

# All About Your Piano

*Piano* (lt. *pe-ano, pyano*) *n.* A musical instrument with a manual keyboard actuating hammers that strike wire strings, producing sounds that may be softened or sustained by means of pedals. (*American Heritage® Dictionary*)

Bartolomeo Cristofori invented the modern piano in the early 1700's. There had been other keyboard instruments before this time, like the harpsichord and the clavichord, but Cristofori came up with the idea of hitting the strings with a wooden hammer and that led to the pianos we hear and see today. The piano was originally named the pianoforte and comes from the Italian words for "soft-loud."

**There are two basic types of pianos.** Grand pianos have their strings and soundboard parallel to the floor, and verticals (or uprights) have their strings and soundboard turned up perpendicular to the floor. Both kinds come in different sizes and styles. Grands can be anywhere from 4-1/2 feet to 9-1/2 feet long. Uprights can be 52 or more inches high; around 45 inches ("studio uprights"); about 40-42 inches ("consoles"); and as low as 36-38 inches ("spinets").

*Did you know that more homes have pianos than any other musical instrument? Over 2 million people begin piano lessons each year.*

## What are the main parts of a piano?

There are two major parts to a piano - a **frame** and an **action**. What's a frame? What's an action? The *frame* (made from cast iron) is the foremost structural part of the piano. It is what the piano is built around. When you look in an upright or grand, it is usually gold-colored. It supports the huge tension of the piano strings (about 20 tons). The *action* is the mechanism that in an upright translates the **downward vertical motion** of the piano key when it is pressed into a **horizontal motion** as the hammer strikes the strings and the note is played. In a grand, it translates the **downward**

**vertical motion** of the piano key when it is pressed into an **upward vertical motion** as the hammer strikes the strings.



The cast iron frame sits on top of the piano bed. If you open the top of a grand piano, the first thing you will see is the cast iron frame. Right underneath the frame is the pin block. The pin block protects the action so that its parts do not get damaged, and gives support to the front end of the frame. The bridge is located between the frame and the soundboard. The bridge fits into the ridge of the frame, and holds the back end of the piano bed together. The soundboard itself is the bottom of the piano bed. The strings are pulled across the soundboard from the action to the bridge. The case is the external covering of the piano, and is usually of high quality wood. The keyboard sits on the front end of the case, with the white and black parts of the keys open to performance. The action consists of the interior parts of the key, the hammers, and the points of action inside the mechanism.

## How does a piano create sound?

When you push down on a key, the mechanism inside (the action) makes a hammer go up (in a grand) or forward (in an upright) to strike the strings. The hammer is a round stick with a head on it (it looks something like a real hammer), and the head is covered with very dense wool felt. When the string vibrates it makes a musical sound; the string is connected to a large soundboard that amplifies the sound much louder than the string could do by itself. When you let go of the key, a felt pad, called a damper, drops back onto the string and stops the sound again. When you press down the right pedal with your foot it raises all the dampers so that the strings can keep sounding.

The strings vibrate across the soundboard to the bridge. The soundboard, cast iron frame and the case hold the sound as it flows through and then out of the piano. With the top up, the

sound coming out of the piano has not only high tone quality, but also great resonance. The wood used to create the piano affects the resonance. If the wood is of high quality, the resonance is great; if the piano is poorly constructed with a weak wood, the resonance of the sound will also be of poor quality. If the top of the piano is down, the music is certainly quieter but also has more resonance.

### What kind of care does a piano need?

- **Keep your piano in tune.** It was specifically designed to be tuned to the international pitch standard of A-440 cycles per second. Have it tuned 1-2 times a year.
- **Keep your piano clean.**
- **Maintain the piano's finish.**
- **The maintenance of the inner workings of the piano and regulation should be left to a qualified piano technician.**
- **Try to maintain a fairly consistent temperature and humidity control in the room where your piano is placed.**
- **Play your piano regularly.** You'll get the most enjoyment from it and also reach your potential much faster.
- **Keep all drinks and standing liquid containers off the piano.**
- **Do not perform repairs yourself.**
- **Use only a professional piano mover to move your piano.**
- **Select a piano technician with care.** Contact the Piano Technicians Guild at 913-432-9975 or visit [www.ptg.org](http://www.ptg.org) to find a Registered Piano Technician (RPT) in your area.

### Piano Parts Glossary

**Action** • the combination of several thousand moving parts that work together to make the piano work.

**Cabinet, Case** • this is the outside of the piano and looks like a piece of furniture; it covers and supports the internal parts. The outside of a grand piano is called a rim.

**Hammers** • felt-covered wooden mallets that strikes a string to produce a note when a key is touched.

**Keys** • most pianos have 88 keys spanning 7-1/3 octaves. A key is a lever. When you depress it, the motion is transferred to the action. The action causes the hammer to hit the strings and the vibration creates a sound. The piano has 36 black keys and 52 white keys.

**Pedals** • press on the pedals with your feet to soften or sustain the sound. **Pins** • the hitch pin holds one end of the string and the tuning pin is the metal screw that holds the other end. The tuning pin is turned to adjust the tightness of the string.

**Regulation** • adjusting all of the moving parts inside a piano to make it sound its best.

**Soundboard** • the heart of the piano; a large, thin piece of wood glued to the piano back; the soundboard increases the volume the strings make when they vibrate.

**Strings** • taut metal wires made of steel or copper vibrate when struck by hammers; treble notes have three strings, middle notes have one or two and bass notes have one string.

**Tuning** • adjusting the tightness of the strings to change the pitch; piano technicians use a special wrench called a tuning hammer to turn the tuning pins.

