

Your piano is primarily made of wood. Like the living trees that produced the wood used in the building of your piano, wood responds to climate and environment - it breathes, stretches and flexes. All wood instrument musicians are familiar with the effects of changing humidity levels. Guitarists must frequently adjust their bridge heights and fingerboard action. Violinists must pay close attention to maintaining constant, ideal humidity levels - or else they may find their violin rather dramatically springing apart during a performance!

Just as with other wood-based instruments, your piano needs a constant level of ideal humidity - between 40% and 50% - to maintain its pitch and tone, quality of action, and to prevent permanent damage.

Maintaining Pitch and Tone

The soundboard is the single largest piece of wood in your piano. It is the **speaker** of the piano. In order for the piano to have proper tone, the strings, bridge, and soundboard must be in tension together. To make this occur, the piano is designed and built so that the strings have a slight downward angle on both sides of the bridge. This is called **downbearing**.

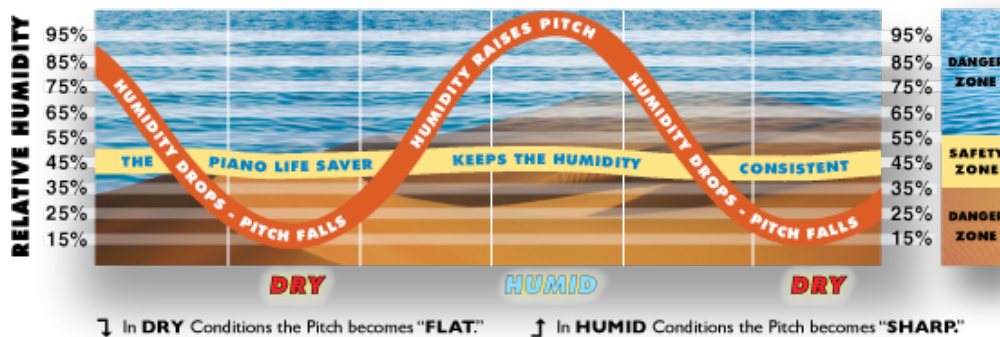


Along with this, the soundboard must have a slight upward curve which is called crown. The downbearing and crown must be very precise. It takes very little change to dramatically compromise the tone.

When the humidity drops, the soundboard shrinks and flattens, lowering the tension of the strings. The pitch will drop or become **flat**. The technician will have to perform a **pitch raise** to bring the piano back to the proper pitch before a **fine tuning** can be done. When the humidity rises, the soundboard absorbs moisture from the air,



making it swell and increasing the crown. Now, the pitch will go up or become **sharp**.



This chart demonstrates how drastically pitch can change when your piano is exposed to fluctuations in the humidity during seasonal weather changes.

The **Piano Life Saver** constantly regulates the humidity level inside the piano so that these variations can't occur. When the technician arrives for your regularly scheduled tuning, he/she is quickly and easily able to perform a **fine tuning** and leave your piano sounding its absolute best.

Maintain Quality of Action

The complex mechanical linkage that starts with the key that you press with your fingers, and ends with the hammer striking the strings is called the **action**. It quite literally has thousands of wooden parts that must all be precisely adjusted to work perfectly together. This adjustment process is called **regulation**. When the humidity changes, the precision is lost, resulting in the touch you have grown accustomed to changing and becoming inconsistent. Primarily in a vertical piano, the Piano Life Saver System will help counteract these issues.

Stop Rattling Keys and Noisy Action in Low Humidity



Just as doors and drawers become loose in dry air, the keys of your piano may rattle or become mechanically noisy. When the wooden action parts shrink from dryness, they become loose and can move around. This will lead to premature wear of these parts and costly repairs in the future.



Prevent Sluggish or Sticking Keys

Just as doors and drawers become tight and difficult to move, the keys of your piano may respond slowly or even stick down in times of high humidity.

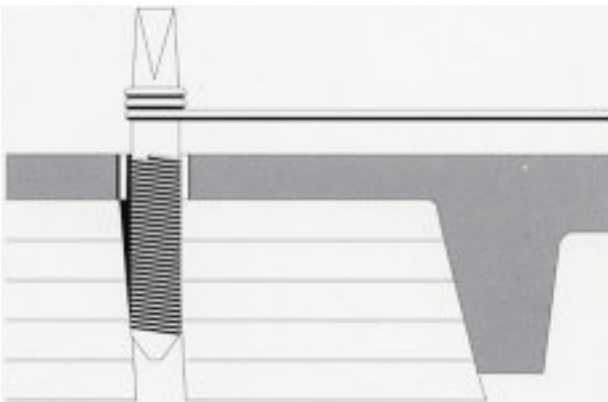
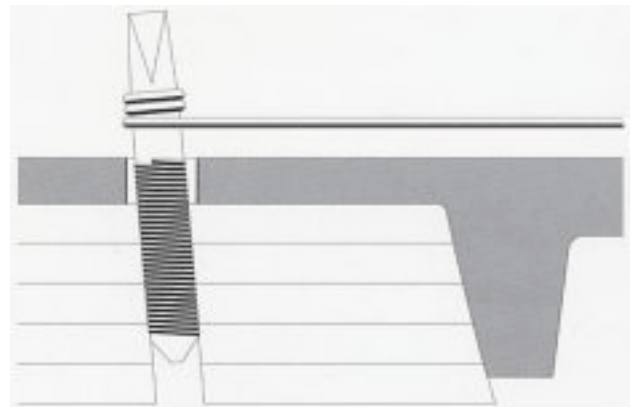
Prevent Costly, Permanent Bridge and Soundboard Damage



Over time, constant changes in humidity levels, with the corresponding shrinking and swelling of the soundboard, will damage the integrity of the soundboard. You will see this damage in the form of pressure ridges and cracks in the board. A crack in your soundboard has an extremely negative affect on the value of your piano. By maintaining a constant level of humidity in your piano, the **Piano Life Saver System** virtually eliminates these damaging humidity level swings and protects your instrument.

Prevent Pinblock Damage

Piano strings are under tremendous tension. The strings are coiled around tuning pins that are driven into holes in a multilayered piece of wood, usually maple, called the **pinblock**. The tuning pin is actually slightly larger than the hole that it is driven into. The resulting tight fit is necessary for the piano to be tuneable.



When the humidity increases, swelling the wood, the tuning pins may become so tight that the technician has trouble making the delicate adjustments that are necessary in a fine tuning. When the humidity level drops, the pinblock will shrink, resulting in loose tuning pins. This can result in a piano that will not hold tune very long or even render it completely untuneable. At this point you must either replace the pinblock or the piano.



The up and down cycling of humidity can also cause the layers in the pinblock to delaminate. This is virtually always accompanied by cracks developing within the layers themselves. The cost of this type of repair can often exceed the value of the piano.

Once again, the **Piano Life Saver System** keeps a constant moisture content in the wooden parts of the piano, ensuring ease of tuning, stability, and a long life for the pinblock in your vertical piano.

Prevent Serious Rust Damage to Strings and Pins

The strings of your piano are responsible for producing the musical sounds. With exposure to high humidity levels over long periods, strings become rusted and corroded.



At the junction where rusted strings wrap around rusted pins, rust corrosion forms a hardened bond between the two. Then, during a tuning, when your piano technician turns the pins to stretch the strings, the inflexible, rusted string snaps at this joint.

Because the **Piano Life Saver System** maintains a safe level of humidity in your piano, rust is much less likely to form on your strings. Remember, never clean your strings with a damp cloth!

Actual pianos may differ from photos. Photos only used to give general idea of what components look like. Grand and vertical piano components will vary and only one may be pictured.