TECHNICAL BULLETIN 2

• Regulation

As a conscientious piano owner, you probably have your piano tuned regularly by a qualified technician. You may, however, notice a deterioration of its performance despite regular tuning. It's important to note that tuning is only the adjustment of the system of strings and pins that determines the pitch of each string. Your piano also requires a periodic servicing called regulation, which attends to the mechanical parts which cause strings to sound when keys are played and affect the sound through use of the pedals.

What is regulation and how does it affect my piano's performance?

Regulation is the adjustment of the mechanical aspects of the piano to compensate for the effects of wear, the compacting and settling of cloth, felt and buckskin, as well as dimensional changes in wood and wool parts due to changes in humidity.

The three systems involved in regulation are the action, trapwork and damper system. The action is the mechanical part of the piano that transfers the motion of the fingers on the keys to the hammers that strike the strings. It is comprised of over 9,000 parts which require adjustment to critical tolerances to be able to respond to a pianist's every command. The trapwork is the assemblage of levers, dowels and springs that connects the pedals to the action affecting sustain and dynamics. The damper system is the mechanical part of the piano that stops the vibration of the string when you release the key and is controlled by the key and pedal systems.

If I have my piano tuned regularly, why do I need to have it regulated?

While tuning corrects the pitch of your piano, it is only one component of a complete maintenance program. Regulation attends to the touch and uniform responsiveness of your action, all vital to making each performance pleasurable. In addition, regulation ensures that your instrument is capable of producing a wide dynamic range — a critical factor, particularly in pianissimo passages.

Music is one of the most complex vehicles for expression. Its beauty is reliant upon personal interpretation which employs use of changes in dynamics and tempi. These changes require extremely fine adjustments to respond to the pianist's nuances and subtle shadings. A smooth, even response throughout the entire range of the keyboard and an extremely quick action capable of playing rapid passages and repeated notes evenly is essential. Outstanding response is essential for a pianist to create an outstanding performance.

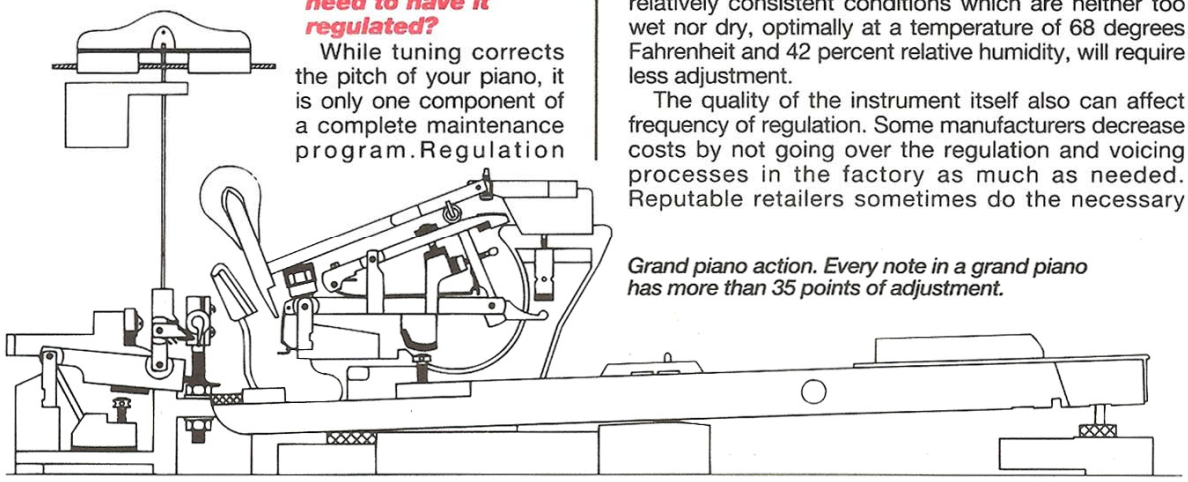
Do all pianos need to be regulated?

All upright and grand pianos need periodic regulation to perform their best. Frequency of regulation is dependent upon amount of use, exposure to climatic changes, and the instrument's quality, age and condition. New pianos may require regulation in their first year because settling and compacting of parts sometimes necessitates adjustment.

How often is regulation needed?

Only you and your technician together should decide how frequently your piano needs regulation. Several factors can contribute to this. The intensity and number of hours your instrument is played, and climatic conditions are all determinants. A piano kept in relatively consistent conditions which are neither too wet nor dry, optimally at a temperature of 68 degrees Fahrenheit and 42 percent relative humidity, will require less adjustment.

The quality of the instrument itself also can affect frequency of regulation. Some manufacturers decrease costs by not going over the regulation and voicing processes in the factory as much as needed. Reputable retailers sometimes do the necessary



Grand piano action. Every note in a grand piano has more than 35 points of adjustment.

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Part #: TB2

PIANO TECHNICIANS GUILD

The Piano Technicians Guild has two categories of active members: **Registered Piano Technicians** have passed a series of rigorous examinations on the maintenance, repair, and tuning of pianos. **Associates** have not passed the RPT examinations. Associates may be working toward RPT status, or may be piano retailers, rebuilders, or other specialists.

regulating themselves prior to selling the piano, but others don't.

Also, performance instruments may require some regulation before each use, due to the higher demands placed on them.

What are the signs that my piano needs regulation?

If your instrument displays a lack of sensitivity or a decreased dynamic range, it's a candidate for regulation. If you notice that the keys are not level (some higher or lower than the rest), the touch is uneven or that the keys are sticking, the need for regulation is indicated. However, a sluggish action or deep grooves in the hammers indicate the need for reconditioning or repair. Ask your technician to show you what needs adjustment on your piano.

No amount of practice can compensate for a poorly maintained action. Poor legato touch, chord playing where all notes of the chord don't speak clearly, a gradual loss of subtlety in phrasing and an inability to execute quick passages or note repetitions evenly may be the fault of the piano — not the player.

Why is reconditioning or rebuilding of the mechanical systems sometimes necessary prior to regulation?

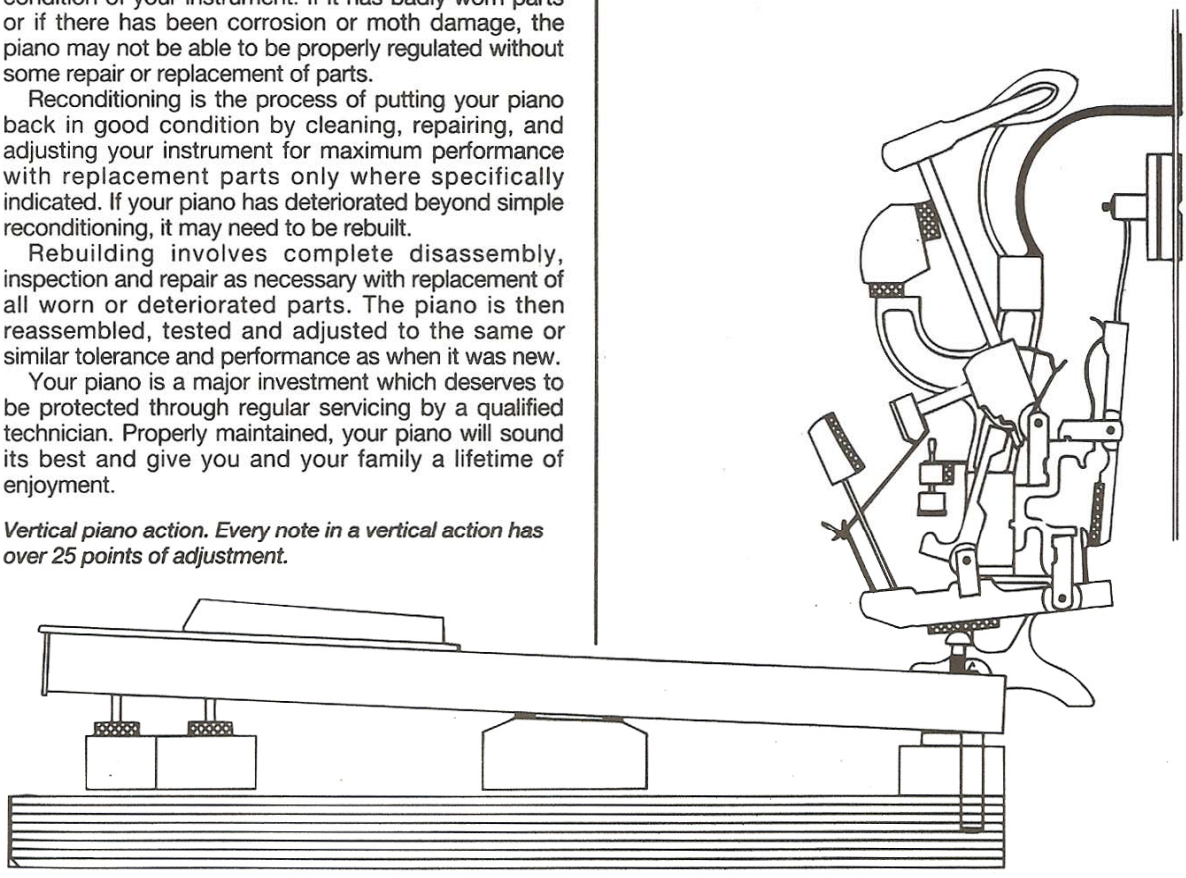
Prior to regulation, your technician will assess the condition of your instrument. If it has badly worn parts or if there has been corrosion or moth damage, the piano may not be able to be properly regulated without some repair or replacement of parts.

Reconditioning is the process of putting your piano back in good condition by cleaning, repairing, and adjusting your instrument for maximum performance with replacement parts only where specifically indicated. If your piano has deteriorated beyond simple reconditioning, it may need to be rebuilt.

Rebuilding involves complete disassembly, inspection and repair as necessary with replacement of all worn or deteriorated parts. The piano is then reassembled, tested and adjusted to the same or similar tolerance and performance as when it was new.

Your piano is a major investment which deserves to be protected through regular servicing by a qualified technician. Properly maintained, your piano will sound its best and give you and your family a lifetime of enjoyment.

Technician's Comments



Vertical piano action. Every note in a vertical action has over 25 points of adjustment.

Technical drawings courtesy of Jon Light, Kimball Piano.