-112 Komp		45	Continental Polished White	9,780	8,490
GP-115 Merit		45	Polished Ebony	9,660	8,430
GP-115 Merit		45	Polished Mahogany/Walnut	10,220	8,690
GP-115 Merit		45	Polished White	10,550	8,900
GP-115 Merit		45	Queen Anne Polished Ebony	10,220	8,600
GP-115 Merit		45	Queen Anne Polished Mahogany/Walnut	11,045	8,920
GP-115 Merit		45	Queen Anne Polished White	11,375	9,140
GP-122 Konsu	ımat	48	Polished Ebony	10,990	9,090
GP-122 Konsu	ımat	48	Polished Ebony with Chrome Hardware	12,090	10,000
GP-122 Konsu	ımat	48	Polished Mahogany/Walnut	11,375	9,400
GP-122 Konsu	ımat	48	Polished White	11,580	9,590
GP-122 Konsu	ımat	48	Queen Anne Polished Ebony	11,375	9,380
GP-122 Konsu	ımat	48	Queen Anne Polished Mahogany/Walnut	12,200	9,590
GP-122 Konsu	ımat	48	Queen Anne Polished White	12,500	9,800
GP-122 Balmo	ral	48	Designer Polished Ebony	12,285	9,300
GP-122 Balmo	oral	48	Designer Polished Ebony/Bubinga (two-tone)	13,300	10,840
GP-129 Kapito	ol	51	Polished Ebony	12,240	10,220
GP-129 Kapito	ol	51	Polished Mahogany/Walnut	12,860	10,420
GP-129 Kapito	ol	51	Polished White	13,520	10,630
GP-129 Kapito		51	Queen Anne Polished Ebony	13,520	10,420
GP-129 Kapito		51	Queen Anne Polished Mahogany/Walnut	13,565	10,630
GP-129 Kapito		51	Queen Anne Polished White	14,290	10,840
GP-130 Konze		51	Polished Ebony	14,840	11,460
Grands			,		
GBT-152 Prysi	m 5	1	Polished Ebony	22,570	16,440
GBT-152 Prysi		1	Polished Mahogany/Walnut	24,680	17,650
GBT-152 Prysi	m 5	1	Polished White	26,750	17,860
GBT-152 Prysi		1	Designer Polished Ebony/Bubinga (two-tone)	28,620	18,480
GBT-152 Prysi	m 5	1	Designer Polished Mahogany/Walnut with Burled Walnut Inlay	29,920	19,520
GBT-152 Prysi	m 5	1	Designer Queen Anne or Empire Polished Ebony	23,090	16,760
GBT-152 Prysi	m 5	1	Designer Queen Anne or Empire Polished Mahogany/Walnut	25,160	17,980
GBT-152 Prysi	m 5	1	Designer Queen Anne or Empire Polished White	27,260	18,180
GBT-160 Sylvr	5	5	Polished Ebony	29,360	18,690
GBT-160 Sylvr	5	5	Polished Mahogany/Walnut	31,460	19,850
GBT-160 Sylvr		5	Polished White	33,590	20,020
GBT-160 Sylvr	5	5	Designer Polished Ebony/Bubinga (two-tone)	37,610	23,900
GBT-160 Sylvr	5	5	Designer Polished Mahogany/Walnut with Burled Walnut Inlay	38,930	24,930
GBT-160 Sylvr		5	Designer Queen Anne or Empire Polished Ebony	30,330	19,020
GBT-160 Sylvr	5	5	Designer Queen Anne or Empire Polished Mahogany/Walnut	32,500	20,170
GBT-160 Sylvr		5	Designer Queen Anne or Empire Polished White	34,670	20,320
GBT-175 Gran	it 5	10	Polished Ebony	31,940	19,640
GBT-175 Gran	it 5	10	Polished Mahogany/Walnut	34,720	20,790
GBT-175 Gran	it 5	10	Polished White	37,160	20,980
GBT-175 Gran		10	Designer Polished Ebony/Bubinga (two-tone)	40,190	24,840
GBT-175 Gran	it 5	10	Designer Polished Mahogany/Walnut with Burled Walnut Inlay	41,300	25,880
GBT-175 Gran	it 5	10	Designer Queen Anne or Empire Polished Ebony	32,660	19,960
GBT-175 Gran	it 5	10	Designer Queen Anne or Empire Polished Mahogany/Walnut	35,340	12,120
GBT-175 Gran	it 5	10	Designer Queen Anne or Empire Polished White	38,810	21,300
GBT-187 Roya		2	Polished Ebony	35,770	20,590
GBT-187 Roya		2	Polished Mahogany/Walnut	37,270	21,750
GBT-187 Roya		2	Polished White	39,910	21,930
GBT-187 Roya		2	Designer Polished Ebony/Bubinga (two-tone)	44,020	25,780
		2	Designer Polished Mahogany/Walnut with Burled Walnut Inlay	45,650	26,820
GBT-187 Roya					

^{*}See pricing explanation on page 194.

Model	Feet	Inches	Description	MSRP*	SMP*
PERZINA, GE	EBR. (cc	ntinued)			
GBT-187 Roya	al 6	2	Designer Queen Anne or Empire Polished Mahogany/Walnut	37,940	22,070
GBT-187 Roya	al 6	2	Designer Queen Anne or Empire Polished White	40,350	22,250
PETROF					
Most models	are also	available i	in finishes other than those shown here.		
Verticals					
P 118 C1		46.25	Chippendale Polished Ebony	28,258	20,824
P 118 D1		46.25	Demi-Chippendale Polished Ebony	27,530	20,294
P 118 G2		46.25	Polished Ebony	26,794	19,760
P 118 M1		46.25	Polished Ebony	25,504	18,820
P 118 P1		46.25	Polished Ebony	24,980	18,440
P 118 R1		46.25	Rococo Satin White w/Gold Trim	29,930	22,046
P 118 S1		46.25	Continental Polished Ebony/White	21,968	16,250
P 122 N1		47.75	Polished Ebony	26,100	19,240
P 125 F1		49.25	Polished Ebony	26,990	19,900
P 125 G1		49.25	Polished Ebony	28,490	20,990
P 125 M1		49.25	Polished Ebony	28,090	20,700
P 127 NEXT		49.5	Satin Ebony with Chrome Legs	39,540	29,030
P 127 NEXT		49.5	Satin Wood Tones with Chrome Legs	43,790	32,120
P 131 M1		51	Polished Ebony	38,570	28,326
P 135 K1		53	Polished Ebony	45,980	33,714
Grands			,	ŕ	,
P 159	5	2	Bora Polished Ebony	75,910	55,480
P 159	5	2	Bora Demi-Chippendale Polished Ebony	81,990	58,778
P 173	5	6	Breeze Polished Ebony	79,990	58,448
P 173	5	6	Breeze Chippendale Polished Ebony	90,958	68,424
P 173	5	6	Breeze Demi-Chippendale Polished Ebony	88,700	68,780
P 173	5	6	Breeze Klasik Polished Ebony	89,240	70,776
P 173	5	6	Breeze Rococo Satin White w/Gold Trim	94,190	68,780
P 194	6	3	Storm Polished Ebony	83,964	61,336
P 194	6	3	Storm Styl Polished Ebony	96,060	70,136
P 210	6	10	Pasat Polished Ebony	119,990	87,500
P 237	7	9	Monsoon Polished Ebony	157,390	120,740
P 284	9	2	•		
_	9		Mistral Polished Ebony	217,084	158,152
Grands Grands			Mahogany/Walnut Upcharge White or Color Upcharge	2,400 1,600	2,400 1,600
PRAMBERGE					
Legacy Series		ıls			
LV-110		43	Continental Polished Ebony	7,495	5,498
LV-110 LV-43F		43	French Provincial Satin Cherry	8,095	5,898
LV-43F LV-43T		43	Satin Mahogany/Walnut	8,095	5,898
LV-431 LV-115		43 45	Satin Ebony	8,095 8,795	6,298
_			·	8.095	
LV-115 LV-115		45 45	Polished Ebony Polished Mahogany/Walnut	-,	5,898
			<u> </u>	8,995	6,398
LV-118 LV-118		46.5 46.5	Satin Ebony Polished Ebony	9,495 8,795	6,698 6,298
Signature Sei	ries Ver		Polistied Ebotty	6,793	0,290
	i.es vei		December Oction Observe (MA)	0.00=	0.000
PV-118F/R/T		46.5	Decorator Satin Cherry/Mahogany/Walnut	9,995	6,998
PV-118S		46.5	Satin Ebony	10,295	7,198
PV-118S		46.5	Polished Ebony	9,695	6,798
PV-121		47.5	Satin Ebony	11,695	7,998
PV-121		47.5	Polished Ebony	10,995	7,598
PV-132		52	Satin Ebony	12,995	8,798
PV-132		52	Polished Ebony	12,299	8,398

^{*}See pricing explanation on page 194.

Model	Feet	Inches	Description	MSRP*	SMP*
PRAMBERG	ER (cont	inued)			
J.P. Pramber	ger Platii	num Serie	s Verticals		
JP-132		52	Satin Ebony	16.295	10,798
JP-132		52	Polished Ebony	14,995	9,998
Verticals			Other wood finishes, add	,555	1,500
Legacy Serie	s Grands		·		,
LG-150	5		Satin Ebony	18,295	11,998
LG-150	5		Polished Ebony	17,295	11,398
LG-150	5		Polished Mahogany/Walnut	18,595	,
LG-157	5	2	Satin Ebony	19,995	12,798
LG-157	5	2	Polished Ebony	18,595	11,998
LG-157	5	2	Polished Ebony w/Bubinga or Pommele Accents	23,295	14,198
LG-157	5	2	Polished Fire Red	24,995	15,198
LG-175	5	9	Satin Ebony	24,595	14,598
LG-175	5	9	Polished Ebony	22,995	13,798
Signature Se	_	-	i dilanda Ebany	22,500	10,700
PS-157	5	2	Satin Ebony	24,695	15,198
PS-157	5	2	Polished Ebony	23,295	14,398
PS-157	5	2	Polished Ebony w/Bubinga or Pommele Accents	27,295	16,598
PS-175	5	9	Satin Ebony	26,695	16,398
PS-175	5	9	Polished Ebony	25,295	15,598
PS-175	6	1	Satin Ebony	27,695	16,998
			•		
PS-185	6	1	Polished Ebony	26,295	16,198
PS-208	6	10	Satin Ebony	34,995	21,798
PS-208	6	10	Polished Ebony	33,295	20,598
J.P. Pramber					
JP-179L	5	10	Satin Ebony	42,795	24,998
JP-179L	5	10	Polished Ebony	41,595	24,398
JP-179LF	5	10	French Provincial Satin Ebony	49,995	28,998
JP-179LF	5	10	French Provincial Lacquer Semigloss Cherry	49,995	28,998
JP-208B	6	10	Satin Ebony	54,295	31,398
JP-208B	6	10	Polished Ebony	53,195	30,798
JP-228C	7	6	Satin Ebony	59,095	34,198
JP-228C	7	6	Polished Ebony	58,495	33,798
JP-280E	9	2	Polished Ebony	174,595	98,998
Grands			Other wood finishes, add		2,000
RITMÜLLER	!				
Classic Verti	cals				
UP 110RB		43	French Provincial Satin Cherry	6,995	5,390
UP 110RB1		43	Italian Provincial Satin Walnut	6,995	5,390
UP 120RE		47.25	Satin Mahogany	8,195	6,190
UP 121RB		47.6	Polished Ebony	7,195	5,990
UP 121RB		47.6	Polished Mahogany/Walnut/White	7,695	6,190
Performance	e Vertical	s			
R1		47	Polished Ebony	8,595	6,790
R2		49	Polished Ebony w/Butterfly Lid	9,595	7,390
RB		49	Polished Ebony	9,595	7,390
Premium Ve	rticals				
UH 121R		48	Chippendale Polished Ebony	10,095	8,100
UH 121R		48	Chippendale Polished Sapele Mahogany	10,495	8,390
UH 121RA		48	Polished Ebony	9,995	7,990
UH 121RA Si	lent	48	Polished Ebony w/Silent System	13,495	10,390
UH 132R		52	Polished Ebony	12,195	9,190
J.1. 10211		0_	. J.Jilou Evoliy	12,100	0,100

^{*}See pricing explanation on page 194.

Model	Feet Inches	Description	MSRP*	SMP*
RITMÜLLER	(continued)			
Performance	Grands			
R8	4 11	Polished Ebony	14,195	10,190
R8	4 11	Polished Ebony w/Silver Plate/Hardware	14,495	10,790
R8	4 11	Polished Mahogany/White	14,495	10,790
R9	5 3	Polished Ebony	15,695	10,990
R9	5 3	Polished Mahogany/White	16,195	11,590
Premium Gra	ands	5 7	,	,
GH 148R	4 10	Polished Ebony	16,495	11,990
GH 148R	4 10	Polished Sapele Mahogany	16,995	12,790
GH 160R	5 3	Hand-rubbed Satin Ebony	19,495	14,790
GH 160R	5 3	Polished Ebony	18,995	13,990
GH 160R	5 3	Polished Sapele Mahogany	19,495	14,790
GH 160RA	5 3	Polished Ebony (round leg)	19,495	14,790
GH 170R	5 7	Polished Ebony	21,495	16,390
GH 188R	6 2	Polished Ebony	26,495	19,990
GH 212R	7	Polished Ebony	32,995	26,990
GH 275R	9	Polished Ebony	32,995 84,995	66,990
GI1275II	9	rollshed Eborry	04,993	00,990
RÖNISCH				
Verticals				
118 K	46.5	Polished Ebony	18,084	17,440
118 K	46.5	Satin Mahogany	18,810	18,100
118 K	46.5	Polished Mahogany	21,945	20,950
118 K	46.5	Satin Walnut	18,975	18,250
118 K	46.5	Polished Walnut	22,110	21,100
118 K	46.5	Satin European Cherry	19,305	18,550
118 K	46.5	Polished European Cherry	22,440	21,400
118 K	46.5	Satin German Oak	18,645	17,950
118 K	46.5	Polished White	19,734	18,940
118 K	46.5	Waxed Alder	17,985	17,350
118 K	46.5	Satin Heart Beech	18,315	17,650
118 K	46.5	Satin Ash	18,480	17,800
118 K	46.5	Satin Swiss Pear/Indian Apple	19,800	19,000
118 K	46.5	Polished Indian Apple	22,935	21,850
125 K	49	Polished Ebony	19,899	19,090
125 K	49	Satin Mahogany	20,229	19,390
125 K	49	Polished Mahogany	23,529	22,390
125 K	49	Satin Walnut	20,394	19,540
125 K	49	Polished Walnut	23,694	22,540
125 K	49	Satin European Cherry	20,724	19,840
125 K	49	Polished European Cherry	24,024	22,840
125 K	49	Polished White	21,549	20,590
125 K	49	Satin Bubinga	20,889	19,990
125 K	49	Polished Bubinga	24,189	22,990
125 K	49	Satin Swiss Pear/Indian Apple	21,219	20,290
125 K	49	Polished Indian Apple	24,519	23,290
125 K	49	Carl Ronisch Edition Satin Burl Walnut	23,859	22,690
125 K	49	Carl Ronisch Edition Polished Burl Walnut	27,159	25,690
132 K	52	Polished Ebony	22,275	21,250
132 K	52	Satin Mahogany	22,605	21,550
132 K	52	Polished Mahogany	25,905	24,550
132 K	52	Satin Walnut	22,770	21,700
132 K	52	Polished Walnut	26,070	24,700
132 K	52	Polished White	23,925	22,750
	J <u>C</u>	I CHOLICA VVIIIC	20,020	رح. ا

^{*}See pricing explanation on page 194.

	7000	Inches	Description	MSRP*	SMP*
RÖNISCH (c	ontinuea	<u></u>			
132 K		52	Polished Bubinga	26,565	25,150
132 K		52	Carl Ronisch Edition Satin Burl Walnut	26,565	25,150
132 K		52	Carl Ronisch Edition Polished Burl Walnut	29,865	28,150
Grands					
175 K	5	9	Polished Ebony	59,730	55,300
175 K	5	9	Satin Mahogany	61,050	56,500
175 K	5	9	Polished Mahogany	70,290	64,900
175 K	5	9	Satin Pyramid Mahogany	76,890	70,900
175 K	5	9	Polished Pyramid Mahogany	86,130	79,300
175 K	5	9	Satin Walnut	62,040	57,400
175 K	5	9	Polished Walnut	71,280	65,800
175 K	5	9	Satin European Cherry	63,690	58,900
175 K	5	9	Polished European Cherry	72,930	67,300
175 K	5	9	Polished White	63,030	58,300
175 K	5	9	Satin Bubinga	64,680	59,800
175 K	5	9	Polished Bubinga	73,920	68,200
175 K	5	9	Satin Rosewood	70,290	64,900
175 K	5	9	Polished Rosewood	79,530	73,300
175 K	5	9	Carl Ronisch Edition Satin Burl Walnut	73,590	67,900
175 K	5	9	Carl Ronisch Edition Polished Burl Walnut	82,830	76,300
186 K	6	1	Polished Ebony	64,680	59,800
186 K	6	1	Satin Mahogany	66,000	61,000
186 K	6	1	Polished Mahogany	75,240	69,400
186 K	6	1	Satin Pyramid Mahogany	81,840	75,400
186 K	6	1	Polished Pyramid Mahogany	91,080	83,800
186 K	6	1	Satin Walnut	66,990	61,900
186 K	6	1	Polished Walnut	76,230	70,300
186 K	6	1	Satin European Cherry	68,640	63,400
186 K	6	1	Polished European Cherry	77,880	71,800
186 K	6	1	Polished White	67,980	62,800
186 K	6	1	Satin Bubinga	69,630	64,300
186 K	6	1	Polished Bubinga	78,870	72,700
186 K	6	1	Satin Rosewood	75,240	69,400
186 K	6	1	Polished Rosewood	84,480	77,800
186 K	6	1	Carl Ronisch Edition Satin Burl Walnut	78,540	72,400
186 K	6	1	Carl Ronisch Edition Polished Burl Walnut	87,780	80,800
210 K	6	10.5	Polished Ebony	82,830	76,300
210 K	6	10.5	Polished White	86,130	79,300
SAMICK					
Grands					
NSG 158	5	2	Satin Ebony	25,495	19,198
NSG 158	5	2	Polished Ebony	23,995	18,198
NSG 175	5	7	Satin Ebony	27,995	20,998
NSG 175	5	7	Polished Ebony	26,495	19,998
NSG 175	6	1	Satin Ebony	30,795	22,998
100			Polished Ebony	,	21,998
NSG 186	6	1		29,395	

^{*}See pricing explanation on page 194.

Model	Feet Inches	Description	MSRP*	SMP*
SAUTER				
Standard wo	ood veneers are w	alnut, mahogany, ash, and alder.		
/erticals				
119	46	Peter Maly Concent Satin Ebony	32,000	32,000
119	46	Peter Maly Concent Califf Ebony	34,000	34,000
122	48	Ragazza Polished Ebony	36,500	36,500
122	48	Ragazza Satin Cherry	36,500	36,500
122	48	Ragazza Polished Cherry/Yew	43,000	43,000
122	48	Vista Polished Ebony	40,000	40,000
122	48	Vista Satin Maple	38,500	38,500
122	48	Vista Satin Cherry	40,000	40,000
122	48	Master Class Polished Ebony	47,000	47,000
122	48	Peter Maly Artes Polished Ebony	52,000	52,000
122	48	Peter Maly Artes Polished Palisander/Macassar	53,500	53,500
122	48	Peter Maly Artes Polished White	53,500	53,500
122	48	Peter Maly Pure Noble Polished Ebony/Veneers	49,000	49,000
122	48	Peter Maly Pure Noble Polished White/Red	50,000	50,000
122	48	Peter Maly Pure Basic Satin Ebony/Walnut	39,900	39,900
122	48	Peter Maly Pure Basic Satin White	39,900	39,900
122	48	Peter Maly Pure Basic Satin White/Maple	39,900	39,900
122	48	Peter Maly Rondo Polished Ebony	43,500	43,500
122	48	Peter Maly Rondo Satin Wenge	40,500	40,500
122	48	Peter Maly Vitrea Colored Ebony with Glass	41,000	41,000
122	48	Schulpiano Satin Beech/Black Ash	32,000	32,000
130	51	Master Class Polished Ebony	53,000	53,000
130	51	Competence Polished Ebony	45,500	45,500
130	51	Competence Satin Walnut	43,000	43,000
130	51	Sonder Polished Ebony w/Sostenuto		39,900
130	51		39,900	
	31	Sonder Polished Ebony w/o Sostenuto	36,000	36,000
Grands				
160	5 3	Alpha Polished Ebony	95,000	95,000
160	5 3	Alpha Satin Standard Wood Veneers	88,000	88,000
160	5 3	Chippendale Satin Cherry	99,000	99,000
160	5 3	Chippendale Satin Standard Wood Veneers	96,000	96,000
160	5 3	Noblesse Satin Cherry	106,000	106,000
160	5 3	Noblesse Polished Cherry	115,000	115,000
160	5 3	Noblesse Satin Burl Walnut	111,000	111,000
160	5 3	Noblesse Satin Standard Wood Veneers	106,000	106,000
160	5 3	Noblesse Polished Standard Wood Veneers	114,000	114,000
185	6 1	Delta Polished Ebony	106,000	106,000
185	6 1	Delta Polished Ebony w/Burl Walnut	110,000	110,000
185	6 1	Delta Polished Pyramid Mahogany	117,000	117,000
185	6 1	Delta Polished Bubinga	116,000	116,000
185	6 1	Delta Polished Rio Palisander	117,000	117,000
185	6 1	Delta Satin Maple with Silver	99,000	99,000
185	6 1	Delta Polished White	110,000	110,000
185	6 1	Delta Satin Standard Wood Veneers	98,000	98,000
185	6 1	Chippendale Satin Cherry	109,000	109,000
185	6 1	Chippendale Satin Standard Wood Veneers	105,000	105,000
185	6 1	Noblesse Satin Cherry	116,000	116,000
185	6 1	Noblesse Polished Cherry	129,000	129,000
185	6 1	Noblesse Satin Burl Walnut	121,000	121,000
185	6 1	Noblesse Satin Standard Wood Veneers	112,000	112,000
185	6 1	Noblesse Polished Standard Wood Veneers	126,000	126,000
210	6 11	Peter Maly Vivace Polished Ebony	150,000	150,000
	0 11	I Stor Mary VIVAGO I GIISHIGU EDONY	150,000	150,000

^{*}See pricing explanation on page 194.

Model	Feet Inches	Description	MSRP*	SMP*
SAUTER (co	ontinued)			
210	6 11	Peter Maly Vivace Polished White	150,000	150,000
220	7 3	Omega Polished Ebony	135,000	135,000
220	7 3	Omega Polished Burl Walnut	149,000	149,000
220	7 3	Omega Polished Pyramid Mahogany	148,000	148,000
220	7 3	Omega Satin Standard Wood Veneers	129,000	129,000
230	7 7	Peter Maly Ambiente Polished Ebony	170,000	170,000
230	7 7	Peter Maly Ambiente Polished Ebony w/Crystals	195,000	195,000
275	9	Concert Polished Ebony	230,000	230,000
SCHIMME	L			
Classic Serie	es Verticals			
C 116	46	Tradition Polished Ebony	24,915	20,932
C 116	46	Tradition Polished Mahogany/White	28,083	23,466
C 116	46	Tradition Satin Walnut/Cherry/Beech/Alder	24,915	20,932
C 116	46	Modern Polished Ebony	28,875	24,100
C 116	46	Modern Polished White	32,043	26,634
C 116	46	Modern Cubus Polished Ebony	28,875	24,100
C 116	46	Modern Cubus Polished White	32,043	26,634
C 120	48	Tradition Polished Ebony	27,028	22,622
C 120	48	Tradition Polished Mahogany/White	30,195	25,156
C 120	48	Tradition Satin Walnut/Cherry/Beech/Alder	27,028	22,622
C 120	48	Tradition Marketerie Polished Mahogany w/Inlay	32,305	26,844
C 120	48	Elegance Manhattan Polished Ebony	26,105	21,884
C 120	48	Elegance Manhattan Polished Mahogany/White	29,273	24,418
C 120	48	Royal Polished Ebony	29,665	24,732
C 120	48	Royal Intarsie Flora Polished Mahogany w/Inlays	34,945	28,956
C 126	50	Tradition Polished Ebony	32,833	27,266
C 126	50	Tradition Polished Mahogany/White	36,000	29,800
C 130	51	Tradition Polished Ebony	35,473	29,378
C 130	51	Tradition Polished Mahogany/White	38,640	31,912
Konzert Se	ries Verticals			
K 122	48	Elegance Polished Ebony	36,398	30,118
K 125	49	Tradition Polished Ebony	39,038	32,230
K 125	49	Tradition Polished Mahogany	43,260	35,608
K 132	52	Tradition Polished Ebony	44,580	36,664
K 132	52	Tradition Polished Mahogany	48,803	40,042
	nimmel Verticals	Ç ,	,	,
F 116	46	Polished Ebony	7,838	7,270
F 116	46	Polished White	8,213	7,570
F 121	48	Polished Ebony	8,963	8,170
F 121	48	Polished Walnut/White	9,338	8,470
F 123	49	Polished Ebony	10,088	9,070
F 123	49	Polished Mahogany/White	10,463	9,370
Wilhelm Sc	himmel Verticals			
W 114	46	Tradition Polished Ebony	17,130	14,704
W 114	46	Tradition Polished Mahogany/White	19,770	16,816
W 114	46	Modern Polished Ebony	18,050	15,440
W 114	46	Modern Polished White	20,075	17,060
W 114	46	Modern Swing Polished Ebony	17,130	14,704
W 114	46	Modern Swing Polished Mahogany/White	19,770	16,816
W 118	48	Tradition Polished Ebony	18,715	15,972
W 118	48	Tradition Polished Mahogany/White	21,353	18,082
W 123	49	Tradition Polished Ebony	20,298	17,238
W 123	49	Tradition Polished Mahogany/White	22,938	19,350

^{*}See pricing explanation on page 194.

Model	Feet	Inches	Description	MSRP*	SMP*
SCHIMMEL	. (continu	ed)			
Classic Serie	es Grands				
C 169	5	7	Tradition Polished Ebony	67,938	55,350
C 169	5	7	Tradition Polished Mahogany/White	74,535	60,628
C 189	6	2	Tradition Polished Ebony	71,895	58,516
C 189	6	2	Tradition Polished Mahogany/White	78,495	63,796
C 213	7		Tradition Polished Ebony	78,495	63,796
C 213	7		Tradition Polished Mahogany/White	85,093	69,074
Konzert Ser	ries Grand	s			
< 175	5	9	Tradition Polished Ebony	86,870	70,496
< 175	5	9	Tradition Polished Mahogany/White	94,558	76,646
< 195	6	4	Tradition Polished Ebony	94,558	76,646
K 195	6	4	Tradition Polished Mahogany/White	102,245	82,796
< 213	7		Glas Clear Acrylic and White or Black and Gold	320,313	257,250
< 213	7		Otmar Alt Polished Ebony w/Color Motifs	230,625	185,500
C 219	7	2	Tradition Polished Ebony	102,245	82,796
< 219	7	2	Tradition Polished Mahogany/White	109,933	88,946
< 230	7	6	Tradition Polished Ebony	117,620	95,096
< 256	8	4	Tradition Polished Ebony	132,995	107,396
< 280	9	2	Tradition Polished Ebony	153,495	123,796
Wilhelm Sch	himmel Gr	ands			
N 180	6		Tradition Polished Ebony	41,413	34,130
N 180	6		Tradition Polished Mahogany/White	46,693	38,354
N 206	6	10	Tradition Polished Ebony	50,650	41,520
W 206	6	10	Tradition Polished Mahogany/White	55,930	45,744
SCHULZ, G	EBR.				
Verticals					
G-20		48	Polished Ebony	9,995	9,590
G-20		48	Hand-rubbed Satin Walnut	12,895	12,500
Grands				,	,
G-58	5	5	Polished Ebony	18,995	18,995
	5 6	5	Polished Ebony Polished Ebony	18,995 23,995	18,995 23,995
G-58 G-86 G-288		5	•		
G-86	6 9		Polished Ebony	23,995	23,995
G-86 G-288 SCHULZE P	6 9 POLLMAN	'N	Polished Ebony	23,995	23,995
G-86 G-288 SCHULZE P	6 9 POLLMAN	IN s	Polished Ebony Polished Ebony	23,995 49,995	23,995 49,995
G-86 G-288 SCHULZE P Studio Serie SU115	6 9 POLLMAN	/N s 45	Polished Ebony Polished Ebony Polished Peacock Ebony	23,995 49,995 9,595	23,995 49,995 7,790
G-86 G-288 SCHULZE P Studio Serie SU115 SU115	6 9 POLLMAN	S 45 45	Polished Ebony Polished Ebony Polished Peacock Ebony Polished Peacock Mahogany	23,995 49,995 9,595 10,495	23,995 49,995 7,790 8,390
G-86 G-288 SCHULZE P Studio Serie SU115 SU115 SU118A	6 9 POLLMAN	s 45 45 46	Polished Ebony Polished Ebony Polished Peacock Ebony Polished Peacock Mahogany Polished Peacock Ebony	23,995 49,995 9,595 10,495 10,995	23,995 49,995 7,790 8,390 8,990
G-86 G-288 SCHULZE P Studio Serie SU115 SU115 SU118A SU118A	6 9 POLLMAN	45 45 45 46 46	Polished Ebony Polished Ebony Polished Peacock Ebony Polished Peacock Mahogany Polished Peacock Ebony Polished Peacock Ebony Polished Peacock Mahogany/Walnut	23,995 49,995 9,595 10,495 10,995 11,995	23,995 49,995 7,790 8,390 8,990 9,590
G-86 G-288 SCHULZE P Studio Serie	6 9 POLLMAN	s 45 45 46	Polished Ebony Polished Ebony Polished Peacock Ebony Polished Peacock Mahogany Polished Peacock Ebony	23,995 49,995 9,595 10,495 10,995	23,995 49,995 7,790 8,390

^{*}See pricing explanation on page 194.

Model	Feet	Inches	Description	MSRP*	SMP*
SCHUMAN	N				
Masterpiece	e Series G	rands			
160/GK	5	3	Polished Ebony (spade leg)	55,995	55,995
160/GK	5	3	Polished Briar Mahogany (spade leg)	59,995	59,995
160/GK	5	3	Polished Feather Mahogany (spade leg)	63,995	63,995
197/G5	6	6	Polished Ebony (spade leg)	77,995	76,990
197/G5	6	6	Polished Briar Mahogany (spade leg)	80,995	80,995
197/G5	6	6	Polished Feather Mahogany (spade leg)	84,995	84,995
Verticals					
C1-112		44	Polished Ebony	5,995	4,990
C1-112		44	Polished Mahogany	6,195	5,390
E2		48	Polished Ebony	6,495	5,890
K1-122		48	Polished Ebony	6,495	5,590
K1-122		48	Polished Mahogany	6,695	5,990
K1-122		48	Polished White	6,695	6,190
AL1		49	Polished Ebony	7,495	7,495
Grands			,	,	, . 30
GP-152	5		Polished Ebony	11,900	9,590
GI -132	5		Tollshed Epolity	11,300	9,590
SEILER					
<i>SEILER</i> Seiler Vertic	cals				
	cals	45	Primus, Polished Ebony	28,895	22,398
Seiler Verti	cals	45 45	Primus, Polished Ebony Mondial, Polished Ebony	28,895 30,495	22,398 23,598
Seiler Vertion SE-116	cals	-	Primus, Polished Ebony Mondial, Polished Ebony Mondial, Polished Rosewood	28,895 30,495 41,295	23,598
Seiler Vertio SE-116 SE-116	cals	45	Mondial, Polished Ebony Mondial, Polished Rosewood	30,495 41,295	23,598 31,598
Seiler Vertion SE-116 SE-116 SE-116	cals	45 45	Mondial, Polished Ebony Mondial, Polished Rosewood Konsole, Polished Ebony	30,495 41,295 34,595	23,598 31,598 26,598
Seiler Vertion SE-116 SE-116 SE-116 SE-116	cals	45 45 45 45	Mondial, Polished Ebony Mondial, Polished Rosewood Konsole, Polished Ebony Impuls, Polished Ebony	30,495 41,295 34,595 30,495	23,598 31,598 26,598 23,598
Seiler Vertic SE-116 SE-116 SE-116 SE-116 SE-116 SE-116	cals	45 45 45 45 45	Mondial, Polished Ebony Mondial, Polished Rosewood Konsole, Polished Ebony Impuls, Polished Ebony Clou, Polished Ebony	30,495 41,295 34,595 30,495 35,895	23,598 31,598 26,598 23,598 27,598
Seiler Vertic SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-116	cals	45 45 45 45 45 45	Mondial, Polished Ebony Mondial, Polished Rosewood Konsole, Polished Ebony Impuls, Polished Ebony Clou, Polished Ebony Accent, Polished Ebony	30,495 41,295 34,595 30,495 35,895 35,895	23,598 31,598 26,598 23,598 27,598 27,598
Seiler Vertic SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-1122	cals	45 45 45 45 45 45 45 48	Mondial, Polished Ebony Mondial, Polished Rosewood Konsole, Polished Ebony Impuls, Polished Ebony Clou, Polished Ebony Accent, Polished Ebony Primus, Polished Ebony	30,495 41,295 34,595 30,495 35,895 35,895 38,595	23,598 31,598 26,598 23,598 27,598 27,598 29,598
Seiler Vertic SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-122 SE-126	cals	45 45 45 45 45 45 45 48 49	Mondial, Polished Ebony Mondial, Polished Rosewood Konsole, Polished Ebony Impuls, Polished Ebony Clou, Polished Ebony Accent, Polished Ebony Primus, Polished Ebony Konsole, Polished Ebony	30,495 41,295 34,595 30,495 35,895 35,895 38,595 42,695	23,598 31,598 26,598 23,598 27,598 27,598 29,598 32,598
Seiler Vertic SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-122 SE-126 SE-126	cals	45 45 45 45 45 45 45 48 49	Mondial, Polished Ebony Mondial, Polished Rosewood Konsole, Polished Ebony Impuls, Polished Ebony Clou, Polished Ebony Accent, Polished Ebony Primus, Polished Ebony Konsole, Polished Ebony Konsole, Satin Walnut	30,495 41,295 34,595 30,495 35,895 35,895 38,595 42,695 43,995	23,598 31,598 26,598 23,598 27,598 27,598 29,598 32,598 33,598
Seiler Vertic SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-122 SE-126 SE-126 SE-126	cals	45 45 45 45 45 45 45 48 49 49	Mondial, Polished Ebony Mondial, Polished Rosewood Konsole, Polished Ebony Impuls, Polished Ebony Clou, Polished Ebony Accent, Polished Ebony Primus, Polished Ebony Konsole, Polished Ebony Konsole, Satin Walnut Attraction, Polished Ebony	30,495 41,295 34,595 30,495 35,895 35,895 38,595 42,695 43,995 45,695	23,598 31,598 26,598 23,598 27,598 27,598 29,598 32,598 33,598 34,798
Seiler Vertic SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-122 SE-126 SE-126 SE-126 SE-126 SE-132	cals	45 45 45 45 45 45 48 49 49 49	Mondial, Polished Ebony Mondial, Polished Rosewood Konsole, Polished Ebony Impuls, Polished Ebony Clou, Polished Ebony Accent, Polished Ebony Primus, Polished Ebony Konsole, Polished Ebony Konsole, Satin Walnut Attraction, Polished Ebony Consert, Polished Ebony	30,495 41,295 34,595 30,495 35,895 35,895 38,595 42,695 43,995 45,695 52,395	23,598 31,598 26,598 23,598 27,598 27,598 29,598 32,598 33,598 34,798 39,798
Seiler Vertic SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-122 SE-126 SE-126 SE-126 SE-126 SE-132 SE-132	cals	45 45 45 45 45 45 48 49 49 49 52 52	Mondial, Polished Ebony Mondial, Polished Rosewood Konsole, Polished Ebony Impuls, Polished Ebony Clou, Polished Ebony Accent, Polished Ebony Primus, Polished Ebony Konsole, Polished Ebony Konsole, Satin Walnut Attraction, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony	30,495 41,295 34,595 30,495 35,895 35,895 38,595 42,695 43,995 45,695 52,395 55,095	23,598 31,598 26,598 23,598 27,598 27,598 29,598 32,598 33,598 34,798 39,798 41,798
Seiler Vertic SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-122 SE-126 SE-126 SE-126 SE-126 SE-132 SE-132 SE-132	cals	45 45 45 45 45 45 48 49 49 49	Mondial, Polished Ebony Mondial, Polished Rosewood Konsole, Polished Ebony Impuls, Polished Ebony Clou, Polished Ebony Accent, Polished Ebony Primus, Polished Ebony Konsole, Polished Ebony Konsole, Satin Walnut Attraction, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony w/SMR Consert, Polished Ebony w/Rec Panel	30,495 41,295 34,595 30,495 35,895 35,895 42,695 42,695 43,995 45,695 52,395 55,095	23,598 31,598 26,598 23,598 27,598 27,598 29,598 32,598 33,598 34,798 39,798 41,798
Seiler Vertic SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-122 SE-126 SE-126 SE-126 SE-126 SE-132 SE-132		45 45 45 45 45 45 48 49 49 52 52 52 52	Mondial, Polished Ebony Mondial, Polished Rosewood Konsole, Polished Ebony Impuls, Polished Ebony Clou, Polished Ebony Accent, Polished Ebony Primus, Polished Ebony Konsole, Polished Ebony Konsole, Satin Walnut Attraction, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony w/SMR Consert, Polished Ebony w/Rec Panel Consert, Polished Ebony w/Rec Panel	30,495 41,295 34,595 30,495 35,895 35,895 38,595 42,695 43,995 45,695 52,395 55,095	23,598 31,598 26,598 23,598 27,598 27,598 29,598 32,598 33,598 34,798 39,798 41,798
Seiler Vertic SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-122 SE-126 SE-126 SE-126 SE-126 SE-132 SE-132 SE-132 SE-132 SE-132		45 45 45 45 45 45 48 49 49 52 52 52 52	Mondial, Polished Ebony Mondial, Polished Rosewood Konsole, Polished Ebony Impuls, Polished Ebony Clou, Polished Ebony Accent, Polished Ebony Primus, Polished Ebony Konsole, Polished Ebony Konsole, Satin Walnut Attraction, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony w/SMR Consert, Polished Ebony w/Rec Panel Consert, Polished Ebony w/Rec Panel	30,495 41,295 34,595 30,495 35,895 35,895 42,695 42,695 43,995 45,695 52,395 55,095	23,598 31,598 26,598 23,598 27,598 27,598 29,598 32,598 33,598 34,798 39,798 41,798
Seiler Vertic SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-122 SE-126 SE-126 SE-126 SE-126 SE-132 SE-132 SE-132 SE-132 SE-132 SE-132 SE-132 SE-132 SE-132		45 45 45 45 45 48 49 49 52 52 52 52 52 es Vertical	Mondial, Polished Ebony Mondial, Polished Rosewood Konsole, Polished Ebony Impuls, Polished Ebony Clou, Polished Ebony Accent, Polished Ebony Primus, Polished Ebony Konsole, Polished Ebony Konsole, Satin Walnut Attraction, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony w/SMR Consert, Polished Ebony w/Rec Panel Consert, Polished Ebony w/Rec Panel	30,495 41,295 34,595 30,495 35,895 35,895 38,595 42,695 43,995 45,695 52,395 55,095 55,095 55,795	23,598 31,598 26,598 23,598 27,598 27,598 29,598 32,598 33,598 34,798 41,798 43,798
Seiler Vertic SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-122 SE-126 SE-126 SE-126 SE-132		45 45 45 45 45 48 49 49 52 52 52 52 52 es Vertical	Mondial, Polished Ebony Mondial, Polished Rosewood Konsole, Polished Ebony Impuls, Polished Ebony Clou, Polished Ebony Accent, Polished Ebony Primus, Polished Ebony Konsole, Polished Ebony Konsole, Satin Walnut Attraction, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony w/SMR Consert, Polished Ebony w/Rec Panel Consert, Polished Ebony w/Rec Panel/SMR Is Primus, Satin Ebony Primus, Polished Ebony	30,495 41,295 34,595 30,495 35,895 35,895 38,595 42,695 43,995 45,695 52,395 55,095 55,095 55,795	23,598 31,598 26,598 23,598 27,598 27,598 29,598 32,598 33,598 34,798 41,798 41,798 43,798
Seiler Vertic SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-122 SE-126 SE-126 SE-126 SE-132		45 45 45 45 45 48 49 49 52 52 52 52 52 65 49 49 49	Mondial, Polished Ebony Mondial, Polished Rosewood Konsole, Polished Ebony Impuls, Polished Ebony Clou, Polished Ebony Accent, Polished Ebony Primus, Polished Ebony Konsole, Polished Ebony Konsole, Satin Walnut Attraction, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony w/SMR Consert, Polished Ebony w/Rec Panel Consert, Polished Ebony w/Rec Panel/SMR Is Primus, Satin Ebony Primus, Satin Ebony Primus, Satin Ebony w/SMR	30,495 41,295 34,595 30,495 35,895 35,895 38,595 42,695 43,995 45,695 52,395 55,095 55,095 55,795	23,598 31,598 26,598 23,598 27,598 29,598 32,598 33,598 34,798 41,798 43,798 10,798 10,798 11,798
Seiler Vertic SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-122 SE-126 SE-126 SE-126 SE-132 SE-132 SE-132 SE-132 SE-132 SE-132 Eduard Seile ED-126 ED-126 ED-126M ED-126M		45 45 45 45 45 48 49 49 49 52 52 52 52 52 65 49 49 49 49	Mondial, Polished Ebony Mondial, Polished Rosewood Konsole, Polished Ebony Impuls, Polished Ebony Clou, Polished Ebony Accent, Polished Ebony Primus, Polished Ebony Konsole, Polished Ebony Konsole, Satin Walnut Attraction, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony w/SMR Consert, Polished Ebony w/Rec Panel Consert, Polished Ebony w/Rec Panel/SMR Is Primus, Satin Ebony Primus, Polished Ebony w/SMR Primus, Polished Ebony w/SMR	30,495 41,295 34,595 30,495 35,895 35,895 38,595 42,695 43,995 45,695 52,395 55,095 55,095 55,795 13,295 12,695 14,595 14,095	23,598 31,598 26,598 23,598 27,598 27,598 29,598 33,598 34,798 41,798 41,798 10,798 11,398
Seiler Vertic SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-122 SE-126 SE-126 SE-126 SE-132 SE-132 SE-132 SE-132 SE-132 SE-132 Eduard Seile ED-126 ED-126 ED-126M ED-132		45 45 45 45 45 48 49 49 49 52 52 52 52 52 es Vertical 49 49 49 49	Mondial, Polished Ebony Mondial, Polished Rosewood Konsole, Polished Ebony Impuls, Polished Ebony Clou, Polished Ebony Accent, Polished Ebony Primus, Polished Ebony Konsole, Polished Ebony Konsole, Satin Walnut Attraction, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony w/SMR Consert, Polished Ebony w/Rec Panel Consert, Polished Ebony w/Rec Panel/SMR Is Primus, Satin Ebony Primus, Satin Ebony Primus, Satin Ebony w/SMR Primus, Polished Ebony w/SMR Konzert, Satin Ebony	30,495 41,295 34,595 30,495 35,895 35,895 38,595 42,695 43,995 45,695 52,395 55,095 55,095 55,795 13,295 12,695 14,595 14,095	23,598 31,598 26,598 23,598 27,598 27,598 29,598 33,598 34,798 39,798 41,798 43,798 10,798 11,398 11,398
Seiler Vertic SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-122 SE-126 SE-126 SE-128 SE-128 SE-132 SE-132 SE-132 SE-132 SE-132 Eduard Seile ED-126 ED-126 ED-126M ED-132 ED-132		45 45 45 45 45 48 49 49 49 52 52 52 52 es Vertical 49 49 49 49 49 52 52	Mondial, Polished Ebony Mondial, Polished Rosewood Konsole, Polished Ebony Impuls, Polished Ebony Clou, Polished Ebony Accent, Polished Ebony Primus, Polished Ebony Konsole, Polished Ebony Konsole, Satin Walnut Attraction, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony w/SMR Consert, Polished Ebony w/Rec Panel Consert, Polished Ebony w/Rec Panel/SMR Is Primus, Satin Ebony Primus, Satin Ebony Primus, Polished Ebony w/SMR Konzert, Satin Ebony Konzert, Satin Ebony Konzert, Polished Ebony	30,495 41,295 34,595 30,495 35,895 35,895 38,595 42,695 43,995 45,695 52,395 55,095 55,795 13,295 12,695 14,595 14,095 14,095 13,495	23,598 21,598 22,598 27,598 27,598 29,598 33,598 34,798 41,798 41,798 41,798 11,398 11,398 11,398 10,998
Seiler Vertic SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-116 SE-122 SE-126 SE-126 SE-128 SE-132 SE-132 SE-132 SE-132 SE-132 SE-132 Eduard Seile ED-126 ED-126 ED-126M ED-132		45 45 45 45 45 48 49 49 49 52 52 52 52 52 es Vertical 49 49 49 49	Mondial, Polished Ebony Mondial, Polished Rosewood Konsole, Polished Ebony Impuls, Polished Ebony Clou, Polished Ebony Accent, Polished Ebony Primus, Polished Ebony Konsole, Polished Ebony Konsole, Satin Walnut Attraction, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony Consert, Polished Ebony w/SMR Consert, Polished Ebony w/Rec Panel Consert, Polished Ebony w/Rec Panel/SMR Is Primus, Satin Ebony Primus, Satin Ebony Primus, Satin Ebony w/SMR Primus, Polished Ebony w/SMR Konzert, Satin Ebony	30,495 41,295 34,595 30,495 35,895 35,895 38,595 42,695 43,995 45,695 52,395 55,095 55,095 55,795 13,295 12,695 14,595 14,095	23,598 31,598 26,598 23,598 27,598 29,598 32,598 33,598 34,798 41,798 43,798

^{*}See pricing explanation on page 194.

Model	Feet	Inches	Description	MSRP*	SMP*
SEILER (con	tinued)				
Johannes Sei	iler Verti	icals			
GS-116N		45.5	Satin Ebony w/Nickel Hardware	9,999	8,398
GS-116N		45.5	Polished Ebony w/Nickel Hardware	9,395	7,998
GS-247		46.5	Satin Ebony	10,795	8,998
GS-247		46.5	Polished Ebony	9,995	8,398
GS-247		46.5	Satin Walnut	10,795	8,998
GS-118		47	Satin Ebony	10,195	8,598
GS-118		47	Polished Ebony	9,695	8,198
GS-121		47.5	Ditto, Polished Ebony w/Silver accent	11,595	9,598
GS-122		48.5	Satin Ebony	10,995	9,198
GS-122		48.5	Polished Ebony	10,195	8,598
Verticals			Other wood finishes, add		1,500
Seiler Grand	s				
SE-168	5	6	Virtuoso, Polished Ebony	96,395	72,398
SE-168	5	6	Virtuoso, Polished Mahogany	115,795	86,798
SE-186	6	2	Maestro, Polished Ebony	113,195	84,798
SE-186	6	2	Maestro, Polished Mahogany	121,295	90,798
SE-186	6	2	Maestro, Polished Rosewood	129,595	96,998
SE-186	6	2	Ziricote, Polished Ebony	122,595	91,798
SE-186	6	2	Louvre, Polished Cherry	152,895	114,198
SE-186	6	2	Florenz, Polished Mahogany	152,895	114,198
SE-208	6	10	Professional, Polished Ebony	126,895	94,998
SE-242	8	10	Konzert, Polished Ebony	167,895	125,398
SE-278	9	2	Konzert, Polished Ebony	272,695	202,998
Eduard Seile	-		Nonzert, i dished Esony	212,000	202,000
			Vistuage Catin Theory	20.005	00.000
ED-168	5	6	Virtuoso, Satin Ebony	36,995	28,398
ED-168	5	6	Virtuoso, Polished Ebony	36,495	27,998
ED-168HS	5	6	Heritage, Satin Ebony	45,995	34,998
ED-168HS	5	6	Heritage, Polished Ebony	44,895	34,198
ED-186	6	2	Maestro, Satin Ebony	45,095	34,398
ED-186	6	2	Maestro, Polished Ebony	43,495	33,198
ED-186A	6	2	Custom, Polished Ebony	83,495	62,798
Grands	:I C	al a	Other wood finishes, add		2,000
Johannes Sei			- · · -		
GS-160	5	3	Satin Ebony	25,395	19,798
GS-160	5	3	Polished Ebony	23,995	18,798
GS-160LN	5	3	Satin Ebony (M Leg Style)	28,595	22,198
GS-160LN	5	3	Polished Ebony (M Leg Style)	27,295	21,198
GS-175	5	9	Satin Ebony	27,795	21,598
GS-175	5	9	Polished Ebony	26,395	20,598
GS-186	6	2	Satin Ebony	29,695	22,998
GS-186	6	2	Polished Ebony	28,595	22,198
Grands			Other wood finishes, add		2,000

^{*}See pricing explanation on page 194.

Model Fee	et Inches	Description	MSRP*	SMP*
STEINBERG, G.				
Verticals				
RH-111 Nicosia	45	Polished Ebony	8,240	7,220
RH-111 Nicosia	45	Polished Mahogany/Walnut	8,460	7,430
RH-111 Nicosia	45	Polished White	8,680	7,640
RH-115 Slate	45	Polished Ebony	8,460	7,430
RH-115 Slate	45	Polished Mahogany/Walnut	8,680	7,550
RH-115 Slate	45	Polished White	9,010	7,780
RH-115 Slate	45	Queen Anne Polished Ebony	8,680	7,550
RH-115 Slate	45	Queen Anne Polished Mahogany/Walnut	8,900	7,660
RH-115 Slate	45	Queen Anne Polished White	9,120	7,880
RH-119 Splendit	47	Polished Ebony	8,900	7,860
RH-119 Splendit	47	Polished Mahogany/Walnut	9,120	8,070
RH-119 Splendit	47	Polished White	9,230	8,280
RH-119 Splendit	47	Queen Anne Polished Ebony	9,120	7,970
RH-119 Splendit	47	Queen Anne Polished Mahogany/Walnut	9,340	8,180
RH-119 Splendit	47	Queen Anne Polished White	9,450	8,380
RH-123 Performance	e 49	Polished Ebony	9,340	8,070
RH-123 Performance	e 49	Queen Anne Polished Ebony	9,670	8,280
RH-126 Sienna	50	Polished Ebony	10,440	8,700
RH-126 Sienna	50	Queen Anne Polished Ebony	10,770	8,900
Grands		·		
GBT-152 Sovereigns	5 1	Polished Ebony	19,470	14,710
GBT-152 Sovereigns		Polished Mahogany/Walnut	21,200	15,820
GBT-152 Sovereigns		Polished White	22,960	16,160
GBT-152 Sovereigns		Queen Anne or Empire Polished Ebony	19,855	15,120
GBT-152 Sovereigns		Queen Anne or Empire Polished Mahogany/Walnut	21,615	16,290
GBT-152 Sovereigns		Queen Anne or Empire Polished White	23,485	16,560
GBT-160 Stockholm		Polished Ebony	25,160	16,910
GBT-160 Stockholm	5 5	Polished Mahogany/Walnut	26,975	17,950
GBT-160 Stockholm	5 5	Polished White	28,790	18,160
GBT-160 Stockholm	5 5	Queen Anne or Empire Polished Ebony	26,015	17,190
GBT-160 Stockholm	5 5	Queen Anne or Empire Polished Mahogany/Walnut	27,855	18,450
GBT-160 Stockholm	5 5	Queen Anne or Empire Polished White	29,670	18,660
GBT-175 Schwerin 5	5 10	Polished Ebony	28,460	17,620
GBT-175 Schwerin 5	5 10	Polished Mahogany/Walnut	29,725	19,080
GBT-175 Schwerin 5	5 10	Polished White	31,870	19,280
GBT-175 Schwerin 5	5 10	Queen Anne or Empire Polished Ebony	27,965	18,160
GBT-175 Schwerin 5	5 10	Queen Anne or Empire Polished Mahogany/Walnut	30,275	19,410
GBT-175 Schwerin 5	5 10	Queen Anne or Empire Polished White	33,190	19,620
GBT-187 6 Amsterdam	5 2	Polished Ebony	30,635	18,790
GBT-187 6 Amsterdam	6 2	Polished Mahogany/Walnut	31,870	19,820
GBT-187 6 Amsterdam	6 2	Polished White	34,155	20,030
GBT-187 6 Amsterdam	5 2	Queen Anne or Empire Polished Ebony	31,430	19,100
GBT-187 6 Amsterdam	5 2	Queen Anne or Empire Polished Mahogany/Walnut	32,475	20,240
GBT-187 6 Amsterdam	5 2	Queen Anne or Empire Polished White	34,510	20,450

^{*}See pricing explanation on page 194.

Model	Feet Inches	Description	MSRP*	SMP*
STEINBERG, V	VILH.			
Verticals				
P118	45.5	Polished Ebony		6,590
P118	45.5	Polished White		7,290
P118C	45.5	Polished Ebony w/Chrome Hardware		6,690
P118C	45.5	Polished White w/Chrome Hardware		7,390
Signature 117	46	Polished Ebony		20,180
Signature 117	46	Polished White		21,780
P121C	47.5	Polished Ebony w/Chrome Hardware		7,390
P121C	47.5	Polished White w/Chrome Hardware		8,090
Signature 125	49	Polished Ebony		22,998
Signature 125	49	Polished White		24,698
P125E	49.5	Polished Ebony		8,590
P125EC	49.5	Polished Ebony w/Chrome Hardware		8,690
Signature 130	51	Polished Ebony		26,980
Signature 130	51	Polished White		28,680
Grands				
P152	5	Polished Fhony		14,590
P152 P152	5 5	Polished Ebony Polished White		15,890
P165	5 5	Polished Ebony		16,990
P165	5 5	Polished White		18,290
P178	5 10	Polished Ebony		22,990
Signature 188	6 2	Polished Ebony		54,980
Signature 212	6 11	Polished Ebony		60,980
STEINGRAEBE Prices include l				
STEINGRAEBE Prices include l Verticals	bench.		40.000	45.740
STEINGRAEBE Prices include l Verticals 122 T	bench. 48	Satin and Polished Ebony	46,990	45,740
STEINGRAEBE Prices include & Verticals 122 T 122 T	48 48	Satin and Polished White	47,760	46,510
STEINGRAEBE Prices include & Verticals 122 T 122 T 122 T	48 48 48	Satin and Polished White Polished Ebony w/Twist & Change Panels	47,760 52,840	46,510 51,590
STEINGRAEBE Prices include & Verticals 122 T 122 T 122 T 122 T	48 48 48 48	Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers	47,760 52,840 57,090	46,510 51,590 55,840
STEINGRAEBE Prices include & Verticals 122 T 122 T 122 T 122 T 122 T	48 48 48 48 48	Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers	47,760 52,840 57,090 62,690	46,510 51,590 55,840 61,440
STEINGRAEBE Prices include & Verticals 122 T 122 T 122 T 122 T 122 T 122 T	48 48 48 48 48 48	Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers	47,760 52,840 57,090 62,690 59,040	46,510 51,590 55,840 61,440 57,790
STEINGRAEBE Prices include & Verticals 122 T 122 T 122 T 122 T 122 T 122 T 122 T	48 48 48 48 48 48 48	Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Polished Special Veneers	47,760 52,840 57,090 62,690 59,040 64,630	46,510 51,590 55,840 61,440 57,790 63,380
STEINGRAEBE Prices include & Verticals 122 T 122 T 122 T 122 T 122 T 122 T 122 T 122 T	48 48 48 48 48 48 48 48	Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Polished Special Veneers Satin Extraordinary Veneers	47,760 52,840 57,090 62,690 59,040 64,630 71,490	46,510 51,590 55,840 61,440 57,790 63,380 70,240
STEINGRAEBE Prices include & Verticals 122 T 122 T 122 T 122 T 122 T 122 T 122 T 122 T 122 T	48 48 48 48 48 48 48 48 48	Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Polished Special Veneers Satin Extraordinary Veneers Polished Extraordinary Veneers	47,760 52,840 57,090 62,690 59,040 64,630 71,490 77,100	46,510 51,590 55,840 61,440 57,790 63,380 70,240 75,850
STEINGRAEBE Prices include & Verticals 122 T 122 T	48 48 48 48 48 48 48 48 48	Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Polished Special Veneers Satin Extraordinary Veneers Polished Extraordinary Veneers Satin and Polished Ebony	47,760 52,840 57,090 62,690 59,040 64,630 71,490 77,100 49,610	46,510 51,590 55,840 61,440 57,790 63,380 70,240 75,850 48,360
STEINGRAEBE Prices include & Verticals 122 T 122 T	48 48 48 48 48 48 48 48 48 48	Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Polished Special Veneers Satin Extraordinary Veneers Polished Extraordinary Veneers Satin and Polished Ebony Satin and Polished White	47,760 52,840 57,090 62,690 59,040 64,630 71,490 77,100 49,610 50,370	46,510 51,590 55,840 61,440 57,790 63,380 70,240 75,850 48,360 49,120
STEINGRAEBE Prices include & Verticals 122 T 122 T	48 48 48 48 48 48 48 48 48	Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Polished Special Veneers Satin Extraordinary Veneers Polished Extraordinary Veneers Satin and Polished Ebony Satin and Polished White Polished Ebony w/Twist & Change Panels	47,760 52,840 57,090 62,690 59,040 64,630 71,490 77,100 49,610 50,370 55,490	46,510 51,590 55,840 61,440 57,790 63,380 70,240 75,850 48,360 49,120 54,240
STEINGRAEBE Prices include & Verticals 122 T 122 T	48 48 48 48 48 48 48 48 48 48 48	Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Polished Special Veneers Satin Extraordinary Veneers Polished Extraordinary Veneers Satin and Polished Ebony Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers	47,760 52,840 57,090 62,690 59,040 64,630 71,490 77,100 49,610 50,370 55,490 59,730	46,510 51,590 55,840 61,440 57,790 63,380 70,240 75,850 48,360 49,120 54,240 58,480
STEINGRAEBE Prices include & Verticals 122 T 122 T	48 48 48 48 48 48 48 48 48 48 48	Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Polished Special Veneers Satin Extraordinary Veneers Polished Extraordinary Veneers Satin and Polished Ebony Satin and Polished White Polished Ebony w/Twist & Change Panels	47,760 52,840 57,090 62,690 59,040 64,630 71,490 77,100 49,610 50,370 55,490 59,730 65,300	46,510 51,590 55,840 61,440 57,790 63,380 70,240 75,850 48,360 49,120 54,240 58,480 64,050
STEINGRAEBE Prices include & Verticals 122 T 122 T	48 48 48 48 48 48 48 48 48 48 48 48	Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Polished Special Veneers Satin Extraordinary Veneers Polished Extraordinary Veneers Satin and Polished Ebony Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers	47,760 52,840 57,090 62,690 59,040 64,630 71,490 77,100 49,610 50,370 55,490 59,730 65,300 61,660	46,510 51,590 55,840 61,440 57,790 63,380 70,240 75,850 48,360 49,120 54,240 58,480 64,050 60,410
STEINGRAEBE Prices include & Verticals 122 T 122 T-SFM 122 T-SFM 122 T-SFM 122 T-SFM 122 T-SFM	48 48 48 48 48 48 48 48 48 48 48 48 48	Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Polished Special Veneers Satin Extraordinary Veneers Polished Extraordinary Veneers Satin and Polished Ebony Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers	47,760 52,840 57,090 62,690 59,040 64,630 71,490 77,100 49,610 50,370 55,490 59,730 65,300 61,660 67,250	46,510 51,590 55,840 61,440 57,790 63,380 70,240 75,850 48,360 49,120 54,240 58,480 64,050 60,410 66,000
STEINGRAEBE Prices include & Verticals 122 T 122 T	48 48 48 48 48 48 48 48 48 48 48 48 48 4	Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Polished Special Veneers Satin Extraordinary Veneers Polished Extraordinary Veneers Satin and Polished Ebony Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Polished Special Veneers	47,760 52,840 57,090 62,690 59,040 64,630 71,490 77,100 49,610 50,370 55,490 59,730 65,300 61,660	46,510 51,590 55,840 61,440 57,790 63,380 70,240 75,850 48,360 49,120 54,240 58,480 64,050 60,410
STEINGRAEBE Prices include & Verticals 122 T 122 T 125 F 122 T 125 F 126 T 127	48 48 48 48 48 48 48 48 48 48 48 48 48 4	Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Polished Special Veneers Satin Extraordinary Veneers Polished Extraordinary Veneers Satin and Polished Ebony Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Satin Special Veneers Satin Extraordinary Veneers Satin Extraordinary Veneers	47,760 52,840 57,090 62,690 59,040 64,630 71,490 77,100 49,610 50,370 55,490 59,730 65,300 61,660 67,250 74,140	46,510 51,590 55,840 61,440 57,790 63,380 70,240 75,850 48,360 49,120 54,240 58,480 64,050 60,410 66,000 72,890
STEINGRAEBE Prices include & Verticals 122 T 122 T-SFM 122 T-SFM	48 48 48 48 48 48 48 48 48 48 48 48 48 4	Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Polished Special Veneers Satin Extraordinary Veneers Polished Extraordinary Veneers Satin and Polished Ebony Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Satin Special Veneers Polished Special Veneers Satin Extraordinary Veneers Polished Extraordinary Veneers	47,760 52,840 57,090 62,690 59,040 64,630 71,490 77,100 49,610 50,370 55,490 59,730 65,300 61,660 67,250 74,140 79,700	46,510 51,590 55,840 61,440 57,790 63,380 70,240 75,850 48,360 49,120 54,240 58,480 64,050 60,410 66,000 72,890 78,450
STEINGRAEBE Prices include & Verticals 122 T 122 T-SFM 122 T-SFM 120 T-SFM	48 48 48 48 48 48 48 48 48 48 48 48 48 4	Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Polished Special Veneers Satin Extraordinary Veneers Polished Extraordinary Veneers Satin and Polished Ebony Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Satin Special Veneers Satin Extraordinary Veneers Satin Extraordinary Veneers Satin Extraordinary Veneers Satin Extraordinary Veneers Polished Extraordinary Veneers Satin and Polished Ebony	47,760 52,840 57,090 62,690 59,040 64,630 71,490 77,100 49,610 50,370 55,490 59,730 65,300 61,660 67,250 74,140 79,700 59,650	46,510 51,590 55,840 61,440 57,790 63,380 70,240 75,850 48,360 49,120 54,240 58,480 64,050 60,410 66,000 72,890 78,450 58,400
STEINGRAEBE Prices include & Verticals 122 T 122 T-SFM 122 T-SFM 120 T-SFM 121 T-SFM 122 T-SFM 122 T-SFM 122 T-SFM 122 T-SFM 122 T-SFM 122 T-SFM 122 T-SFM 120 T-SFM 120 T-SFM 130 T-PS 130 T-PS	48 48 48 48 48 48 48 48 48 48 48 48 48 4	Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Polished Special Veneers Satin Extraordinary Veneers Polished Extraordinary Veneers Satin and Polished Ebony Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Satin Special Veneers Satin Extraordinary Veneers Satin Extraordinary Veneers Satin Extraordinary Veneers Satin Extraordinary Veneers Satin and Polished Ebony Satin and Polished White	47,760 52,840 57,090 62,690 59,040 64,630 71,490 77,100 49,610 50,370 55,490 59,730 65,300 61,660 67,250 74,140 79,700 59,650 60,530	46,510 51,590 55,840 61,440 57,790 63,380 70,240 75,850 48,360 49,120 54,240 58,480 64,050 60,410 66,000 72,890 78,450 58,400 59,280
STEINGRAEBE Prices include & Verticals 122 T 122 T-SFM 122 T-SFM 120 T-PS 130 T-PS 130 T-PS	48 48 48 48 48 48 48 48 48 48 48 48 48 4	Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Polished Special Veneers Satin Extraordinary Veneers Polished Extraordinary Veneers Satin and Polished Ebony Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Satin Special Veneers Satin Extraordinary Veneers Satin Extraordinary Veneers Satin Extraordinary Veneers Satin Extraordinary Veneers Satin and Polished Ebony Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers	47,760 52,840 57,090 62,690 59,040 64,630 71,490 77,100 49,610 50,370 55,490 59,730 65,300 61,660 67,250 74,140 79,700 59,650 60,530 65,510	46,510 51,590 55,840 61,440 57,790 63,380 70,240 75,850 48,360 49,120 54,240 58,480 64,050 60,410 66,000 72,890 78,450 58,400 59,280 64,260
STEINGRAEBE Prices include & Verticals 122 T 122 T-SFM 122 T-SFM 122 T-SFM 122 T-SFM 122 T-SFM 122 T-SFM 122 T-SFM 122 T-SFM 120 T-SFM 121 T-SFM 122 T-SFM 122 T-SFM 122 T-SFM 122 T-SFM 122 T-SFM 122 T-SFM 130 T-PS 130 T-PS 130 T-PS 130 T-PS 130 T-PS	48 48 48 48 48 48 48 48 48 48	Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Polished Special Veneers Satin Extraordinary Veneers Polished Extraordinary Veneers Satin and Polished Ebony Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Satin Extraordinary Veneers Satin Extraordinary Veneers Satin Extraordinary Veneers Satin Extraordinary Veneers Satin and Polished Ebony Satin and Polished Ebony Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Polished Ordinary Veneers Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers	47,760 52,840 57,090 62,690 59,040 64,630 71,490 77,100 49,610 50,370 55,490 59,730 65,300 61,660 67,250 74,140 79,700 59,650 60,530 65,510 69,750 75,340 71,680	46,510 51,590 55,840 61,440 57,790 63,380 70,240 75,850 48,360 49,120 54,240 58,480 64,050 60,410 66,000 72,890 78,450 58,400 59,280 64,260 68,500 74,090 70,430
STEINGRAEBE Prices include & Verticals 122 T 122 T-SFM 122 T-SFM 122 T-SFM 122 T-SFM 122 T-SFM 122 T-SFM 122 T-SFM 122 T-SFM 122 T-SFM 120 T-SFM 121 T-SFM 122 T-SFM 130 T-PS 130 T-PS 130 T-PS 130 T-PS 130 T-PS	48 48 48 48 48 48 48 48 48 48	Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Polished Special Veneers Satin Extraordinary Veneers Polished Extraordinary Veneers Satin and Polished Ebony Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Polished Special Veneers Satin Extraordinary Veneers Satin Extraordinary Veneers Satin and Polished Ebony Satin and Polished Ebony Satin and Polished Ebony Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Polished Special Veneers Polished Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers	47,760 52,840 57,090 62,690 59,040 64,630 71,490 77,100 49,610 50,370 55,490 59,730 65,300 61,660 67,250 74,140 79,700 59,650 60,530 65,510 69,750 75,340	46,510 51,590 55,840 61,440 57,790 63,380 70,240 75,850 48,360 49,120 54,240 58,480 64,050 60,410 66,000 72,890 78,450 58,400 59,280 64,260 68,500 74,090
STEINGRAEBE Prices include & Verticals 122 T 122 T-SFM 122 T-SFM 122 T-SFM 122 T-SFM 122 T-SFM 122 T-SFM 122 T-SFM 122 T-SFM 122 T-SFM 120 T-SFM 121 T-SFM 122 T-SFM 130 T-PS 130 T-PS 130 T-PS 130 T-PS 130 T-PS 130 T-PS	48 48 48 48 48 48 48 48 48 48	Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Polished Special Veneers Satin Extraordinary Veneers Polished Extraordinary Veneers Satin and Polished Ebony Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Polished Special Veneers Satin Extraordinary Veneers Satin Extraordinary Veneers Satin and Polished Ebony Satin and Polished Ebony Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Satin Special Veneers Polished Special Veneers Polished Special Veneers Polished Ordinary Veneers Satin Special Veneers Satin Special Veneers Satin Special Veneers Satin Extraordinary Veneers	47,760 52,840 57,090 62,690 59,040 64,630 71,490 77,100 49,610 50,370 55,490 59,730 65,300 61,660 67,250 74,140 79,700 59,650 60,530 65,510 69,750 75,340 71,680 77,250 84,160	46,510 51,590 55,840 61,440 57,790 63,380 70,240 75,850 48,360 49,120 54,240 58,480 64,050 60,410 66,000 72,890 78,450 58,400 59,280 64,260 68,500 74,090 70,430 76,000 82,910
STEINGRAEBE Prices include & Verticals 122 T 122 T 122 T 122 T	48 48 48 48 48 48 48 48 48 48	Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Polished Special Veneers Satin Extraordinary Veneers Polished Extraordinary Veneers Satin and Polished Ebony Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers Polished Special Veneers Satin Extraordinary Veneers Satin Extraordinary Veneers Satin and Polished Ebony Satin and Polished Ebony Satin and Polished Ebony Satin and Polished White Polished Ebony w/Twist & Change Panels Satin Ordinary Veneers Polished Ordinary Veneers Polished Special Veneers Polished Ordinary Veneers Polished Ordinary Veneers Satin Special Veneers	47,760 52,840 57,090 62,690 59,040 64,630 71,490 77,100 49,610 50,370 55,490 59,730 65,300 61,660 67,250 74,140 79,700 59,650 60,530 65,510 69,750 75,340 71,680 77,250	46,510 51,590 55,840 61,440 57,790 63,380 70,240 75,850 48,360 49,120 54,240 58,480 64,050 60,410 66,000 72,890 78,450 58,400 59,280 64,260 68,500 74,090 70,430 76,000

^{*}See pricing explanation on page 194.

Model	Feet Inc	hes	Description	MSRP*	SMP*
STEINGRAE	BER & SÖH	NE (coi	ntinued)		
130 T-SFM	5	1	Satin and Polished White	61,690	60,440
130 T-SFM	5	1	Polished Ebony w/Twist & Change Panels	66,660	65,410
130 T-SFM	5	1	Satin Ordinary Veneers	70,900	69,650
130 T-SFM	5		Polished Ordinary Veneers	76,490	75,240
130 T-SFM	5		Satin Special Veneers	72,840	71,590
130 T-SFM	5		Polished Special Veneers	78,380	77,130
130 T-SFM	5		Satin Extraordinary Veneers	85,310	84,060
130 T-SFM	5		Polished Extraordinary Veneers	90,880	89,630
138 K	5.		Satin and Polished Ebony	63,200	61,950
			Satin and Polished White	,	
138 K	5-			64,020	62,770
138 K	5-		Polished Ebony w/Twist & Change Panels	69,060	67,810
138 K	5		Satin Ordinary Veneers	73,320	72,070
138 K	5		Polished Ordinary Veneers	78,880	77,630
138 K	5-		Satin Special Veneers	75,230	73,980
138 K	54		Polished Special Veneers	80,840	79,590
138 K	5	4	Satin Extraordinary Veneers	87,680	86,430
138 K	5	4	Polished Extraordinary Veneers	93,290	92,040
138 K-SFM	54	4	Satin and Polished Ebony	65,820	64,570
138 K-SFM	5	4	Satin and Polished White	66,660	65,410
138 K-SFM	5	4	Polished Ebony w/Twist & Change Panels	71,700	70,450
138 K-SFM	54	4	Satin Ordinary Veneers	75,940	74,690
138 K-SFM	54		Polished Ordinary Veneers	81,530	80,280
138 K-SFM	54		Satin Special Veneers	77,880	76,630
138 K-SFM	54		Polished Special Veneers	83,440	82,190
138 K-SFM	5-		Satin Extraordinary Veneers	90,350	89,100
138 K-SFM	5. 5.		Polished Extraordinary Veneers	95,920	
Grands	J.	+	r distred Extraordinary verteers	93,920	94,670
		7	Catin and Dalishad Ehany	100.060	100.010
A-170			Satin and Polished Ebony	109,260	108,010
A-170		7	Satin and Polished White	111,300	110,050
A-170		7	Satin and Polished Ordinary Veneers	124,260	123,010
A-170		7	Satin and Polished Special Veneers	125,900	124,650
A-170		7	Satin and Polished Extraordinary Veneers	134,590	133,340
A-170 S		7	Studio Lacquer Anti-Scratch	106,300	105,050
B-192		3	Satin and Polished Ebony	126,420	125,170
B-192	6	3	Satin and Polished White	128,810	127,560
B-192	6	3	Satin and Polished Ordinary Veneers	142,930	141,680
B-192	6	3	Satin and Polished Special Veneers	144,770	143,520
B-192	6	3	Satin and Polished Extraordinary Veneers	154,520	153,270
B-192 S	6	3	Studio Lacquer Anti-Scratch	123,350	122,100
C-212	7		Satin and Polished Ebony	144,020	142,770
C-212	7		Satin and Polished White	146,730	145,480
C-212	7		Satin and Polished Ordinary Veneers	161,680	160,430
C-212	7		Satin and Polished Special Veneers	163,720	162,470
C-212	7		Satin and Polished Extraordinary Veneers	174,470	173,220
C-212 S	7		Studio Lacquer Anti-Scratch	140,490	139,240
		7			
D-232		7	Satin and Polished Ebony	174,420	173,170
D-232		7	Satin and Polished White	176,920	175,670
D-232		7	Satin and Polished Ordinary Veneers	193,970	192,720
D-232		7	Satin and Polished Special Veneers	196,150	194,900
D-232		7	Satin and Polished Extraordinary Veneers	208,000	206,750
D-232 S		7	Studio Lacquer Anti-Scratch	170,700	169,450
E-272	8 1	1	Satin and Polished Ebony	250,650	249,400
E-272	8 1	1	Satin and Polished White	251,360	250,110
E-272	8 1		Satin and Polished Ordinary Veneers	274,130	272,880
E-272	8 1		Satin and Polished Special Veneers	275,970	274,720
E-272	8 1		Satin and Polished Extraordinary Veneers	291,280	290,030
				201,200	_30,000

^{*}See pricing explanation on page 194.

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 benches. Other models include regular wood bench. Wood-veneered models are in a semigloss finish called "satin lustre."

finish called ":	satın lust	tre."			
Verticals					
4510		45	Sheraton Satin Ebony	35,300	35,300
4510		45	Sheraton Mahogany	39,100	39,100
4510		45	Sheraton Walnut	39,600	39,600
1098		46.5	Satin Ebony	33,300	33,300
1098		46.5	Mahogany	37,000	37,000
1098		46.5	Walnut	37,500	37,500
K-52		52	Satin Ebony	38,800	38,800
K-52		52	Mahogany	43,700	43,700
K-52		52	Walnut	45,300	45,300
Grands		52	vvanut	40,000	45,500
	-	4	Catin and Dalishad Ehany	00.700	CO 700
S	5 5	1	Satin and Polished Ebony	69,700	69,700
S	5	1	Polished Ebony w/Sterling Hardware Polished White	71,600	71,600
S				77,600	77,600
S	5	1	Mahogany	81,400	81,400
S	5	1	Walnut	82,200	82,200
S	5	1	Kewazinga Bubinga	86,900	86,900
S	5	1	East Indian Rosewood	98,300	98,300
S	5	1	Macassar Ebony	107,100	107,100
S	5	1	Figured Sapele	86,300	86,300
S	5	1	Dark Cherry	87,100	87,100
S	5	1	Santos Rosewood	97,600	97,600
S	5	1	African Pommele	101,200	101,200
M	5	7	Satin and Polished Ebony	74,300	74,300
М	5	7	Polished Ebony w/Sterling Hardware	76,200	76,200
M	5	7	Polished White	84,000	84,000
M	5	7	Mahogany	88,600	88,600
M	5	7	Walnut	89,400	89,400
M	5	7	Kewazinga Bubinga	94,400	94,400
M	5	7	East Indian Rosewood	106,100	106,100
M	5	7	Macassar Ebony	115,900	115,900
M	5	7	Figured Sapele	95,500	95,500
M	5	7	Dark Cherry	96,100	96,100
M	5	7	Santos Rosewood	105,900	105,900
M	5	7	African Pommele	109,700	109,700
M 1014A	5	7	Chippendale Mahogany	103,300	103,300
M 1014A	5	7	Chippendale Walnut	105,300	105,300
M 501A	5	7	Louis XV Walnut	132,500	132,500
M 501A	5	7	Louis XV East Indian Rosewood	154,100	154,100
M	5	7	Polished Ebony w/White/Color Pops Accessories	89,100	89,100
M	5	7	John Lennon Imagine Polished White	116,300	116,300
M	5	7	Onyx Duet Polished Ebony	110,200	110,200
M			Spirio Player Piano System, add	25,000	25,000
0	5	10.5	Satin and Polished Ebony	83,300	83,300
0	5	10.5	Polished Ebony w/Sterling Hardware	85,200	85,200
0	5	10.5	Polished White	92,600	92,600
0	5	10.5	Mahogany	95,800	95,800
0	5	10.5	Walnut	96,800	96,800
Ō	5	10.5	Kewazinga Bubinga	101,700	101,700
0	5	10.5	East Indian Rosewood	114,900	114,900
0	5	10.5	Macassar Ebony	125,300	125,300
0	5	10.5	Figured Sapele	102,900	102,900
0	5	10.5	Dark Cherry	103,500	103,500
_	J		Onony	100,000	. 55,555

^{*}See pricing explanation on page 194.

Model	Feet	Inches	Description	MSRP*	SMP*
STEINWAY	' & SONS	(continue	d)		
0	5	10.5	Santos Rosewood	114,100	114,100
0	5	10.5	African Pommele	118,900	118,900
0	5	10.5	Polished Ebony w/White/Color Pops Accessories	96,900	96,900
0	5	10.5	John Lennon Imagine Polished White	124,800	124,800
0	5	10.5	Onyx Duet Polished Ebony	115,500	115,500
A	6	2	Satin and Polished Ebony	96,200	96,200
A	6	2	Polished Ebony w/Sterling Hardware	98,100	98,100
A	6	2	Polished White	107,600	107,600
A	6	2	Mahogany	108,900	108,900
A	6	2	Walnut	110,400	110,400
A	6	2	Kewazinga Bubinga	116,600	116,600
A	6	2	East Indian Rosewood	131,700	131,700
A	6	2	Macassar Ebony	143,800	143,800
A	6	2	•	116,900	116,900
A A	6	2	Figured Sapele		
			Dark Cherry	118,700	118,700
A	6	2	Santos Rosewood	131,300	131,300
A	6	2	African Pommele	136,700	136,700
A	6	2	Polished Ebony w/White/Color Pops Accessories	109,700	109,700
A	6	2	John Lennon Imagine Polished White	141,500	141,500
A	6	2	Onyx Duet Polished Ebony	126,400	126,400
В	6	10.5	Satin and Polished Ebony	108,700	108,700
В	6	10.5	Polished Ebony w/Sterling Hardware	112,700	112,700
В	6	10.5	Polished White	121,100	121,100
В	6	10.5	Mahogany	124,400	124,400
В	6	10.5	Walnut	125,800	125,800
В	6	10.5	Kewazinga Bubinga	132,300	132,300
В	6	10.5	East Indian Rosewood	150,500	150,500
В	6	10.5	Macassar Ebony	163,200	163,200
В	6	10.5	Figured Sapele	132,300	132,300
В	6	10.5	Dark Cherry	133,100	133,100
В	6	10.5	Santos Rosewood	147,100	147,100
- В	6	10.5	African Pommele	153,700	153,700
В	6	10.5	Polished Ebony w/White/Color Pops Accessories	124,600	124,600
В	6	10.5	John Lennon Imagine Polished White	159,400	159,400
В	6	10.5	Onyx Duet Polished Ebony	140,200	140,200
В	U	10.5	Spirio Player Piano System, add	25,000	25,000
D	8	11.75	Satin and Polished Ebony	171,100	169,200
D		_	•		
_	8	11.75	Polished Ebony w/Sterling Hardware	175,100	173,200
D	8	11.75	Polished White	188,600	186,200
D	8	11.75	Mahogany	200,100	200,100
D	8	11.75	Walnut	201,400	201,400
D -	8	11.75	Kewazinga Bubinga	211,200	211,200
D	8	11.75	East Indian Rosewood	240,300	240,300
D	8	11.75	Macassar Ebony	259,700	259,700
D	8	11.75	Figured Sapele	203,800	203,800
D	8	11.75	Dark Cherry	207,200	207,200
D	8	11.75	Santos Rosewood	225,900	225,900
D	8	11.75	African Pommele	237,500	237,500
D	8	11.75	Polished Ebony w/White/Color Pops Accessories	179,300	179,300
D	8	11.75	John Lennon Imagine Polished White	219,200	219,200

^{*}See pricing explanation on page 194.

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 = \$1.24, 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	86,500	86,500
M-170	5	7	Polished Ebony	89,200	89,200
O-180	5	10.5	Polished Ebony	100,400	100,400
A-188	6	2	Polished Ebony	103,100	103,100
B-211	6	11	Polished Ebony	118,900	118,900
C-227	7	5.5	Polished Ebony	133,800	133,800
D-274	8	11.75	Polished Ebony	179,300	179,300

STORY & CLARK

All Story & Clark pianos include PNOscan, and USB and MIDI connectivity. In addition, all grands now include a QRS PNOmation player-piano system. Prices shown are those for online sales through www.qrsmusic.com.

Heritage Series Verticals

_				
H7		46	Academy Polished Ebony	5,395
Signature Se	ries Vert	icals		
S8		48	Cosmopolitan Polished Ebony	5,395
Heritage Seri	ies Grand	ds		
H50A	4	11	Prelude Polished Ebony/Mahogany	16,695
H60 QA	5		French Provincial Polished Ebony	17,495
H60 QA	5		French Provincial Satin Lacquer and Polished Mahogany	17,595
H60A	5	3	Academy Satin and Polished Ebony	17,495
H60A	5	3	Academy Polished Mahogany	17,495
H60A	5	3	Academy Polished White	17,995
H70A	5	7	Conservatory Polished Ebony	18,895
H80	6	1	Professional Polished Ebony	21,395
H90	6	10	Semi-Concert Polished Ebony	28,795
Signature Se	ries Grar	nds		
S500	4	11	Manhattan Semigloss Ebony w/Birdseye Maple Accents	25,095
S600	5	4	Cosmopolitan Polished Ebony	24,395
S600	5	4	Melrose Polished Ebony/Mahogany	26,995
S600	5	4	Park West Satin Ebony	24,195
S600	5	4	Park West Polished Ebony	24,495
S700	5	9	Fairfax Polished Ebony w/Bubinga Accents	26,695
S700	5	9	Versailles Satin Lacquer Cherry	26,295
S700	5	9	Park West Polished Ebony	24,695
S800	6	2	Islander British Colonial Satin Walnut	27,895
S800	6	2	Park West Polished Ebony	25,395
S900	7		Park West Satin Ebony	38,495

^{*}See pricing explanation on page 194.

Model	Feet Inches	Description	MSRP*	SMP*
WALTER, C	CHARLES R.			
Verticals				
1520	43	Satin and Polished Walnut		18,477
1520	43	Satin and Polished Cherry		18,420
1520	43	Satin and Polished Oak		17,803
1520	43	Satin and Polished Mahogany		18,813
1520	43	Italian Provincial Satin and Polished Walnut		18,514
1520	43	Italian Provincial Satin and Polished Mahogany		18,850
1520	43	Italian Provincial Satin and Polished Oak		17,823
1520	43	Country Classic Satin and Polished Cherry		18,253
1520	43	Country Classic Satin and Polished Oak		17,923
1520	43	French Provincial Satin and Polished Oak		18,514
1520	43	French Provincial Satin and Polished Cherry/Walnut/Mahogany		19,072
1520	43	Riviera Satin and Polished Oak		17,752
1520	43	Queen Anne Satin and Polished Oak		18,666
1520	43	Queen Anne Satin and Polished Mahogany/Cherry		19,072
1500	45	Satin Ebony		17,172
1500	45	Semi-Gloss Ebony		17,506
1500	45	Polished Ebony (Lacquer)		17,707
1500	45	Polished Ebony (Polyester)		18,084
1500	45	Satin and Polished Oak		16,329
1500	45	Satin and Polished Walnut		17,358
1500	45	Satin and Polished Mahogany		17,619
1500	45	Satin and Polished Gothic Oak		17,380
1500	45	Satin and Polished Cherry		17,561
Verticals		Renner (German) action, add		1,925–2,150
Grands				
W-175	5 9	Satin Ebony		77,781
W-175	5 9	Semi-Polished and Polished Ebony (Lacquer)		79,776
W-175	5 9	Polished Ebony (Polyester)		80,863
W-175	5 9	Satin Mahogany/Walnut/Cherry		81,263
W-175	5 9	Semi-Polished & Polished Mahogany/Walnut/Cherry		83,334
W-175	5 9	Open-Pore Walnut		79,303
W-175	5 9	Satin Oak		74,766
W-175	5 9	Chippendale Satin Mahogany/Cherry		83,769
W-175	5 9	Chippendale Semi-Polished & Polished Mahogany/Cherry		85,804
W-190	6 4	Satin Ebony		82,731
W-190	6 4	Semi-Polished and Polished Ebony (Lacquer)		84,817
W-190	6 4	Polished Ebony (Polyester)		85,947
W-190	6 4	Satin Mahogany/Walnut/Cherry		86,339
W-190	6 4	Semi-Polished & Polished Mahogany/Walnut/Cherry		88,485
W-190	6 4	Open-Pore Walnut		84,310
W-190	6 4	Satin Oak		79,598
W-190	6 4	Chippendale Satin Mahogany/Cherry		88,990
W-190	6 4	Chippendale Semi-Polished & Polished Mahogany/Cherry		91,051
WEBER				
Weber Vert				
W114	45	Satin Ebony	6,210	5,780
W114	45	Polished Ebony	5,950	5,580
W114	45	Polished Mahogany/Walnut/White	6,210	5,780
W114E	45	Polished Ebony w/Chrome	6,470	5,980
W114F	45	Designer Satin Mahogany/Cherry	6,990	6,380
W121	48	Satin Ebony	7,250	6,580
W121	48	Polished Ebony	6,990	6,380
W121	48	Polished Mahogany/Walnut/White	7,250	6,580

^{*}See pricing explanation on page 194.

Model	Feet	Inches	Description	MSRP*	SMP*
WEBER (cor	ntinued)				
W121E		48	Polished Ebony w/Chrome	8,290	7,380
W121N		48	Polished Ebony	7,250	6,580
W131		52	Satin Ebony	8,030	7,180
W131		52	Polished Ebony	7,510	6,780
W131		52	Polished Mahogany	8,030	7,180
Albert Web	er Vertica	ls			
AW 121		48	Polished Ebony	11,410	9,780
AW 121		48	Satin Mahogany	11,930	10,180
AW 121E		48	Polished Ebony w/Chrome	12,710	10,780
AW 131		52	Satin Ebony	15,050	12,580
AW 131		52	Polished Ebony	14,010	11,780
Weber Gran	ds				
W150	4	11	Satin Ebony	14,270	11,980
W150	4	11	Polished Ebony	13,750	11,580
W150	4	11	Polished Mahogany/Walnut/White	14,270	11,980
W150E	4	11	Polished Ebony w/Chrome	14,530	12,180
W157	5	2	Satin Ebony	15,570	12,980
W157	5	2	Polished Ebony	14,790	12,380
W157	5	2	Polished Mahogany	15,570	12,980
W175	5	9	Satin Ebony	17,910	14,780
W175	5	9	Polished Ebony	16,870	13,980
W185	6	1	Satin Ebony	21,810	17,780
W185	6	1	Polished Ebony	20,770	16,980
Albert Webe	er Grands	i			
AW 185	6	1	Satin Ebony	38,970	30,980
AW 185	6	1	Polished Ebony	37,670	29,980
AW 208	6	10	Satin Ebony	47,290	37,380
AW 208	6	10	Polished Ebony	45,990	36,380
AW 228	7	6	Satin Ebony	66,530	52,180
AW 228	7	6	Polished Ebony	65,230	51,180
AW 275	9		Polished Ebony	119,570	92,980
NA/EDTIJEINA	•				
WERTHEIM Verticals	1				
W121		48	Poliched Chony	6 000	6 400
W121		48	Polished Ebony Polished Mahogany/Walnut/White	6,999 7,499	6,499 6,899
			<u> </u>	· ·	
W121		48	French Polished Mohagany/Malaytt/M/hite	6,999	6,499
W121		48	French Polished Mahogany/Walnut/White	7,499	6,899
WE123		48.5	Polished Ebony Polished Mahogany/Walnut/White	9,999	8,499
WE123		48.5	<u> </u>	10,499	8,949
WE123		48.5	French Polished Ebony French Polished Mahogany/Walnut/White	9,999	8,499
WE123		48.5	3 ,	10,499	8,949
WP125		49	San and Polished Ebony	13,999	11,999
Grands	_		- .		
W153	5	1	Polished Ebony	12,499	10,999
W153	5	1	Polished Mahogany/Walnut/White	12,400	11,999
WE170	5	7	Polished Ebony	18,999	14,999
WE170	5	7	Polished Mahogany/Walnut/White	19,999	15,999
WP180	5	10	Satin and Polished Ebony	29,999	22,999
WP213	7		Polished Ebony	39,999	34,999

^{*}See pricing explanation on page 194.

Model	Feet Inches	Description	MSRP*	SMP*
ҮАМАНА				
Including Dis	klavier, Silent, and	TransAcoustic Pianos		
Verticals				
b1	40	Continental Polished Eheny	4,799	4,799
	43	Continental Polished Ebony	,	,
b1 b1	43 43	Continental Polished Ebony with Chrome Accents Continental Polished White	4,999	4,999
			4,999	4,999
M560	44	Hancock Satin Brown Cherry	7,199	7,199
b2	45	Polished Ebony	6,749	6,598
b2	45	Polished Bony with Chrome Accents	6,949	6,798
b2	45	Polished Mahogany/Walnut/White	7,159	6,998
P22	45	Satin Ebony/Walnut/Dark Oak	7,549	7,398
P660	45	Sheraton Satin Brown Mahogany	9,129	9,129
P660	45	Queen Anne Satin Brown Cherry	9,129	9,129
b3	48	Polished Ebony	8,259	7,798
b3	48	Polished Ebony with Chrome Accents	8,459	7,998
b3	48	Polished Mahogany/Walnut/White	9,129	8,298
U1	48	Satin and Polished Ebony	11,399	11,399
U1	48	Satin American Walnut	13,499	13,499
U1	48	Polished Mahogany/White	13,499	13,499
YUS1	48	Satin and Polished Ebony	15,599	14,998
YUS1	48	Satin American Walnut	18,799	17,930
YUS1	48	Polished Mahogany/White	18,799	17,930
U3	52	Polished Ebony	14,559	14,098
U3	52	Satin American Walnut	16,599	16,398
U3	52	Polished Mahogany	16,599	16,398
YUS3	52	Polished Ebony	18,899	17,998
YUS3	52	Polished Mahogany	21,799	20,598
YUS5	52	Polished Ebony	20,999	19,978
SU7	52	Polished Ebony	39,999	38,390
Disklavier Ve	erticals	·		
DU1ENST	48	Satin and Polished Eheny	20 100	26 650
	-	Satin and Polished Ebony	28,199	26,658
DU1ENST	48	Satin American Walnut	30,299	28,858
DU1ENST	48	Polished Mahogany/White	30,299	28,858
DYUS1ENST	48	Satin and Polished Ebony	32,299	29,798
DYUS1ENST	48	Satin American Walnut	35,799	32,930
DYUS1ENST	48	Polished Mahogany/White	35,799	32,930
Silent and Tr	ansAcoustic Vertic	als		
b1SG2	43	Polished Ebony	8,799	8,799
b1SG2	43	Polished Ebony with Chrome Accents	8,999	8,999
b1SG2	43	Polished White	8,999	8,999
b2SG2	45	Polished Ebony	10,749	9,798
b2SG2	45	Polished Ebony with Chrome Accents	10,949	9,998
b2SG2	45	Polished Mahogany/Walnut/White	11,159	10,198
b3SG2	48	Polished Ebony	12,259	10,998
b3SG2	48	Polished Ebony with Chrome Accents	12,459	11,198
b3SG2	48	Polished Mahogany/Walnut/White	13,129	11,498
U1SH	48	Satin and Polished Ebony	15,399	15,058
J1SH	48	Satin American Walnut	17,499	17,198
J1SH	48	Polished Mahogany/White	17,499	17,198
U1TA	48	Polished Ebony	17,399	17,058
YUS1SH	48	Satin and Polished Ebony	19,599	18,198
YUS1SH	48	Satin American Walnut	22,799	21,130
YUS1SH	48	Polished Mahogany/White	22,799	21,130
YUS1TA	48	Polished Ebony	21,599	20,198
U3SH	52	Polished Ebony		
U3SH	52 52	·	18,559	17,298
		Polished Mahogany	20,599	19,598
U3SH	52	Satin American Walnut	20,599	19,598

^{*}See pricing explanation on page 194.

Model	Feet	Inches	Description	MSRP*	SMP*
YAMAHA (continue	d)			
YUS3SH		52	Polished Ebony	22,899	21,198
YUS3SH		52	Polished Mahogany	25,799	23,798
YUS3TA		52	Polished Ebony	24,899	23,198
YUS5SH		52	Polished Ebony	24,999	23,178
YUS5TA		52	Polished Ebony	26,999	25,178
Grands					
GB1K	5		Polished Ebony	14,999	14,158
GB1K	5		Polished American Walnut/Mahogany/White	17,339	16,198
GB1K	5		French Provincial Satin Cherry	19,179	18,598
GB1K	5		Georgian Satin Mahogany	18,359	18,198
GC1M	5	3	Satin and Polished Ebony	23,999	23,858
GC1M	5	3	Satin American Walnut	30,599	28,198
GC1M	5	3	Polished Mahogany/White	30,599	28,198
C1X	5	3	Satin and Polished Ebony	37,999	34,098
C1X	5	3	Satin American Walnut	46,369	41,118
C1X	5	3	Polished Mahogany/White	46,369	41,118
GC2	5	8	Satin and Polished Ebony	28,959	26,998
GC2	5	8	Satin American Walnut	33,859	31,198
GC2	5	8	Polished Mahogany/White	33,859	31,198
C2X	5	8	Satin and Polished Ebony	43,999	40,198
C2X	5	8	Polished Ebony w/Chrome Accents	45,699	41,398
C2X	5	8	Satin American Walnut	53,399	47,938
C2X	5	8	Polished Mahogany/White	53,399	47,938
C3X	6	1	Satin and Polished Ebony	57,999	52,298
C3X	6	1	Satin American Walnut	69,999	62,798
C3X	6	1	Polished Mahogany/White	69,999	62,798
S3X	6	1	Polished Ebony	77,999	74,998
CF4	6	3	Polished Ebony	105,599	105,599
C5X	6	7	Satin and Polished Ebony	63,899	58,098
C5X	6	7	Satin American Walnut	77,799	69,560
C5X	6	7	Polished Mahogany/White	77,799	69,560
S5X	6	7	Polished Ebony	84,999	80,998
C6X	7	•	Satin and Polished Ebony	71,199	64,698
C6X	7		Satin American Walnut	85,999	77,718
C6X	7		Polished Mahogany/White	85,999	77,718
S6X	7		Polished Ebony	95,599	92,998
CF6	7		Polished Ebony	119,999	119,598
C7X	7	6	Satin and Polished Ebony	82,999	74,698
C7X	7	6	Satin American Walnut	99,999	89,478
C7X	7	6	Polished Mahogany/White	99,999	89,478
S7X	7	6	Polished Ebony	104,999	100,998
CFX	9	U	Polished Ebony	179,999	179,999
UΓΛ	9		Fullshed Edully	179,999	179,999

^{*}See pricing explanation on page 194.

Model	Feet	Inches	Description	MSRP*	SMP*
YAMAHA (con	ntinue	d)			
Disklavier Gra	nds				
DGB1KENCL	5		Classic Polished Ebony (playback only)	23,999	23,158
DGB1KENST	5		Polished Ebony	28,399	26,558
DGB1KENST	5		Polished Mahogany/American Walnut/White	30,739	28,598
DGC1ENST	5	3	Satin and Polished Ebony	41,399	39,258
DGC1ENST	5	3	Satin American Walnut	47,999	43,598
DGC1ENST	5	3	Polished Mahogany/White	47,999	43,598
DC1XENST	5	3	Satin and Polished Ebony	55,399	49,498
DC1XENST	5	3	Satin American Walnut	63,769	56,518
DC1XENST	5	3	Polished Mahogany/White	63,769	56,518
DGC2ENST	5	8	Satin and Polished Ebony	46,359	42,398
DGC2ENST	5	8	Satin American Walnut	51,259	46,598
DGC2ENST	5	8	Polished Mahogany/White	51,259	46,598
DC2XENST	5	8	Satin and Polished Ebony	61,399	55,598
DC2XENST	5	8	Polished Ebony w/Chrome Accents	63,099	56,798
DC2XENST	5	8	Satin American Walnut	70,799	63,338
DC2XENST	5	8	Polished Mahogany/White	70,799	63,338
DC3XENPRO	6	1	Satin and Polished Ebony	80,399	70,698
DC3XENPRO	6	1	Satin American Walnut	92,399	81,198
DC3XENPRO	6	1	Polished Mahogany/White	92,399	81,198
DS3XENPRO	6	1	Polished Ebony	117,999	112,998
DCF4ENPRO	6	3	Polished Ebony	145,599	144,198
DC5XENPRO	6	7	Satin and Polished Ebony	86,299	76,498
DC5XENPRO	6	7	Satin American Walnut	100,199	87,960
DC5XENPRO	6	7	Polished Mahogany/White	100,199	87,960
DS5XENPRO	6	7	Polished Ebony	124,999	118,998
DC6XENPRO	7		Satin and Polished Ebony	93,599	83,098
DC6XENPRO	7		Satin American Walnut	108,399	96,118
DC6XENPRO	7		Polished Mahogany/White	108,399	96,118
DS6XENPRO	7		Polished Ebony	135,599	130,998
DCF6ENPRO	7		Polished Ebony	159,999	157,598
DC7XENPRO	7	6	Satin and Polished Ebony	105,399	93,098
DC7XENPRO	7	6	Satin American Walnut	122,399	107,878
DC7XENPRO	7	6	Polished Mahogany/White	122,399	107,878
DS7XEMPRO	7	6	Polished Ebony	144,999	138,998
DCFXENPRO	9		Polished Ebony	219,999	218,998

^{*}See pricing explanation on page 194.

Model	Feet	Inches	Description	MSRP*	SMP*
YAMAHA (c	ontinue	d)			
Silent and Tr	ansAcou	stic Grand	ls		
GB1KSG2	5		Polished Ebony	18,999	17,358
GB1KSG2	5		Polished Mahogany/Walnut/White	21,339	19,398
GC1SH	5	3	Satin and Polished Ebony	27,999	27,058
GC1SH	5	3	Satin American Walnut	34,599	31,398
GC1SH	5	3	Polished Mahogany/White	34,599	31,398
GC1TA	5	3	Polished Ebony	31,999	31,058
C1XSH	5	3	Satin and Polished Ebony	41,999	37,298
C1XSH	5	3	Satin American Walnut	50,369	44,318
C1XSH	5	3	Polished Mahogany/White	50,369	44,318
C1XTA	5	3	Polished Ebony	45,499	41,298
GC2SH	5	8	Satin and Polished Ebony	32,959	30,198
GC2SH	5	8	Satin American Walnut	37,859	34,398
GC2SH	5	8	Polished Mahogany/White	37,859	34,398
C2XSH	5	8	Satin and Polished Ebony	47,999	43,398
C2XSH	5	8	Polished Ebony w/Chrome Accents	49,699	44,598
C2XSH	5	8	Satin American Walnut	57,399	51,138
C2XSH	5	8	Polished Mahogany/White	57,399	51,138
C3XSH	6	1	Satin and Polished Ebony	61,999	55,498
C3XSH	6	1	Satin American Walnut	73,999	65,998
C3XSH	6	1	Polished Mahogany/White	73,999	65,998
C3XTA	6	1	Polished Ebony	65,999	59,498
C5XSH	6	7	Satin and Polished Ebony	67,899	61,298
C5XSH	6	7	Satin American Walnut	81,799	
		7			72,760
C5XSH	6	/	Polished Mahogany/White	81,799	72,760
C6XSH	7		Satin and Polished Ebony	75,199	67,898
C6XSH	7		Satin American Walnut	89,999	80,918
C6XSH	7	•	Polished Mahogany/White	89,999	80,918
C7XSH	7	6	Satin and Polished Ebony	86,999	77,898
C7XSH	7	6	Satin American Walnut	103,999	92,678
C7XSH	7	6	Polished Mahogany/White	103,999	92,678
YOUNG CHA	ANG				
Verticals					
Y114		45	Polished Ebony	5,370	5,300
Y114		45	Polished Mahogany/Walnut/White	5,870	5,700
Y114E		45	Polished Ebony w/Chrome	6,120	5,900
Y116		46	Polished Ebony	6,870	6,500
Y116		46	Satin Ebony/Walnut	6,870	6,500
Y118		47	Satin Ebony	6,120	5,900
Y118		47	Polished Ebony	5,870	5,700
Y118		47	Polished Mahogany/Walnut	6,120	5,900
Y118R		47	Designer French Satin Cherry	6,870	6,500
Y118R		47	Designer Satin Mahogany	6,870	6,500
Y121		48	Satin Ebony	6,620	6,300
Y121		48	Polished Ebony	6,370	6,100
Y121		48	Polished Mahogany/Walnut	6,620	6,300
Y131		52	Satin Ebony	7,120	6,700
Y131		52	Polished Ebony	6,870	6,500
Y131		52	Polished Mahogany	7,120	6,700
		U		7,120	0,, 00

^{*}See pricing explanation on page 194.

Model	Feet	Inches	Description	MSRP*	SMP*
YOUNG CH	HANG (co	ntinued)			
Grands					
Y150	4	11	Satin Ebony	12,870	11,300
Y150	4	11	Polished Ebony	12,370	10,900
Y150	4	11	Polished Mahogany/Walnut/White	12,870	11,300
Y150E	4	11	Polished Ebony w/Chrome	13,120	11,500
Y157	5	2	Satin Ebony	14,370	12,500
Y157	5	2	Polished Ebony	13,370	11,700
Y157	5	2	Polished Mahogany	14,370	12,500
Y175	5	9	Satin Ebony	16,370	14,100
Y175	5	9	Polished Ebony	15,370	13,300
Y185	6	1	Satin Ebony	20,370	17,300
Y185	6	1	Polished Ebony	19,120	16,300

^{*}See pricing explanation on page 194.

DIGITAL PIANOS

Brand and Company Profiles

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 are 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.

Blüthner

Blüthner USA LLC 5660 West Grand River Lansing, Michigan 48906 517-886-6000 800-954-3200 info@bluthnerpiano.com www.bluthnerpiano.com

Blüthner, one of the world's preeminent piano makers, has released its first line of digital pianos, called the e-Klavier. (For company background, see the **Blüthner** listing in the "Brand and Company Profiles" for acoustic pianos.) Engineered and manufactured in Leipzig, Germany, the e-Klavier line comprises eight models in five styles: a slab, three standard verticals, a decorator vertical called the Pianette, a vertical called Homeline with a solid wood cabinet, and two grand-shaped models.

Blüthner says it has developed a unique approach to sampling and sound modeling, called Authentic Acoustic Behavior, that allows the e-Klavier to reproduce the effect of the aliquot (fourth) string of Blüthner's acoustic pianos. This system also permits the reproduction of advanced harmonics, such as the coincidental partials produced when two notes are played simultaneously, and the sound the dampers make when lifting off the strings. The e-Klavier actions, sourced from Fatar, feature escapement, and wooden keys with "ivory feel" in some models. In the near future, users will be able to download new sounds to the e-Klaviers via the Internet at no charge, and store the sounds of turn-of-the-century Blüthner pianos and other Blüthner models of interest.

The e-Klavier 2 and 3 also contain an actual piano soundboard, which enables these instruments to produce certain aspects of acoustic-piano tone that are difficult or impossible to simulate by purely electronic means.

Blüthner also makes a hybrid-piano system, called "e-volution," that can be installed in any of its acoustic upright or grand models. For more information, see the Blüthner listing in the Acoustic Pianos: Brand and Company Profiles section of this issue.

Casio

Casio USA 570 Mount Pleasant Avenue Dover, New Jersey 07801 973-361-5400

www.casiomusicgear.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 nine vertical and five slab models. The Privia line's PX-160 slab is the least expensive ensemble model, and four of the five Privia slabs offer an optional standand-pedal module that turns them into three-pedal pianos with support for half-pedaling. At a mere 24 or 25 pounds, they are also some of the lightest digital pianos available. The AP and GP models are marketed under the Celviano label. All Casio digital pianos use a three-sensor, weighted, and scaled (graded) Tri-Sensor hammer action with ebony- and ivory-feel keys. Casio digital pianos are available at music retailers, consumer electronics stores, warehouse clubs, and online.

Dexibell

Dexibell North America President: Antonio Ferranti 888-588-4099 818-304-1039 (direct) antonio.ferranti@dexibell.com www.dexibell.com

Dexibell, made in Italy, was established in 2013 by the R&D and engineering team of the former Roland Europe, with financial backing from parent company Proel S.p.A., an Italian manufacturer of leading brands of professional audio and lighting equipment, musical instruments, and accessories. In 2017, after several years of international success, Proel began distributing the Dexibell brand in North America.

Dexibell uses a suite of patented technologies, called T2L (True to Life), to increase acoustic-piano realism in its instruments. First, whereas the industry standard for sound resolution is 16-bit/44.1kHz (CD quality), Dexibell uses 24-bit/48kHz resolution, resulting in 256 times greater sound resolution and clarity. Second, in comparison to the industry-standard sampling time per note of five seconds or less, Dexibell's samples run for 15 seconds, capturing virtually the entire natural decay of a note, and eliminating the need for the artificial looping found in most of today's digital pianos. Last, Dexibell's Quad Core sound engine contains 320 digital oscillators, allowing for virtually unlimited polyphony and sympathetic resonance.

Dexibell partnered with Ferrari's design firm to create a look for its instruments that is uniquely Italian, with sleek curved lines, and striking color options that include black, white, red, pink, and blue, in matte and polished finishes.

Dexibell produces digital pianos, keyboards, and organs. Its digital piano line is called VIVO (Italian for *alive*), and is available in home, portable, and stage versions. All are Bluetooth-equipped, record and play digital audio, and come with two original apps: the VIVO Editor, for modifying any of the instruments' sound elements, and XMURE, for recording songs and play-along backing tracks with smart accompaniment.

Dynatone

Dynatone America Corporation 1447 Montgomery Street Tustin, California 92782 949-679-5500

www.dynatoneusa.com

Distributed by:
Piano Marketing Group, Inc.
3227 Natoma Way
Orlando, Florida 32825
954-559-9553
scott.shebeck@dynatoneUSA.com

Dynatone, headquartered in Seoul, South Korea, was founded in 1987 as the Electric Instruments Division of the global semiconductor manufacturer Korean Electronics Company (KEC), and was the first maker of electric musical instruments in Korea. It became an independent company in 2000. In addition to digital pianos and MIDI keyboards, Dynatone makes percussion, string, woodwind, and brass instruments, which it exports to more than 30 countries.

Dynatone is offering in the U.S. market two vertical and three grand models, some as standard digital and some as ensemble models. The cabinets come in a variety of finishes and distinctive, contemporary designs, including some with smaller, sleeker designs suitable when space is limited. The new ROS V.5 Plus sound engine contains the clean, realistic sound of a 12-megabyte grand piano sound sample. The woodenkey, triple-sensor, Real Hammer Action (RHA-3W) uses the hammer weight, not springs, to reproduce the touch and feel of an acoustic piano. The flagship model VGP-4000 digital grand is one of the only digital pianos on the market to contain a player-piano feature, and its USB memory stick can store a library of 1,300 songs. All Dynatone models come with a three-year parts and labor warranty.

Flychord

Flychord Instrument Company 327 N. First Street #B Alhambra, California 91801 626-223-2445 admin@flychord.com www.flychord.com

Flychord, a new brand of digital piano, is a subsidiary of a company headquartered in Shenzhen, Guangdong Province, China. Flychord currently offers two models in the U.S., the DP330 and DP420K, both ensemble verticals. The DP330 has 500 voices and 210 auto-accompaniment styles. The DP420K, with 40 voices and 50 styles, is more limited as an ensemble instrument, but with its triple-sensor and ivory-textured keys, support for half pedaling, and more elegant furniture styling, it has greater acoustic-piano realism in performance and appearance.

Flychord pianos are distributed in the U.S. by a network of sales agents—piano dealers, studios, and schools—who have demonstrator models to show potential buyers, but who do not stock the instruments themselves. When the customer places an order with the sales agent, the instrument is delivered directly from Flychord, which also handles any future warranty issues. The instruments are also available for purchase from Amazon. com, and directly from the Flychord website.

Galileo

GW Distribution, LLC P.O. Box 329 Mahwah, New Jersey 07430 845-429-3712 www.galileopianos.com

Galileo is a division of Viscount International, an Italian company that traces its roots back to accordion builder Antonio Galanti, who built his first keyboard instrument in 1890. Today, Viscount is run by the fourth generation of the Galanti family, and distribution in the U.S. is handled by members of the fifth generation. Viscount also makes Physis digital pianos and Viscount organs.

The Galileo collection of digital pianos includes verticals, grands, and ensembles in a variety of colors, finishes, and elegant Italian styling.

Galileo recently introduced VEGA high-definition sound-generation technology, currently available on its new YP and GYP series of digitals.

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.

A renowned builder of acoustic pianos for over 90 years, Kawai entered the digital piano market in 1985. Today, Kawai's digital pianos comprise four main model lines: Concert Performer (CP), Concert Artist (CA), Classic Series (CS), and CN Series. Other digital models include the CE220, CL26, and KDP110. Portable digitals include the ES8 and ES110, and professional models include the MP Series stage pianos and the VPC1 virtual piano controller.

Kawai created the first hybrid digital instrument to use a transducer-driven soundboard for a more natural piano sound, a feature available in the CS11 and the flagship CA98. Many Kawai models offer USB digital audio recording and playback. Recently, Kawai introduced the first of its Novus line of hybrid instruments, the NV10. This new model features an actual grand-piano action, with modified hammers and optical sensors.

Several different types of action appear in Kawai digital pianos. Kawai is well known for its wooden-key actions for digital pianos, the current versions of these

being the Grand Feel (GF), GFII, RM3II, and AWA PROII, these actions available in upper-end models. The Responsive Hammer II (RHII), RHIII, and RH-Compact actions use an industry-standard graded hammer design with plastic keys, and are found in the lower-cost and portable models.

Kawai's main lines of digital piano are sold through a network of authorized local dealers; several models are also available from Kawai's online store. Professional products and other digitals are sold through a combination of authorized online and bricks-and-mortar retailers.

Korg

Korg USA, Inc. 316 South Service Road Melville, New York 11747 631-390-6800 www.korg.com

Korg was founded in 1962 to produce its first product, an automatic rhythm machine, and in 1972 entered the electronic-organ market. The LP-10 stage piano appeared in 1980, and its first digitally sampled piano, the SG1, was introduced in 1986. Korg now offers nine models of 88-key digital piano, plus several models with shorter keyboards. Following Kawai's lead, Korg recently announced plans to sell its home digital pianos online.

Kurzweil

American Music and Sound / Kurzweil USA 925 Broadbeck Drive, Suite 220 Newbury Park, California 91320 800-431-2609 info@americanmusicandsound.com www.kurzweilmusicsystems.com

Legendary American inventor Ray Kurzweil, perhaps best known for having developed a reading machine for the blind, and hailed by Forbes magazine as "a modernday Edison," 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, in 1984, was the Kurzweil K250, recognized as the world's first digital piano. In 1990, Boston-based Kurzweil Music Systems was purchased by Young Chang, which continues to operate the division today. Young Chang is part of Korean-based Hyundai Development Company (HDC), one of the largest companies in the world.

Designed and engineered in Boston, Massachusetts, by a team of American sound architects, all Kurzweil home pianos feature the award-winning PC3X sound engine. Kurzweil piano models also feature USB and audio inputs to allow easy expansion via iPads and other external peripherals. Kurzweil pianos and keyboards are available through a combination of musical instrument dealers, piano-specialty stores, and online sources.

Lowrey

Lowrey 989 AEC Drive Wood Dale, Illinois 60191 708-352-3388 info@lowrey.com www.lowrey.com

Early research by Chicago industrialist Frederick C. Lowrey produced a working model of an electronic sound source in 1918. The company bearing his name made organs for many years and, for a brief time in the 1980s, pianos. In 1988, Lowrey joined the Kawai family of companies, and is a developer and distributor of Lowrey Virtual Orchestra and digital piano products designed for the consumer market.

Nord

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

The Nord Piano 2 HA88, successor to the Nord Piano 88, is a professional stage piano that comes with a library of more than 1,000 sounds on a DVD, or downloadable from the Nord Piano website to the instrument via USB. Nord Keyboards are made in Sweden by Clavia DMI AB.

Omega

Piano Empire, Inc. 3035 E. La Mesa Street Anaheim, California 92806 800-576-3463 714-408-4599 info@omegapianos.com www.kainopianos.com

Omega is the brand name used in the U.S. for Kaino digital pianos. Established in 1986, Kaino, located in Guangzhou, China, began as a manufacturer of portable keyboards. In 1996, the company expanded to manufacture a full line of 88-note digital pianos, quickly

becoming a major provider of keyboards throughout China. In 2010, the Omega brand was established for distribution in North America and Europe.

Physis

Physis Piano
11 Holt Drive
Stony Point, New York 10980
508-457-6771
sales.us@viscount.it
www.viscountinstruments.us

Physis is a division of Viscount International, an Italian company that also makes Galileo digital pianos, among other brands. It has factories and research facilities in San Marino and Italy.

Physis uses physical modeling as the sound source for its instruments. Instead of recorded samples, physical modeling uses advanced mathematical algorithms to reproduce the physical properties of sound, and requires immense computational power that, until recently, was not technologically available. Two international patents have been granted for the Physis technology.

The Physis physical model combines more than 100 elements of the traditional acoustic grand piano sound; e.g., hammer density, string resonance, soundboard size, damper noise, duplex vibration, etc. One of the key advantages of physical modeling is that these elements can be modified by users to create their own unique sounds, and the resulting models can be shared with others, allowing for their continuing evolution. Other advantages include unlimited polyphony, unlimited pedal resolution, and the greater expressiveness that results from the real-time interaction of the physical elements.

Some Physis models have wooden keys with ivory-like keytops and triple sensors, for better expression and a more natural, realistic feel. The H- and V-series pianos have a customizable, multitouch, glass-panel interface that gives the user control of all items on the panel, including display colors. These models also have USB thumb-drive connections for audio and data storage and playback. The Pro and Stage versions are ergonomically designed for portability, and allow maximum flexibility of inputs and outputs.

Physis pianos are sold through a network of professional music retailers.

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 is 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 and clocks in postwar Japan. However, his enthusiasm for music meant that his business soon evolved into the repair of radios. 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 to his development of a prototype electric 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, he established Roland Corporation. The first Roland product, not surprisingly, was a rhythm box.

In 1973, Roland introduced its first all-electronic combo piano, the EP-10, followed in 1974 by the EP-30, the world's first electronic piano with a touch-sensitive keyboard. Japan's first genuinely digital pianos for home use were released by Roland in 1975 as part of the early HP series. Next came Roland's portable EP-09 electronic piano in 1980, and the debut of the wood-finish HP-60 and HP-70 compact pianos in 1981. In 1983, Roland released the HP-300 and HP-400, the very first digital pianos with MIDI.

When introduced in 1986, the RD-1000 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: slab, vertical, grand, ensemble, and stage instruments.

Of particular interest to those looking for educational features is Roland's HPi model, which includes a substantial suite of educational capabilities supported by an LCD screen mounted on a music desk. The new LX models add traditional-looking vertical pianos to the line. Roland offers one of the widest selections of

digital pianos in the industry. The chart of "Digital Piano Specifications and Prices" will give you a clear breakdown of the various models and features.

The Roland V-Piano is the first digital piano to rely entirely on physical modeling as its tonal source. Physical modeling breaks down the sound of a piano note 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 offerings in home digital pianos; the latest models, including the new GP607 Digital Grand, share the company's hallmark SuperNATURAL® piano sound engine, premium Progressive Hammer Action with Escapement, and built-in Bluetooth wireless capability, and differ from each other primarily in the specifications of their audio systems and cabinet-types.

Samick

Samick Music Corporation 1329 Gateway Drive Gallatin, Tennessee 37066 615-206-0077 www.samickdigital.com

Established in 1958, Samick Musical Instrument Mfg. Co. Ltd. is one of the world's leading producers of pianos and guitars (see under **Samick** in the acoustic-piano listings). The company has factories in China, Germany, Indonesia, Korea, and the U.S.

Samick is in the process of revamping its digital piano line, and currently sells one vertical and two grand models. The grands are ensemble digitals with six or eight speakers; the vertical has four speakers and an acoustic-piano–style soundboard. All three have Fatar keyboards with triple-sensor keys and are equipped with Bluetooth.

Samick has instituted a new sales method for its digital pianos. Sales agents—who could be traditional piano dealers, or music teachers, or anyone connected with the music business—have demonstrator models that prospective buyers can try out, but the agents do not stock or deliver the instruments. Instead, the agents assist customers in going online and buying directly from the manufacturer at a non-negotiable price. The piano is then delivered by the manufacturer to the customer's home with "white-glove service": the mover unboxes and sets up the instrument where the customer desires it,

then removes the packing materials from the premises. If there is ever a warranty issue, the customer contacts the manufacturer, who uses the same white-glove service to replace the instrument.

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, through other online outlets, and through Costco. Models change frequently.

Williams

Williams Pianos
P.O. Box 5111
Thousand Oaks, California 91359
www.williamspianos.com

Williams digital pianos are available from Guitar Center stores and the Musician's Friend e-commerce website. The company offers five models, including two verticals, two slabs with optional stand, and one ensemble grand. The sounds on Williams instruments are from the Williams Custom Sound Library, a large collection of high-definition sounds carefully sampled from sought-after acoustic, electric, and vintage keyboards, and unique to Williams digital pianos. Also unique to Williams pianos is the Mod/FX control interface, which enables authentic rotary effects on organs and vibrato on electric pianos. All models come with a free introduction to McCarthy Music educational software.

Yamaha

Yamaha Corporation of America P.O. Box 6600 Buena Park, California 90622 714-522-9011 800-854-1569 infostation@yamaha.com usa.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 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 entry-level line of digital verticals, with the long-popular YDP223 now replaced by the YDP181.

The CP and CP stage models are intended for situations that require a portable instrument. Available at

several price points, they are suitable for a wide range of applications, from live performance to studio recording. Some of the models in this line feature Yamaha's new Spectral Component Modeling (SCM) technology, or a combination of SCM and Advanced Wave Memory (AWM) sampling. The model CP1 also includes the NW-Stage action.

Yamaha's apps for iPad, iPhone, and iPod Touch are unique in the digital-piano world. The NoteStar app brings sheet music into the 21st century, and puts you in the band with real audio backing tracks that you can slow down or transpose. MusicSoft Manager lets you manage the content of your CVP Clavinova, while Repertoire Finder provides complete keyboard setups for songs you want to play.

Seven different actions are used in Yamaha digitals. In order of increasing quality, they are: Graded Hammer Standard (GHS), Graded Hammer (GH), 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.

A few years ago, Yamaha introduced its AvantGrand hybrid piano. For more information about the AvantGrand, see the article on "Hybrid Pianos" elsewhere in this issue.



Specifications and Prices

IN THE SPECIFICATION CHART for each brand of digital piano, 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. 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 charts.

Form The physical form of the model: G=Grand, V= Vertical (Console), S=Slab.

Ensemble A digital piano with easy-play and auto-accompaniments (not just rhythms).

Finish The wood finishes or colors available for a particular model (not always specified for slab models). Multiple finish options are separated by a slash (/). A manufacturer's own color term is used where a generic term could not be determined. See the box below for finish codes.

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.

Sound Source Indicates whether the sound source is Sampling (S) or Physical Modeling (M).

Voices The number of different musical voices the user can select from the instrument panel, plus (if applicable) the number of General MIDI (GM) or XG voices that are not user-selectable but are available for playback of MIDI files.

Key Off Indicates the presence of samples or simulation of Key Off sounds—acoustic piano keys and dampers returning to rest position and cutting off the sounds of vibrating strings.

FINISH CODES

A Ash

AG Amber Glow

Al Alder

Bl Blue

Bk Black

C Cherry

DB Deep Brunette

E Ebony

G Gold

lv Ivory

Laquor (used with a wood or color designation)

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

Sustain Indicates the presence of samples or simulation of the sound with the sustain pedal depressed (allowing the strings to vibrate sympathetically).

String Resonance Indicates the presence of samples or simulation of String Resonance—the resonance sound of the strings of non-played notes.

Rhythms/Styles The number of rhythms in a standard digital, or the number of auto-accompaniment styles available in an ensemble digital.

Polyphony The maximum number of sounds the instrument can produce simultaneously. UL=Unlimited

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 indicates the availability of an optional pedal unit with additional pedals.

Half Pedal Indicates that the model supports half-pedaling.

Action Indicates the type of action used, if specified.

Triple-Sensor Keys Indicates the presence of three key sensors, instead of the usual two, for greater touch realism.

Escapement Indicates the presence of an acoustic piano action's escapement feel.

Wood Keys Indicates actions with wooden keys.

Ivory Texture Indicates actions with ivory-textured keytops.

Bluetooth Indicates that the instrument is equipped with Bluetooth for connecting to the Internet.

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 Storage Indicates the type of external memory storage accessible, such as USB or SanDisk.

USB to Computer Indicates the model's ability to interface with a Mac or PC via USB cable.

USB Digital Audio Indicates the ability to record and play back digital audio via a USB flash drive.

Recording Tracks The number of internal recordable tracks for recording of MIDI files.

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.

Dimensions Width, Depth, and Height are rounded to the nearest inch.

Weight Weight of the model rounded to the nearest pound.

Brand & Model	Form	Ensemble	Finish	Estimated Price	MSRP	Sound Source	Voices	Key Off	Sustain	String Resonance	Rhythms/Styles	Polyphony	Total Watts	Speakers	Piano Pedals	Half Pedal
Blüthner																
e-Klavier PRO-88 EX	S		ESL	2,736	3,326	S	35+ 256GM	Υ	Υ	Υ		256	60	2	3 (5)	Υ
e-Klavier 1	V		ESL/WtSL	4,599	5,037	S	21	Υ	Υ	Υ		256	60	2	3	Υ
e-Klavier 2	٧		ESL/WtSL	5,704	6,381	S	35+ 256GM	Υ	Υ	Υ		256	100	4	3	Υ
e-Klavier 2	٧		EPL	6,534	7,389	S	35+ 256GM	Y	Υ	Υ		256	100	4	3	Υ
e-Klavier 3	V		ESL/WtSL	6,508	7,358	S	25+ 127GM	Υ	Υ	Υ		256	180	4	3	Υ
e-Klavier 3	٧		EPL	7,337	8,366	S	25+ 127GM	Υ	Υ	Υ		256	180	4	3	Υ
e-Klavier Pianette	V		EPL	15,907	18,782	S	35+ 256GM	Υ	Υ	Υ		256	200	4	3	Υ
e-Klavier Homeline	٧		ES	4,322	4,701	S	35+ 256GM	Y	Υ	Υ		256	60	4	3	Υ
e-Klavier Homeline	V		Stained wood	4,599	5,037	S	35+ 256GM	Υ	Υ	Υ		256	60	4	3	Υ
e-Klavier Homeline	٧		Waxed beechwood	4,875	5,373	S	35+ 256GM	Υ	Υ	Υ		256	60	4	3	Υ
e-Grand Studio	G		ESL/WtSL	11,279	12,936	S	25+ 127GM	Υ	Υ	Υ		256	150	4	3	Υ
e-Grand Studio	G		EPL/WtPL	13,767	15,960	S	25+ 127GM	Υ	Y	Υ		256	150	4	3	Υ
e-Grand Concert	G		ESL/WtSL	15,978	18,648	S	25+ 127GM	Υ	Υ	Υ		256	150	4	3	Υ
e-Grand Concert Casio	G		EPL/WtPL	19,261	22,638	S	25+ 127GM	Y	Y	Y		256	150	4	3	Y
PX-5S	S		Wt	999	1,399	S	242+ 128GM	Υ	Υ	Υ		256	0	0	1 (2)	
PX-160	S		Bk/G	499	799	S	18		Υ			128	16	2	1 (3)	Υ
PX-350	S	E	Bk/Wt	699	1,099	S	122+ 128GM		Υ	Υ	180	128	16	2	1 (3)	Υ
PX-360	S	Е	Bk	899	1,199	S	422+ 128GM	Y	Υ	Υ	200	128	16	4	1 (3)	Υ
PX-560	S	E	ВІ	1,199	1,599	S	522+ 128GM	Y	Υ	Υ	230	256	16	4	1 (3)	Υ
PX-770	٧		Bk/W/Wt	699	1,099	S	19		Υ			128	16	2	3	Y
PX-780	V	Е	Bk	899	1,399	S	122+ 128GM		Υ	Υ	180	128	40	4	3	Υ
PX-870	٧		Bk/W/Wt	999	1,499	S	19	Y	Υ	Υ		256	40	4	3	Υ
CGP-700	V	Е	Bk	799	1,099	S	422+ 128GM		Υ		200	128	40	6	1 (3)	Υ
AP-270	٧		Bk/W/Wt	1,049	1,499	S	22		Υ			192	16	2	3	Υ

Brand & Model	Action	Triple-Sensor Keys	Escapement	Wood Keys	Ivory Texture	Bluetooth	Vocal Support	Educational Features	External Storage	USB to Computer	USB Digital Audio	Recording Tracks	Warranty (Parts/Labor)	Dimensions WxDxH (Inchees)	Weight (Pounds)
Blüthner															
e-Klavier PRO-88 EX	4-zone graded				Υ				USB	Υ	Υ	1	2	55x17x5	30
e-Klavier 1	4-zone graded		Υ							Υ		1	2	57x22x35	198
e-Klavier 2	4-zone graded			Υ	Υ	Υ			USB	Υ	Υ	1	2	55x25x42	220
e-Klavier 2	4-zone graded			Υ	Υ	Υ			USB	Υ	Υ	1	2	55x25x42	220
e-Klavier 3	4-zone graded			Υ	Υ	Υ			USB	Υ	Υ	1	2	55x25x42	230
e-Klavier 3	4-zone graded			Υ	Υ	Υ			USB	Υ	Υ	1	2	55x25x42	230
e-Klavier Pianette	4-zone graded			Υ	Υ	Υ			USB	Υ	Υ	1	2	55x25x42	220
e-Klavier Homeline	4-zone graded		Υ			Υ			USB	Υ	Υ	1	2	140x60x35	135
e-Klavier Homeline	4-zone graded		Υ			Υ			USB	Υ	Υ	1	2	140x60x35	135
e-Klavier Homeline	4-zone graded		Υ			Y			USB	Υ	Υ	1	2	140x60x35	135
e-Grand Studio	4-zone graded			Υ	Υ	Υ			USB	Υ	Υ	1	2	51x33x35	225
e-Grand Studio	4-zone graded			Υ	Υ	Υ			USB	Υ	Υ	1	2	51x33x35	225
e-Grand Concert	4-zone graded			Υ	Υ	Υ			USB	Υ	Υ	1	2	51x55x35	248
e-Grand Concert Casio	4-zone graded			Υ	Υ	Y			USB	Y	Y	1	2	51x55x35	248
PX-5S	Weighted, Scaled, Hammer Action	Υ			Υ				USB	Υ	Υ	8	3/3	52x11x5	24
PX-160	Weighted, Scaled, Hammer Action	Υ			Υ			Y		Y		2	3/3	52x12x6	26
PX-350	Weighted, Scaled, Hammer Action	Υ			Υ			Υ	USB	Υ	Υ	17	3/3	52x11x6	25
PX-360	Weighted, Scaled, Hammer Action	Υ			Υ			Y	USB	Y	Υ	17	3/3	52x12x6	26
PX-560	Weighted, Scaled, Hammer Action	Υ			Υ			Υ	USB	Υ	Υ	17	3/3	52x12x6	27
PX-770	Weighted, Scaled, Hammer Action	Y			Y			Y		Υ		12	3/3	55x12x31	69
PX-780	Weighted, Scaled, Hammer Action	Υ			Υ			Υ	USB	Υ	Υ	17	3/3	53x12x33	70
PX-870	Weighted, Scaled, Hammer Action	Y			Y			Y	USB	Υ	Υ	2	3/3	55x12x30	76
CGP-700	Weighted, Scaled, Hammer Action	Υ			Υ			Υ	USB	Υ	Υ	16	3/3	52x12x31	57
AP-270	Weighted, Scaled, Hammer Action	Y			Y			Y		Υ		2	5/5	56x17x32	81

Brand & Model	Form	Ensemble	Finish	Estimated Price	MSRP	Sound Source	Voices	Key Off	Sustain	String Resonance	Rhythms/Styles	Polyphony	Total Watts	Speakers	Piano Pedals	Half Pedal
Casio (continued)																
AP-470	V		Bk/W/Wt	1,499	1,899	S	22	Υ	Υ	Υ		256	40	4	3	Υ
AP-650	٧	Е	Bk	1,899	2,299	S	122+ 128GM	Υ	Υ	Υ	180	256	60	4	3	Υ
AP-700	V		Bk	2,499	2,999	S	26	Υ	Υ	Υ		256	60	6	3	Υ
GP-300	V		Bk/Wt	3,636	3,999	S	26	Υ	Υ	Υ		256	100	6	3	Υ
GP-400	V		Bk	4,273	4,999	S	35	Υ	Υ	Υ		256	100	6	3	Υ
GP-500	V		BkP	4,909	5,999	S	35	Y	Y	Y		256	100	6	3	Υ
Dexibell																
VIVO P7	S	Е	Bk	1,899	2,199	M/S	79	Υ	Υ	Υ		UL	70	2	0 (2)	Υ
VIVO S7	S	Ε	Bk	1,999	2,299	M/S	79	Υ	Υ	Υ		UL	0	0	0 (3)	Υ
VIVO H1	S	Е	Bk	1,999	2,499	M/S	79	Υ	Υ	Υ		UL	70	2	3	Υ
VIVO H3	٧	Е	Bk/Wt	2,499	2,799	M/S	79	Υ	Υ	Υ		UL	70	4	3	Υ
VIVO H3S	٧	Е	Gr/Or	2,999	3,399	M/S	79	Υ	Υ	Υ		UL	70	4	3	Υ
VIVO H7	٧	Е	Bk/Wt	3,999	4,199	M/S	79	Υ	Υ	Υ		UL	112	5	3	Υ
VIVO H7	V	Е	Rd	3,999	4,499	M/S	79	Υ	Υ	Υ		UL	112	5	3	Υ
VIVO H7	V	E	EP/WtP/RdP	4,499	4,999	M/S	79	Y	Y	Y		UL	112	5	3	Υ
Dynatone																
SDP-600	V		EP	3,809	5,795	S	33+ 128GM		Υ	Υ		256	100	4	3	Υ
SDP-600	V		WtP	3,991	6,095	S	33+ 128GM		Υ	Υ		256	100	4	3	Υ
SLP-210	V		R	1,627	2,195	S	18+ 128GM					81	24	2	3	
SLP-250H	V		Bk	2,173	3,095	S	33+ 128GM		Υ	Υ		256	30	4	3	Υ
DPR-3200H	V	Е	Bk	2,900	4,195	S	188	Υ	Υ	Υ	80	256	100	4	3	Υ
DPR-3500	٧	Е	Bk	3,445	5,095	S	188	Υ	Υ	Υ	80	256	100	6	3	Υ
SGP-600	G		EP	5,173	7,695	S	33+ 128GM		Υ	Υ		256	100	4	3	Υ
SGP-600	G		WtP	5,355	7,995	S	33+ 128GM		Υ	Υ		256	100	4	3	Υ
GPR-3500	G	Е	EP	5,900	8,895	S	188	Υ	Υ	Υ	80	256	100	6	3	Υ
GPR-3500	G	Е	WtP	6,082	9,195	S	188	Υ	Υ	Υ	80	256	100	6	3	Υ
VGP-4000Q	G	Е	EP	9,173	14,495	S	188	Υ	Υ	Υ	80	256	100	6	3	Υ

Brand & Model	Action	Triple-Sensor Keys	Escapement	Wood Keys	Ivory Texture	Bluetooth	Vocal Support	Educational Features	External Storage	USB to Computer	USB Digital Audio	Recording Tracks	Warranty (Parts/Labor)	Dimensions WxDxH (Inchees)	Weight (Pounds)
Casio (continued)															
AP-470	Weighted, Scaled, Hammer Action	Υ			Y			Υ	USB	Υ	Υ	2	5/5	54x17x33	96
AP-650	Weighted, Scaled, Hammer Action	Υ			Y			Y	USB	Υ	Υ	17	5/5	54x17x36	111
AP-700	Weighted, Scaled, Hammer Action	Υ			Y			Y	USB	Υ	Υ	2	5/5	54x17x36	106
GP-300	Weighted, Scaled, Hammer Action	Υ		Υ	Y			Y	USB	Υ	Υ	2	5/5	57x19x38	171
GP-400	Weighted, Scaled, Hammer Action	Υ		Υ	Y			Y	USB	Υ	Y	2	5/5	58x19x39	189
GP-500 Dexibell	Weighted, Scaled, Hammer Action	Y		Υ	Y			Y	USB	Y	Y	2	5/5	57x19x38	171
VIVO P7	Weighted	Υ				Υ		Υ	USB	Υ	Υ		3	52x15x5	32
VIVO S7	Weighted	Υ			Υ	Υ		Υ	USB	Υ	Υ		3	52x15x5	39
VIVO H1	Weighted	Υ						Υ	USB	Υ	Υ		5	56x14x31	99
VIVO H3	Weighted	Υ				Υ		Υ	USB	Υ	Υ		5	56x14x31	97
VIVO H3S	Weighted	Υ				Υ		Υ	USB	Υ	Υ		5	56x14x31	97
VIVO H7	Weighted, graded	Υ			Υ	Υ		Υ	USB	Υ	Υ		5	56x14x31	137
VIVO H7	Weighted, graded	Υ			Υ	Υ		Υ	USB	Υ	Υ		5	56x14x31	137
VIVO H7	Weighted, graded	Υ			Y	Υ		Y	USB	Υ	Y		5	56x14x31	137
Dynatone															
SDP-600	New RHA-3W	Υ		Υ				Y		Υ		1	3/3	55x16x39	218
SDP-600	New RHA-3W	Υ		Υ				Υ		Y		1	3/3	55x16x39	218
SLP-210	New RHA							Υ		Y		2	3/3	54x16x33	75
SLP-250H	ARHA-I				Y			Y		Υ		1	3/3	54x16x33	95
DPR-3200H	ARHA-3I	Υ			Υ			Υ	USB	Υ		2	3/3	55x19x35	127
DPR-3500	New RHA-3W	Υ		Υ			Υ	Υ	USB	Υ		2	3/3	55x19x35	119
SGP-600	New RHA-3W	Υ		Υ				Y		Υ		1	3/3	55x36x31	176
SGP-600	New RHA-3W	Υ		Υ				Υ		Υ		1	3/3	55x36x31	176
GPR-3500	New RHA-3W	Υ		Υ			Υ	Υ	USB	Υ		2	3/3	56x46x36	209
GPR-3500	New RHA-3W	Υ		Υ			Υ	Υ	USB	Υ		2	3/3	56x46x36	209
VGP-4000Q	New RHA-3W	Υ		Υ			Υ	Υ	USB	Υ		2	3/3	60x56x40	440

Brand & Model	Form	Ensemble	Finish	Estimated Price	MSRP	Sound Source	Voices	Key Off	Sustain	String Resonance	Rhythms/Styles	Polyphony	Total Watts	Speakers	Piano Pedals	Half Pedal
Flychord																
DP330	V	Е	R	999	1,499	S	500		Υ		210	128	90	4	3	
DP420K	٧	Е	w	1,199	1,699	S	40		Υ	Υ	50	128	130	4	3	Υ
Galileo																
YP200	V		R	2,495	3,495	S	19		Υ	Υ		128	80	4	3	
YP300	٧		R	2,995	3,995	S	20		Υ	Υ		128	100	4	3	
YP300	V		EP	3,495	4,495	S	20		Υ	Υ		128	100	4	3	
Milano II	٧	Е	R	4,995	5,995	S	138				100	64	40	4	3	
GYP300	G		EP/MP/WtP	6,995	8,995	S	20		Υ	Υ		128	120	4	3	
Aria	G		EP	8,995	10,495	S	16		Υ	Υ		64	180	4	3	
Milano 3G	G	Е	EP	5,995	7,995	S	138				100	64	120	4	3	
Maestro II	G	Е	EP	9,995	11,995	S	128		Υ	Υ	128	128	250	5	3	
Maestro II	G	Е	WtP	10,495	12,495	S	128		Υ	Υ	128	128	250	5	3	
Maestro II	G	Е	MP	11,995	13,995	S	128		Υ	Υ	128	128	250	5	3	
Kawai																
ES110	S		Bk/Wt	729	1,049	S	19	Υ	Υ	Υ	100	192	26	2	1 (3)	Υ
MP7SE	S		Bk	1,799	2,199	S	256	Υ	Υ	Υ	100	256	0	0	1 (3)	Υ
MP11SE	S		Bk	2,799	3,299	S	40	Υ	Υ	Υ	100	256	0	0	3	Υ
VPC1	S		Bk	1,849	2,149		0						0	0	3	Υ
ES8	S		Bk/Wt	1,999	2,499	S	34	Υ	Υ	Υ	100	256	30	2	1 (3)	Υ
CL26	٧		R	1,099	1,495	S	8		Υ			96	30	2	1	Υ
CE220	V		ES	1,899	2,199	S	22		Υ	Υ	100	192	40	2	3	Υ
KDP110	٧		R	1,149	1,499	S	15	Υ		Υ		192	26	2	3	Υ
CN27	٧		R	1,899	2,299	S	19	Υ	Υ	Υ		192	40	2	3	Υ
CN37	٧		R	2,599	3,199	S	352	Υ	Υ	Υ	100	256	40	4	3	Υ
CN37	٧		WtS/ES	2,699	3,299	S	352	Υ	Υ	Υ	100	256	40	4	3	Υ
CA78	٧		R	4,082	4,999	M/S	66	Υ	Υ	Υ	100	256	100	6	3	Υ
CA78	V		WtS/ES	4,173	5,099	M/S	66	Υ	Υ	Υ	100	256	100	6	3	Υ
CA98	V		R	5,355	6,699	M/S	88	Υ	Υ	Υ	100	256	135	6	3	Υ
CA98	V		ES	5,445	6,799	M/S	88	Υ	Υ	Υ	100	256	135	6	3	Υ
CS8	V		EP	4,627	5,699	S	60	Υ	Υ	Υ	100	256	100	4	3	Υ
CS11	V		EP	6,627	8,499	S	80	Υ	Υ	Υ	100	256	135	6	3	Υ
CP3	V	Е	R	4,445	5,999	S	700+	Υ	Υ	Υ	183	256	100	2	3	Υ
CP3	V	Е	ES	4,536	6,099	S	700+	Υ	Υ	Υ	215	256	100	2	3	Υ
CP2	V	Ε	R	5,900	8,999	S	1000+	Υ	Υ	Υ	425	256	100	4	3	Υ
CP2	V	Ε	ES	5,991	9,199	S	1000+	Υ	Υ	Υ	425	256	100	4	3	Υ
CP1	G	E	EP	15,173	21,999	S	1000+	Υ	Υ	Υ	425	256	200	9	3	Υ
NV10	G		EP	12,995	15,999	M/S	88	Υ	Υ	Υ	100	256	135	7	3	Υ

Brand & Model	Action	Triple-Sensor Keys	Escapement	Wood Keys	Ivory Texture	Bluetooth	Vocal Support	Educational Features	External Storage	USB to Computer	USB Digital Audio	Recording Tracks	Warranty (Parts/Labor)	Dimensions WxDxH (Inchees)	Weight (Pounds)
Flychord															
DP330	Weighted, scaled							Υ		Υ	Υ	1	1/1	54x19x33	92
DP420K	Weighted, scaled	Υ	Υ		Υ			Υ		Y	Y	1	1/1	55x20x35	130
Galileo															
YP200	Grand Response									Υ		0	4/1	54x17x39	119
YP300	Graded Hammer									Y		3	4/1	54x20x41	137
YP300	Graded Hammer									Υ		3	4/1	54x20x41	137
Milano II	Graded Hammer									Υ		3	4/1	56x20x34	154
YP300G	Graded Hammer									Υ		3	4/1	56x29x35	209
Aria	AGT Pro		Υ	Υ						Υ		2	4/1	54x38x56	315
Milano 3G	Graded Hammer									Υ		3	4/1	56x29x35	200
Maestro II	AGT Pro		Υ				Υ	Υ	USB	Υ		5	4/1	54x39x35	345
Maestro II	AGT Pro		Υ				Υ	Υ	USB	Υ		5	4/1	54x39x35	345
Maestro II	AGT Pro		Υ				Υ	Υ	USB	Υ		5	4/1	54x39x35	345
Kawai															
	DUG											4	2/2	F2 44 6	26
ES110	RHC		\ \		\ \	Υ		Υ	LICD	\ \		1	3/3	52x11x6	26
MP7SE	RHIII	Y	Y	V	Y				USB	Y	Y	1	3/1	53x13x7	45
MP11SE	GF	Y Y	Y	Y Y	Y				USB	Y	Υ	1	3/1	58x18x8	77 65
VPC1 ES8	RM3II RHIII	Y	Y	Ť	Y				USB	Y	Υ	0	3/1	54x18x8	46
CL26		ĭ	ĭ		T				USB	T	ĭ	0	3/3 3/3	54x15x6	63
CE220	AHA IV-F AWA PROII			Υ					USB	Υ		2	3/3	51x11x31 54x20x35	137
KDP110	RHCII			'				Υ	036	'		1	3/3	56x16x34	84
CN27	RHIII	Υ	Υ		Υ	Υ		Y		Υ		1	5/5	54x16x34	99
CN37	RHIII	Y	Y		Y	Y		Υ	USB	Y	Υ	2	5/5	55x19x36	122
CN37	RHIII	Y	Y		Y	Y		Y	USB	Y	Y	2	5/5	55x19x36	122
CA78	GFII	Y	Y	Υ	Y	Y		Y	USB	Y	Y	2	5/5	57x18x36	163
CA78	GFII	Υ	Υ	Υ	Υ	Υ		Υ	USB	Υ	Υ	2	5/5	57x18x36	163
CA98	GFII	Υ	Υ	Υ	Υ	Υ		Υ	USB	Υ	Υ	2	5/5	57x18x37	187
CA98	GFII	Υ	Υ	Υ	Υ	Υ		Υ	USB	Υ	Υ	2	5/5	57x18x37	187
CS8	GFII	Υ	Υ	Υ	Υ			Υ	USB	Υ	Υ	2	5/5	57x19x37	176
CS11	GFII	Υ	Υ	Υ	Υ			Υ	USB	Υ	Υ	2	5/5	60x21x41	225
CP3	RHII	Υ	Υ		Υ			Υ	USB	Υ	Υ	16	5/5	56x23x38	224
CP3	RHII	Υ	Υ		Υ			Υ	USB	Υ	Υ	16	5/5	56x23x38	224
CP2	GF	Υ	Υ	Υ	Υ		Υ	Υ	USB	Υ	Υ	16	5/5	56x23x38	248
CP2	GF	Υ	Υ	Υ	Υ		Υ	Υ	USB	Υ	Υ	16	5/5	56x23x38	248
CP1	GF	Υ	Υ	Υ	Υ		Υ	Υ	USB	Υ	Υ	16	5/5	59x63x39	430

Brand & Model	Form	Ensemble	Finish	Estimated Price	MSRP	Sound Source	Voices	Key Off	Sustain	String Resonance	Rhythms/Styles	Polyphony	Total Watts	Speakers	Piano Pedals	Half Pedal
Korg																
B1	S		Bk/Wt	500	700	S	8		Υ	Υ		120	9	2	1	
SP280	S		Bk/Wt	700	980	S	30					120	22	2	1	Υ
SV-1-88	S		Bk	1,750	2,380	S	36		Υ	Υ		80	0	0	1 (3)	Υ
D1	S		Bk	600	840	S	30	Υ	Υ	Y		120	0	0	1	Υ
LP180	V		Bk/Wt	600	980	S	10	•				120	11	2	3	Y
LP380	V		Bk/Wt/R	850	1,400	S	30					120	22	2	3	Y
B1SP	V		Bk/Wt	600	850	S	8		Υ	Υ		120	9	2	3	
G1 Air	V		Bk/Wt/R	1,400	2,000	S	32	Υ	Y	Y		120	80	4	3	Υ
C1 Air	V		Bk/Wt/R	1,050	1,470	S	30	Y	Y	Y		120	50	2	3	Y
CLAII	V		DK/ VV L/ IX	1,050	1,470	3	30	'	'	'		120	30	2)	'
Kurzweil																
MPS-10	S		Bk	699	999	S	88	Υ	Υ		78	64	30	2	1	
KA-90	S	Е	Bk	599	699	S	20		Υ		50	128	60	4	1	
KA-110	S	Е	Bk	699	899	S	583		Υ		230	128	80	4	1	
CUP-1	٧		EP	2,999	3,999	S	1	Υ	Υ	Υ		256	100	4	3	Υ
CUP-2	V		R	2,999	4,499	S	88	Υ	Υ		78	64	140	4	3	
CUP-2	٧		EP	3,499	5,299	S	88	Υ	Υ		78	64	140	4	3	
CUP-2A	V		EP	3,999	5,999	S	88	Υ	Υ			128	150	6	3	
CUP-320	٧		R	2,499	3,999	S	88	Υ	Υ		69	128	50	4	3	Υ
MP-10F	V		R	1,499	2,499	S	88	Υ	Υ		78	64	30	4	3	
MP-10F	٧		EP	1,699	2,999	S	88	Υ	Υ		78	64	30	4	3	
MP-20	V		R	1,799	2,799	S	200	Υ	Υ		100	64	45	4	3	
MP-20	٧		EP	1,999	2,999	S	200	Υ	Υ		100	64	45	4	3	
MP-20F	V		R	1,999	3,499	S	200	Υ	Υ		100	64	45	4	3	
MP-20F	٧		EP	2,499	3,999	S	200	Υ	Υ		100	64	45	4	3	
KAG-100	G	Е	EP	2,499	3,999	S	200		Υ		100	64	35	4	3	
MPG-100	G	Е	EP	3,999	5,999	S	500		Υ		200	128	60	4	3	Υ
CGP-220W	G		EP	5,999	6,999	S	128	Υ	Υ		100	128	200	4	3	
Lowrey																
EZP7	V	Е	Bk	2,909	2,995	S	72				24	256	30	2	3	
Nord																
Nord Piano 3	S		Rd	2,999	3,399	S	1000+		Υ	Υ		40-60	0	0	3	Υ

Brand & Model	Action	Triple-Sensor Keys	Escapement	Wood Keys	Ivory Texture	Bluetooth	Vocal Support	Educational Features	External Storage	USB to Computer	USB Digital Audio	Recording Tracks	Warranty (Parts/Labor)	Dimensions WxDxH (Inchees)	Weight (Pounds)
Korg															
B1	NH							Υ				0	1/1	52x14x5	27
SP280	NH											0	1/1	54x16x31	42
SV-1-88	RH3									Υ		0	1/1	53x14x6	45
D1	RH3											0	1/1	53x11x5	36
LP180	NH											0	1/1	54x11x31	51
LP380	RH3							Υ				0	1/1	53x14x30	82
B1SP	NH							Y				0	1/1	52x14x30	45
G1 Air	RH3					Υ		Y		Υ		2	1/1	53x15x33	91
C1 Air	RH3					Υ		Y		Y		2	1/1	53x14x31	78
Kurzweil												_			
MPS-10	Weighted/LK									Υ		1	3/2	51x14x4	40
KA-90	Weighted								SD			1	3/2	54x14x5	27
KA-110	Weighted							Υ	SD	Υ		6	3/2	54x15x6	44
CUP-1	Weighted, graded					Υ	Υ			Υ	Υ	0	3/2	56x17x42	221
CUP-2	Weighted, graded		Υ	Υ						Υ		1	3/2	56x17x42	214
CUP-2	Weighted, graded		Υ	Υ						Υ		1	3/2	56x17x42	214
CUP-2A	Weighted, graded		Υ	Υ				Υ		Υ		1	3/2	56x17x42	225
CUP-320	Weighted, graded	Υ		Υ				Υ		Υ		1	3/2	56x19x35	105
MP-10F	Weighted/Fatar									Υ		1	3/2	56x19x35	115
MP-10F	Weighted/Fatar									Υ		1	3/2	56x19x35	115
MP-20	Weighted, graded/ LK		Υ							Υ		2	3/2	55x20x35	156
MP-20	Weighted, graded/ LK		Υ							Υ		2	3/2	55x20x35	156
MP-20F	Weighted, graded/ Fatar		Υ							Υ		2	3/2	55x20x35	156
MP-20F	Weighted, graded/ Fatar		Υ							Υ		2	3/2	55x20x35	156
KAG-100	Weighted					Υ		Υ	USB	Υ	Υ	2	3/2	56x30x35	150
MPG-100	Weighted, graded	Υ						Υ		Υ		6	3/2	56x36x35	212
CGP-220W	Weighted, graded		Υ	Υ						Υ		2	3/2	55x35x34	221
Lowrey															
EZP7	RHA				Υ			Υ				0	2/1	54x14x31	80
Nord															
Nord Piano 3	Fatar Weighted	Υ								Υ		0	1/1	51x13x5	40

Brand & Model	Form	Ensemble	Finish	Estimated Price	MSRP	Sound Source	Voices	Key Off	Sustain	String Resonance	Rhythms/Styles	Polyphony	Total Watts	Speakers	Piano Pedals	Half Pedal
Omega																
LX-505	V	Е	М	3,560	4,620	S	128				200	128	80	4	3	
LX-505	V	Е	EP	4,388	5,620	S	128				200	128	80	4	3	
	_													_		
LX-802	G	E	EP	6,888	8,610	S	128				200	128	80	4	3	
Physis																
H1	S		Alu	4,390	4,995	M	192	Υ	Υ	Υ		UL	0	0	3	Υ
H2	S		Alu	3,800	4,295	М	192	Y	Υ	Y		UL	0	0	3	Υ
K4EX	S		Bl	3,250	3,795	М	192	Υ	Υ	Υ		UL	0	0	3	Υ
V100	V		PE/PRd/ PWt/SG/PBI	9,695	9,695	М	192	Y	Y	Υ		UL	150	6	3	Υ
Roland																
RD-2000	S		Bk	2,499	2,999	M/S	1100+	Υ	Υ	Υ	200	UL/128	0	0	1 (3)	Υ
V-Piano	S		Bk	6,999	7,999	М	24	Υ	Υ	Υ		264	0	0	3	Υ
FP-30	S	Ε	Bk/Wt	699	899	M/S	35	Υ	Υ	Υ	8	128	22	2	1 (3)	Υ
FP-30C	V	Ε	Bk/Wt	875	1,137	M/S	35	Υ	Υ	Υ	8	128	22	2	3	Υ
FP-50	S	Ε	Bk/Wt	1,299	1,799		372	Υ	Υ	Υ	90	128	24	2	1 (3)	Υ
FP-50C	V	Е	Bk/Wt	1,499	2,099		372	Υ	Υ	Υ	90	128	24	2	1 (3)	Υ
FP-60	S	E	Bk/Wt	1,399	1,699		355	Y	Y	Y	21	288	26	2	1 (3)	Y
FP-90	S	E	Bk/Wt	1,799	2,199		355	Y	Y	Y	21	UL/384 UL/384	60	4	1 (3)	Y
FP-90C DP-603	V	E E	Bk/Wt Bk	2,140 2,399	2,627 2,899	M M	355 319	Y	Y	Y	21	UL/384	60 24	4 2	3	Y
DP-603	V	E	EP/WtP	3,199	3,699	M	319	Y	Y	Y	21	UL/384	24	2	3	Y
HP-504	V	_	R/ES	2,199	2,499		350	Y	Y	Y		128	24	2	3	Y
HP-601	V	Е	R/ES/Wt	2,199	2,599		319	Υ	Υ	Υ	21	288	28	2	3	Υ
HP-603	٧	Ε	R/ES/Wt	2,999	3,399	М	319	Υ	Υ	Υ	21	UL/384	60	2	3	Υ
HP-603A	V	Е	R/ES/Wt	2,999	3,399	М	319	Υ	Υ	Υ	21	UL/384	60	2	3	Υ
HP-605	V	Ε	EP	4,199	4,699	М	319	Υ	Υ	Υ	21	UL/384	74	6	3	Υ
HP-605	V	Е	R/ES/Wt	3,699	4,199	М	319	Υ	Υ	Υ	21	UL/384	74	6	3	Υ
HPi-50e	V	Ε	R	4,499	4,999		350	Υ	Υ	Υ	50	128	74	4	3	Υ
LX-7	V	E	EP	5,799	6,599	M	319	Y	Υ	Y	21	UL/384	74	6	3	Y
LX-7	V	E	W/ES	5,299	5,999	M	319	Y	Y	Y	21	UL/384	74	6	3	Y
LX-17	V	E	EP/WtP	6,299	7,299	M	319	Y	Y	Y	21	UL/384 128	74	8	3	Y Y
F-140R RP-102	V	E	ES/Wt Bk	1,199 999	1,399 1,199		316 318	Y	Y	Y	72 21	128	24 12	2	3	Y
RP-501R	V	E	Bk/Wt/R	1,499	1,799			Y	Y	Y	72	128	24	2	3	Y
או סכ- ואו	\ \	-	DK/WU/K	1,433	1,/33	IVI/3	010	'	'	'	12	120	24		3	ī

Brand & Model	Action	Triple-Sensor Keys	Escapement	Wood Keys	Ivory Texture	Bluetooth	Vocal Support	Educational Features	External Storage	USB to Computer	USB Digital Audio	Recording Tracks	Warranty (Parts/Labor)	Dimensions WxDxH (Inchees)	Weight (Pounds)
Omega															
LX-505	Premium Fatar Graded							Y	USB	Υ		7	1/90		
LX-505	Premium Fatar Graded							Y	USB	Υ		7	1/90		
LX-802	Premium Fatar Graded							Y	USB	Υ		7	1/90		
Physis															
H1	Tri-sensor, Hybrid	Υ	Υ	Υ	Υ				USB	Υ	Υ	16	3/1	54x13x4	58
H2	Lightweight Hammer, 3 sensors	Υ	Υ						USB	Υ	Υ	16	3/1	54x13x4	45
K4EX	Tri-sensor, Hybrid	Υ	Υ						USB	Υ	Υ	16	3/1	51x14x5	40
V100	Tri-sensor, Hybrid	Υ	Y	Υ	Y				USB	Υ	Y	16	3/1	58x17x46	233
Roland															
RD-2000	PHA-50 Concert	Υ	Υ	Υ	Υ				USB	Υ	Υ	1	3/2	56x15x6	55
V-Piano	PHA III	Υ	Υ		Υ				USB	Υ	Υ	0	3/2	56x21x7	84
FP-30	PHA-4 Standard	Υ	Υ		Υ	Υ		Υ	USB	Υ	Υ	1	5/2	51x11x6	31
FP-30C	PHA-4 Standard	Υ	Υ		Υ	Υ		Υ	USB	Υ	Υ	1	5/2	51x13x36	57
FP-50	Ivory Feel-G	Υ	Υ		Υ				USB		Υ	2	5/2	53x12x5	37
FP-50C	Ivory Feel-G	Υ	Υ		Υ				USB		Υ	2	5/2	53x16x37	64
FP-60	PHA-4 Standard	Υ	Υ		Υ	Υ		Υ	USB	Υ	Υ	1	5/2	51x14x5	42
FP-90	PHA-50 Concert	Y	Y	Y	Y	Y	Y	Y	USB	Y	Y	2	5/2	53x15x5	52
FP-90C	PHA-50 Concert	Y	Y	Y	Y	Y	Υ	Y	USB	Y	Y	2	5/2	53x15x37	83
DP-603	PHA-50 Concert	Y	Y	Y	Y	Y		Y	USB	Y	Y	3	5/2	55x14x31	104
DP-603	PHA-50 Concert PHA4-Premium	Y	Y	Υ	Y	Υ		Y	USB	Y	Y	3	5/2	55x14x31	104
HP-504	PHA-50 Concert	Y	Y	V	Y	V		Y	USB	Y	Y	3	5/2	55x17x41	114
HP-601	PHA-50 Concert	Y Y	Y	Y	Y	Y		Y	USB	Y	Y	3	5/2	54x17x40 54x17x42	110 110
HP-603 HP-603A	PHA-50 Concert	Y	Y	Y	Y	Y		Y	USB	Y	Y	3	10/10	54x17x42 54x17x42	110
HP-605	PHA-50 Concert	Y	Y	Y	Y	Y		Y	USB	Y	Y	3	10/10	54x17x44	119
HP-605	PHA-50 Concert	Y	Y	Y	Y	Y		Y	USB	Y	Y	3	10/10	54x17x44	119
HPi-50e	PHA4-Concert	Y	Y		Y			Y	USB	Y	Y	16	5/2	55x17x43	127
LX-7	PHA-50 Concert	Y	Y	Υ	Y	Υ		Y	USB	Y	Y	3	10/10	55x18x41	170
LX-7	PHA-50 Concert	Y	Y	Y	Y	Y		Y	USB	Y	Y	3	10/10	55x18x41	170
LX-17	PHA-50 Concert	Y	Y	Y	Y	Y			USB	Y	Y	3	10/10	55x19x42	193
F-140R	PHA-4-Standard	Y	Y		Y	Y		Υ	USB	Y	Y	1	5/2	54x14x31	76
RP-102	PHA4-Standard	Υ	Υ		Υ	Υ		Υ		Υ			5/2	54x17x39	83
RP-501R	PHA-4 Standard	Υ	Y		Υ	Υ		Y	USB	Y	Υ	1	5/2	54x12x31	81

Brand & Model	Form	Ensemble	Finish	Estimated Price	MSRP	Sound Source	Voices	Key Off	Sustain	String Resonance	Rhythms/Styles	Polyphony	Total Watts	Speakers	Piano Pedals	Half Pedal
Roland (continued)																
GP-7 (V-Piano Grand)	G		EP	19,950	22,999	М	30	Υ	Υ	Υ		264	240	8	3	Υ
GP-607 (Mini Grand)	G	Е	EP/WtP	5,999	6,999	М	319	Y	Y	Y	21	UL/384	70	5	3	Y
GP-609 (Grand Piano)	G	E	EP/WtP	8,999	9,999	M	319	Y	Y	Y	21	UL/384	74	7	3	Υ
Samick				,,,,,,	.,										-	
Ebony NEO	V		EP	4,089	4,095	S	10	Υ	Υ	Υ		135	80	4	3	Υ
SG-120	G	Е	EP/WtP/RdP	3,907	4,295	S	377	Υ	Υ	Υ	353	128	60	6	3	Υ
SG-500	G	Е	EP/WtP/RdP	4,816	5,295	S	377	Υ	Υ	Υ	352	128	80	8	3	Υ
Suzuki																
SCP-88	V		Bk	899	1,099	S	24					128	30	2	3	
CTP-88	V	Е	М	999	1,200	S	122+ 128GM		Υ	Υ	100	128	60	4	3	
SDP-2000ts	V	Е	R	1,299		S	122+ 128GM				240	128	220	4	3	
MDG-300	G	E	EP	1,699	3,390	S	122+ 128GM		Υ	Υ	100	128	120	6	3	
MDG-300	G	Е	MP/RdP/ BIP	999	3,390	S	122+ 128GM		Υ	Υ	100	128	120	6	3	
MDG-330	G	Е	EP	2,299	3,500	S	122+ 128GM		Υ	Υ	100	128	120	6	3	
MDG-400	G		EP	2,699	4,200	S	122+ 128GM		Υ	Υ	100	128	120	6	3	
MDG-4000ts	G		EP	3,399	5,899	S	122+ 128GM				240	128	250	6	3	
MDG-400	G		W	3,299		S	122+ 128GM		Υ	Υ	100	128	120	6	3	
Williams																
Legato	S		Bk	199	400	S	5		Υ			32	40	2	0 (1)	
Allegro 2	S		Bk	299	500	S	10		Υ			64	60	2	0 (1)	
Rhapsody 2	V		WG/EP	499	900	S	12		Υ			64	60	2	2	
Overture 2	V		EP/RdM	699	1,200	S	19+ 128GM		Υ			64	60	4	3	
Symphony Grand	G	E	EP/RdM	1,499	1,999	S	46+ 128GM	Y	Υ	Υ	120	128	60	6	3	

Brand & Model	Action	Triple-Sensor Keys	Escapement	Wood Keys	Ivory Texture	Bluetooth	Vocal Support	Educational Features	External Storage	USB to Computer	USB Digital Audio	Recording Tracks	Warranty (Parts/Labor)	Dimensions WxDxH (Inchees)	Weight (Pounds)
Roland (continued	<i>t)</i>														
GP-7 (V-Piano Grand)	PHA III	Υ	Υ		Υ				USB	Υ	Υ	1	5/2	59x59x61	375
GP-607 (Mini Grand)	PHA-50 Concert	Υ	Υ	Υ	Υ	Υ		Υ	USB	Υ	Υ	3	10/10	55x37x35	223
GP-609 (Grand Piano)	PHA-50 Concert	Υ	Υ	Υ	Υ	Υ		Υ	USB	Υ	Υ	3	10/10	57x59x62	326
Samick															
Ebony NEO	Graded	Υ				Υ	Υ	Υ	USB	Υ	Υ	2	3/3	57x19x41	170
SG-120	Graded	Υ				Υ	Υ	Υ	USB	Υ	Υ	5	3/3	56x35x29	170
Suzuki	Graded	Y				Y	Y	Y	USB	Y	Y	5	3/3	56x49x35	290
SCP-88	Weighted									Υ		0	1/1	54x18x34	
CTP-88	Graded						Y		SD	Υ		3	1/1	54x20x40	175
SDP-2000ts	Graded						Υ		SD	Υ		16	1/1	55x24x36	152
MDG-300	Graded						Y		SD	Y		3	1/1	55x30x36	218
MDG-300	Graded						Υ		SD	Υ		3	1/1	55x30x36	218
MDG-330	Graded						Y		SD	Y		3	1/1	57x39x36	330
MDG-400	Graded						Υ		SD	Υ		3	1/1	55x49x35	315
MDG-4000ts	Fatar Graded						Y		SD	Y		16	1/1	58x48x37	311
MDG-400	Graded						Υ		SD	Υ		3	1/1	55x49x35	315
Williams															
Legato	Semi-Weighted									Υ		0	1/1	50x11x4	19
Allegro 2	Weighted									Υ		2	1/1	52x5x13	30
Rhapsody 2	Weighted									Υ		2	1/1	54x16x31	83
Overture 2	Weighted							Y	USB	Y		2	1/1	55x19x34	117
Symphony Grand	Graded, Weighted					Υ		Y	USB	Υ	Υ	4	1/1	54x35x36	163

Brand & Model	Form	Ensemble	Finish	Estimated Price	MSRP	Sound Source	Voices	Key Off	Sustain	String Resonance	Rhythms/Styles	Polyphony	Total Watts	Speakers	Piano Pedals	Half Pedal
Yamaha																
P45B	S		Bk	450	499	S	10					64	12	2	1	Υ
P115	S		Bk/Wt	600	999	S	14				14/10	192	14	4	1 (3)	Υ
P255	S		Bk&EP/Wt	1,300	1,999	S	24	Υ	Υ	Υ	10	256	30	4	1	Υ
CP300	S		Bk	2,499	3,499	S	50+ 480XG	Υ	Υ	Υ		128	60	2	3	Υ
CP40 Stage	S		Bk	1,699	2,399	M/S	297	Υ	Υ			128	0	0	1 (2)	Υ
CP4 Stage	S		Bk	1,999	2,699	M/S	433	Υ	Υ			128	0	0	1 (2)	Υ
CP1	S		Bk	4,999	5,999	M/S	17	Υ	Υ	Υ		128	0	0	3	Υ
YDP143	V		BkW/R	1,100	1,499	S	10					192	12	2	3	Υ
YDP163	V		BkW/R	1,500	1,999	S	10					192	40	4	3	Υ
YDPS52	V		Bk/Wt	1,350	2,199	S	10					192	40	2	3	Υ
YDP181	V		R	1,700	2,199	S	14					128	40	2	3	Υ
YDP184	V		R	2,200	2,799	S	24	Υ	Υ	Υ		256	60	2	3	Υ
CSP150	V	Е	Bk	3,500	3,999	S	721+ 480XG	Υ	Υ	Υ	470	256	60	2	3	Υ
CSP150	V	Е	EP	4,000	4,599	S	721+ 480XG	Υ	Υ	Υ	470	256	60	2	3	Υ
CSP170	V	Е	Bk	4,700	5,399	S	721+ 480XG	Υ	Υ	Υ	470	256	180	4	3	Υ
CSP170	V	Е	EP	5,300	5,999	S	721+ 480XG	Υ	Υ	Υ	470	256	180	4	3	Υ
CLP625	V		EP	2,400	2,699	S	10	Υ	Υ	Υ		256	40	2	3	Υ
CLP625	V		Bk/R	2,000	2,299	S	10	Υ	Υ	Υ		256	40	2	3	Υ
CLP635	V		EP	3,200	3,599	S	36	Υ	Υ	Υ	20	256	60	2	3	Υ
CLP635	V		Bk/R/W	2,700	2,999	S	36	Υ	Υ	Υ	20	256	60	2	3	Υ
CLP645	V		EP	4,000	4,599	S	36	Υ	Υ	Υ	20	256	100	4	3	Υ
CLP645	V		Bk/R/W	3,500	3,999	S	36	Υ	Υ	Υ	20	256	100	4	3	Υ
CLP675	V		EP	5,300	5,999	S	36	Υ	Υ	Υ	20	256	210	6	3	Υ
CLP675	V		BK/R/W	4,700	5,199	S	36	Υ	Υ	Υ	20	256	210	6	3	Υ
CLP685	V		EP	6,600	7,499	S	49+ 480XG	Υ	Υ	Υ	20	256	300	6	3	Υ
CLP685	V		WtP	7,600	8,474	S	49+ 480XG	Υ	Υ	Υ	20	256	300	6	3	Υ
CLP685	V		Bk	5,800	6,499	S	49+ 480XG	Υ	Υ	Υ	20	256	300	6	3	Υ
R01	V		Wt	4,900	7,199	S	1	Υ	Υ			128	24	2	3	Υ
F02	V		EP/BIP/ RdP/OrP	5,000	7,699	S	20	Υ	Υ			128	80	4	3	Υ
F11	V		EP/BIP/ RdP/OrP	7,500	13,999	S	20	Υ	Υ			128	80	4	3	Υ
NU1	V		EP	5,816	6,499	S	5	Υ	Υ	Υ		256	160	4	3	Υ

Brand & Model	Action	Triple-Sensor Keys	Escapement	Wood Keys	Ivory Texture	Bluetooth	Vocal Support	Educational Features	External Storage	USB to Computer	USB Digital Audio	Recording Tracks	Warranty (Parts/Labor)	Dimensions WxDxH (Inchees)	Weight (Pounds)
Yamaha															
P45B	GHS									Υ		0	3/3	52x12x6	26
P115	GHS									Υ		2	3/3	52x12x6	26
P255	GH				Υ				USB	Υ	Υ	2	3/3	53x14x6	38
CP300	GH									Υ		16	3/3	54x18x7	72
CP40 Stage	GH								USB	Υ	Υ	0	3/3	52x14x6	36
CP4 Stage	NW-GH3	Υ		Υ	Υ				USB	Υ	Υ	0	3/3	52x14x6	39
CP1	NW-Stage			Υ	Υ				USB	Υ		0	3/3	55x17x7	60
YDP143	GHS									Υ		2	3/3	54x17x32	84
YDP163	GH3	Υ			Υ					Υ		2	3/3	54x17x33	93
YDPS52	GH				Υ					Υ		2	3/3	55x12x31	80
YDP181	GH								USB	Υ		2	3/3	54x34x20	110
YDP184	GH3	Υ			Υ				USB	Υ		16	3/3	57x36x18	123
CSP150	GH3X	Υ	Υ		Υ		Υ	Υ	USB- Tablet	Υ	Υ	16	5/5	56x18x40	127
CSP150	GH3X	Υ	Υ		Υ		Υ	Υ	USB- Tablet	Υ	Υ	17	5/6	56x18x40	127
CSP170	NWX	Υ	Υ	Υ	Υ		Υ	Υ	USB- Tablet	Υ	Υ	18	5/7	56x18x40	147
CSP170	NWX	Υ	Υ	Υ	Υ		Υ	Υ	USB- Tablet	Υ	Υ	19	5/8	56x18x40	147
CLP625	GH3X	Υ	Υ		Υ					Υ		2	5/5	53x16x33	95
CLP625	GH3X	Υ	Υ		Υ					Υ		2	5/5	53x16x33	99
CLP635	GH3X	Υ	Υ		Υ			Υ	USB	Υ	Υ	16	5/5	58x18x37	123
CLP635	GH3X	Υ	Υ		Υ			Υ	USB	Υ	Υ	16	5/5	58x18x37	137
CLP645	NWX	Υ	Υ	Υ	Υ	Υ		Υ	USB	Υ	Υ	16	5/5	58x18x37	132
CLP645	NWX	Υ	Υ	Υ	Υ	Υ		Υ	USB	Υ	Υ	16	5/5	58x18x37	146
CLP675	GrandTouch	Υ	Υ	Υ	Υ	Υ		Υ	USB	Υ	Υ	16	5/5	58x19x38	152
CLP675	GrandTouch	Υ	Υ	Υ	Υ	Υ		Υ	USB	Υ	Υ	16	5/5	58x19x38	157
CLP685	GrandTouch	Υ	Υ	Υ	Υ	Υ		Υ	USB	Υ	Υ	16	5/5	58x19x41	183
CLP685	GrandTouch	Υ	Υ	Υ	Y	Υ		Υ	USB	Υ	Υ	16	5/5	58x19x41	183
CLP685	GrandTouch	Υ	Υ	Υ	Υ	Υ		Υ	USB	Υ	Υ	16	5/5	58x19x41	196
R01	NW			Υ	Y							0		55x15x38	88
F01	NW			Υ					USB	Υ		1	5/5	56x16x39	168
F11	NW			Υ					USB	Υ		1	5/5	56x16x39	198
NU1	Specialized Upright	Υ		Υ					USB	Υ	Y	1	5/5	60x18x40	240

Brand & Model	Form	Ensemble	Finish	Estimated Price	MSRP	Sound Source	Voices	Key Off	Sustain	String Resonance	Rhythms/Styles	Polyphony	Total Watts	Speakers	Piano Pedals	Half Pedal
Yamaha (continue	ed)															
NU1X	V		EP	5,907	6,999	S	15	Υ	Υ	Υ		256	180	4	3	Υ
NU1X	٧		WtP	6,180	7,199	S	15	Υ	Υ	Υ		256	180	4	3	Υ
CVP701	V	Е	W	4,127	5,399	S	777+ 480XG	Υ	Υ	Υ	310	256	50	2	3	Υ
CVP701	V	Е	EP	4,636	6,199	S	777+ 480XG	Υ	Υ	Υ	310	256	50	2	3	Υ
CVP705	V	Е	W	6,455	8,699	S	984+ 480XG	Υ	Υ	Υ	470	256	140	6	3	Υ
CVP705	V	Е	EP	7,245	9,699	S	984+ 480XG	Υ	Υ	Υ	470	256	140	6	3	Υ
CVP709	V	Е	W	10,091	14,499	S	1270+ 480XG	Υ	Υ	Υ	600	256	200	9	3	Υ
CVP709	V	Е	EP	11,087	15,999	S	1270+ 480XG	Υ	Υ	Υ	600	256	200	9	3	Υ
H01	G		AG/VR/DB	7,500	13,199	S	10	Υ	Υ			64	80	4	3	Υ
H11	G		AG/VR/DB	10,000	20,799	S	10	Υ	Υ			64	80	4	3	Υ
N1	G		EP	8,271	9,999	S	5	Υ	Υ	Υ		256	175	6	3	Υ
N2	G		EP	12,635	14,999	S	5	Υ	Υ	Υ		256	500	12	3	Υ
N3X	G		EP	18,816	22,199	S	10	Υ	Υ	Υ		256	500	12	3	Υ
CLP665GP	G		EP	5,500	6,199	S	36	Υ	Υ	Υ	20	256	70	4	3	Υ
CLP665GP	G		WtP	6,300	6,999	S	36	Υ	Υ	Υ	20	256	70	4	3	Υ
CVP709GP	G	E	EP	15,224	20,999	S	1270+ 480XG	Υ	Υ	Y	600	256	200	9	3	Υ

Brand & Model	Action	Triple-Sensor Keys	Escapement	Wood Keys	Ivory Texture	Bluetooth	Vocal Support	Educational Features	External Storage	USB to Computer	USB Digital Audio	Recording Tracks	Warranty (Parts/Labor)	Dimensions WxDxH (Inchees)	Weight (Pounds)
Yamaha (continu	led)														
NU1X	Specialized Upright	Υ		Υ		Υ			USB	Υ	Υ	1	5/5	60x18x40	240
NU1X	Specialized Upright	Υ		Υ		Υ			USB	Υ	Υ	1	5/5	60x18x40	240
CVP701	GH3X		Υ		Υ		Υ	Υ	USB	Υ	Υ	16	5/5	53x24x36	130
CVP701	GH3X	Υ	Υ		Υ		Υ	Υ	USB	Υ	Υ	16	5/5	53x24x36	130
CVP705	NWX	Υ	Υ	Υ	Υ		Υ	Υ	USB	Υ	Υ	16	5/5	56x24x34	170
CVP705	NWX	Υ	Υ	Υ	Υ		Υ	Υ	USB	Υ	Υ	16	5/5	56x24x34	170
CVP709	NWX	Υ	Υ	Υ	Υ		Υ	Υ	USB	Υ	Υ	16	5/5	56x24x34	174
CVP709	NWX	Υ	Υ	Υ	Υ		Υ	Υ	USB	Υ	Υ	16	5/5	56x24x34	174
H01	NW	Υ		Υ					USB			0	5/5	58x30x30	181
H11	NW			Υ					USB			0	5/5	58x30x30	216
N1	Specialized Grand	Υ	Υ	Υ					USB			1	5/5	58x24x39	266
N2	Specialized Grand	Υ	Υ	Υ	Υ				USB			1	5/5	58x21x40	313
N3X	Specialized Grand	Υ	Υ	Υ	Υ				USB	Υ	Υ	1	5/5	58x47x40	439
CLP665GP	GH3X	Υ	Υ		Υ	Υ		Υ	USB	Υ	Υ	16	1	56x45x37	227
CLP665GP	GH3X	Υ	Υ		Υ	Υ		Υ	USB	Υ	Υ	16	1	56x45x37	227
CVP709GP	NWX	Υ	Υ	Υ	Υ		Υ	Y	USB	Υ	Υ	16	5/5	56x45x36	242

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LARRY FINE, Editor, is the author of *The Piano Book: Buying & Owning a New or Used Piano*, for more than 25 years the standard consumer reference in the piano business. A Registered Piano Technician, Fine has been involved in the piano industry for 35 years.