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DESIGNED BY STEINWAY & SONS®

# ESSEX FEATURES OF DISTINCTION

*Preface: These features may also be found on other high-quality instruments, but there is benefit to knowing of their existence. Many features ARE unique to Steinway-Designed pianos, so they need to be understood to be appreciated.*

## THE INSTRUMENT

### DESIGNED BY STEINWAY & SONS

Steinway & Sons has spent more than 165 years mastering the art of piano building. Since its founding in Manhattan by Henry Engelhard Steinway in 1853, the company has committed itself to creating the best piano possible. Many of its exclusive patents developed in the early years of operation were groundbreaking innovations that set the standards of modern piano design.

Starting in the late 1990's, Steinway & Sons decided it was time to expand the family of Steinway by developing a new line of lower-priced pianos to meet the needs of piano connoisseurs for whom the price of a Steinway-Designed Boston was out of reach. Drawing on Steinway's deep reservoir of piano knowledge, century-and-a-half-old tradition of innovation, and consistent commitment to excellence, Steinway & Sons designed the all-new Essex piano line. Designing each new piano from scratch, Steinway engineers adapted proven patents, concepts, and materials for the special requirements of high-technology manufacturing. Launched in 2000, Essex pianos continue to be the single best pianos available in the low-price range, bar none.

## THE BELLY - THE HEART OF THE PIANO

### *The Wooden Belly:*

### STEINWAY-DESIGNED RIM (GRANDS)

The Essex grand piano rim, both outer and inner, is laminated beech or soft maple.

### STEINWAY "MODEL A" WIDE-TAIL DESIGN

The wide-tail design featured on all Essex grand pianos is a special innovation by Steinway & Sons that creates 6% more surface area in the soundboard. This enriches the sound, giving the pianist the impression of playing on a larger piano. Essex grand pianos are wider at the tail than most pianos of the same length—allowing a larger soundboard area and producing a richer sound.

The greater the size of the soundboard, the greater the surface area to produce sound. So an Essex will have a larger and more powerful tone than another piano of a similar length without this feature. The larger soundboard area also allows for better placement of the bass bridge—which yields more volume, greater tone, and a bass that sings.

### MAPLE MULTIDIRECTIONAL PINBLOCK

The Essex pinblock is created from multiple layers of maple incorporated into a single block. The bi-directional structure of the layers grips the tuning pins from four directions—ensuring a tight fit, uniform pressure, and smoother tuning.

## STEINWAY-TYPE RADIAL BRACING IN GRANDS / STAGGERED BACKPOSTS IN UPRIGHTS

Radial bracing ties the framework of the Essex grand pianos together and provides support to the rim. Steinway and Boston pianos have the same radial bracing.

Staggered backposts in uprights mean that Essex has placed the backposts where the tension is greatest, instead of placing them neatly equidistant from each other. Thus, the backposts have been placed for maximum stability—ensuring the piano will last, tunings will be more stable, and the piano tone will be enhanced for all the years of its useful life.

## STEINWAY-TYPE TAPERED, SOLID SPRUCE SOUNDBOARD

High-grade, straight-grained, quarter-sawn spruce is used for its resonant qualities and for its high strength-to-mass ratio. The soundboard is solid and not laminated (also best for the resonance and projection of sound).

In 1936, Steinway patented the diaphragmatic soundboard, which is designed to be thicker in the middle and gently tapered towards the edges. The Essex soundboard has tapered thickness from bass to treble. A thinner soundboard in the bass area will vibrate more freely, so you get a bigger, richer, fuller tone.

## STEINWAY-PATENTED, VERTICALLY-LAMINATED BRIDGE WITH A SOLID MAPLE CAP

Steinway-designed vertically-layered maple with a solid maple cap in all Essex grands and uprights, and reverse-crowned to match that of the soundboard.

The bridges are vertically laminated to provide the best transfer of energy from the bridge to the soundboard. This is most efficient, as sound waves travel with the grain five times faster than across the grain. The cap is solid maple for strength and durability.

## STEINWAY-TYPE FULLY LET-IN SPRUCE RIBS

Essex ribs, just like Steinway and Boston ribs, extend to the full perimeter of the soundboard (as compared to being cut off at the inside of the rim/liner) and fit snugly into the notched rim/liner (no floating ribs). This provides for maximum stability of the soundboard and ribs. This ensures no loss of tone or power and eliminates possible rattles and buzzes.

### *The Frame and String System:*

## STEINWAY-TYPE LOW-TENSION STRING SCALE DESIGN

Steinway-designed tension scaling results in a longer sustaining tone and longer life of the whole piano.

A low-tension string scale design gives a fuller tone by allowing more of the lower partials to sing. It also has more sustain, is more powerful, has more dynamic range, and provides warmer and mellower tones. As a point of interest:

- Steinway & Sons Model O has 160 lbs/string
- Boston GP-178 has 165 lbs/string
- Essex EGP-155 has 168 lbs/string
- Kawai or Yamaha has 185 lbs/string

## NICKEL-PLATED CUT-THREADED TUNING PINS

Nickel is used to plate the tuning pins both to prevent rust as well as for its natural beauty. Essex tuning pins are cut, not rolled, which means that the thread is cut into the pins which affords greater holding power and helps to promote longer lasting tunings.

## LONG-FIBER, GREY-IRON SAND-CAST PLATE (FRAME)

Designed by Steinway & Sons, the plate is cast from gray iron and “over engineered” to provide strength to support 20 tons of string tension.

Think of a swing analogy—if a backyard swing set is set up on the lawn without tying the ends down, when the swing gets going really high, the legs tend to lift up. Then think about a swing set at a playground whose legs are in cement. You can swing as high as you want and the legs aren’t going to lift up. The heavier the plate, the less likely anything in the piano that’s attached to it will shift.

Long-fiber cast iron creates a very dense plate. A dense plate is better for providing reliable support for string tension and not absorbing energy, which yields a fuller tone.

## STEINWAY-PATENTED DUPLEX SCALE

Steinway & Sons’ patented duplex scaling adds harmonic dimension and longer sustain to the tone. When a piano string is set in vibration, partials or overtones are produced simultaneously with the fundamental tone. The quality of sound coming from an excited string can be improved by adding strength to a certain number of these partials. The non-speaking lengths or waste ends of the string have been divided off from the speaking lengths. These separate or divided sections are divided by a duplex scale which will allow the divided parts to vibrate by themselves in harmony with each other.

In Steinway, Boston and Essex grands, the “front duplex scale assists mechanically in a more rapid subdivision of the usual speaking length into its segmental vibrations, strengthening the harmonic partials. In addition, the rear duplex scale vibrates in sympathy with its corresponding partial tones (in the main portion of the string), thus producing overtones that lend brightness and color to the fundamental tone.” The end result to the listening ear is a fuller, richer, more powerful tone with longer sustain.

## HIGHEST GRADE STEEL STRINGS FROM RÖSLAU

Roslau produces the highest quality strings for not only quality but uniformity. Superior strings enable superior tone, so you’re going to have great sound/tone for years of use.

## SOLID COPPER-WOUND BASS STRINGS

Solid copper-wound will last longer than copper-plated on steel so that is why it’s used. It also helps to ensure pure tone for the life of the piano.

Steinway-patented overstringing allows maximum speaking length of bass strings and a smoother transition from bass to tenor sections.

## DOWNBEARING CUSTOMIZED FOR EACH PIANO

Piano tone is created when a piano hammer strikes a piano string, causing the string to vibrate, which causes the soundboard to vibrate, which causes the air to vibrate, creating the sound waves that we hear. How effectively the vibration transfer from string to bridge occurs is determined, in part, by how much force the strings apply to the bridge—this force is called “Downbearing.” The downbearing force is determined, in part, by how much the strings bend as they go over the bridges.

In order to achieve a full, rich, even tone across the entire piano scale, Steinway & Sons precisely specifies the string bend angle. In all of The Family of Steinway-Designed Pianos, this downbearing angle is carefully established by adjusting the height of the bridge in each section of each instrument.

## FROM THE FINGERS TO THE STRINGS

### *The Keys:*

#### SOLID, STRAIGHT-GRAIN SPRUCE KEYS

Spruce is selected for its light and responsive qualities. Each key is one piece of solid spruce with the grain oriented in the direction of the key. This provides the best strength/mass ratio. The solid wood provides the strength to resist years of heavy use.

#### HARDWOOD INSERTS IN KEYFRAME

The keyframe has a pressure/pivot point on the balance rail. The keys rotate back and forth on a pin that is anchored in the keyframe. As it takes a lot of wear and tear, it has to be made from a material that will stand up to years of use. Therefore, hardwood is used for durability and to ensure uniformity and longevity of touch over years of use.

#### HARDWOOD KEY BUTTONS

The keys themselves are made of softer wood, spruce, selected for its light and responsive qualities. To avoid wear on the keys from occurring, hardwood key buttons are mounted on each key to provide a durable guide for the key as it moves back and forth on the balance rail pin. The keys can take a lot of wear and tear without developing a wobble over time—thereby providing the durability of a consistent touch for years of use. It's the same design that is used in Steinway pianos.

#### INDIVIDUALLY-WEIGHTED KEYS

Each one of the 88 keys is individually balanced and weighted, making the key resistance even from note to note and enabling the piano to respond consistently across the entire keyboard. This ensures a superior touch for the pianist and ensures that the piano will respond with nuance and sensitivity to the pianist's playing.

### *The Action:*

#### STEINWAY-TYPE ACTION GEOMETRY

The Essex grand piano action possesses a Steinway-type action geometry, including angled whippen heel for good action feel and good action performance. This ensures that the Essex piano action effectively translates the motion of the fingers to the motion of the hammer. The Essex action is characterized by a faster repetition, better stability, and heightened responsiveness—allowing the musician to play with maximum expression and control.

#### ALL-WOOD ACTION PARTS—NO PLASTIC

Steinway uses all-wood action parts, as wood determines the characteristic feel. Because of the nature of piano tone, the natural resonance of all parts, including the all-wood action parts, has an ultimate effect on the tone or sound. As in all fine pianos, including Steinways and Bostons, Essex continues to use all-wood action parts in all Essex actions.

## EXTRUDED ALUMINUM ACTION RAILS

The action rail provides a solid termination for hammer flanges, allowing the greatest transfer of energy when playing the piano (which translates into tone). Aluminum is used because it is very durable and is virtually impervious to temperature or humidity changes—and therefore acts as a solid anchor that will last for many years and throughout various climate zones and changes. It has an extruded raised rosette shape down the entire length of the action rail.

## STEINWAY-PATENTED ROSETTE-SHAPED FLANGES

A rosette shape is cut out of the flange so it can positively mate with the action rail, locking into place, preventing any twisting or shifting of the action parts. The rosette shape ensures a tight fit to keep all action parts in correct and permanent alignment, despite heavy use, humidity, and temperature changes. The rosette shape on the action rail and corresponding flanges has been a Steinway feature since it was originally patented in 1868, and it has been time tested in its ability to provide stability in regulation.

Think of a jigsaw puzzle: a piece with sharp and many zigs and zags is tighter than a piece with just one smooth round nodule.

As a point of interest, Young Chang flanges have one groove; Yamaha's flanges are essentially flat and then the action rail is roughed up a little with sandpaper to help prevent movement.

### *The Hammers:*

## STEINWAY-SPECIFIED PREMIUM HAMMERS PROVIDE THE "STEINWAY FAMILY" SOUND

Essex grand hammers are specified by Steinway and made by Imadegawa in Japan using German-made hammer felt and hornbeam moldings. Our extensive testing has shown these hammers to be superior to all other premium OEM hammers. These hammers consistently give Essex pianos a depth and richness of tone that no other hammer has been able to achieve.

As with all high-quality hammers, underfelt is used to help create the correct hammer structure, and two-pronged fasteners help secure the felt to the wooden molding.

## STEINWAY-DESIGNED OCTAGONAL HAMMERSHANKS

Essex uses the same design for its hammershanks as Steinway. The idea behind octagonal hammershanks is to reduce the mass of the hammershank while not compromising the strength of the shank. By shaving off strips of wood down the length of the shank all the way around the shank (like peeling a carrot, making it octagonal) you maintain the structural integrity since it's being removed along or with the grain of the shank. Therefore, you are reducing the mass of the shank, making it lighter and making the tone more musical and less wooden.

## THE BEAUTIFUL CASE

### STEINWAY-TYPE CASE ARCHITECTURE

Essex has created a piano with a timeless, classic look, similar to the Steinway piano, with:

- Graceful curves in the rim
- Crisp yet flowing arm shapes
- Sleek profiles for the keybed, wall cornice, backbottom, and console
- Coved toplid and keyslip (see below)

## **COVERED TOPLID/KEYSLIP**

The round cut-out on the edge of the toplid and keyslip, called “coving” (like the cove of a shoreline or mountainside) adds elegance to the overall graceful shape of the case.

## **SOLID BRASS HARDWARE**

The solid brass will look beautiful and last for years to come (as compared to brass plated).

## **ADDITIONAL FEATURES FOR FULL FUNCTIONALITY**

### **FULL SOSTENUTO IN GRANDS/MUTE PEDAL IN ALL UPRIGHTS**

All Essex pianos have a middle pedal. On Essex grands, whatever notes you play while the middle pedal is depressed will remain sustained. Therefore, there is NO repertoire that cannot be played on a Essex grand. On all Essex uprights, the middle pedal is a muffler, providing the option of soft play. All Essex pianos have a working middle pedal.

### **LOCKING TOP AND FALLBOARD ON THE EUP-123S**

Designed for the heavy demands of school use, the EUP-123S has a locking fallboard and toplid.

You have the built-in security, if you need it.

### **SLOW-FALL FALLBOARD (FOR ALL GRANDS)**

All Essex grands have slow-fall fallboards. Fingers won't get pinched, and there is greatly reduced risk of damage to the hinges or chips in the finish.

## **STEINWAY & SONS = PEACE OF MIND**

### **10-YEAR WARRANTY**

The Essex piano's comprehensive 10-year warranty gives you complete confidence in your investment in this piano and provides you with the security of knowing you're part of the Steinway family.

### **THE STEINWAY PROMISE INVESTMENT ASSURANCE**

Every Essex is backed by the Steinway Promise. If you decide to trade in your Essex piano for a new Steinway & Sons grand piano at any time within ten years, you will receive a trade-in credit equal to the original purchase price of your Essex piano.