



### For special situation Touchweight Balancing in Steinway Pianos

Actually, it is not new at all, but reminiscent of the older Hamburg Steinway repetition with the suspension assistance spring. We have affectionately dubbed it the "Turbo-Wippen".

While this new Turbo Wippen should never be used to solve problems in actions which are generated by geometry or "spread" discontinuities or in pianos where the client musician requires conventional touch resistance and moment of inertia, it should produce excellent results in the following situations:

1. Actions requiring so many keyleads to attain the standard key balance weight that the inertia of the key becomes an unacceptable impediment. (the Renner Turbo-Wippen will allow you to achieve touchweight AND remove all but two or three leads!)
2. Actions using increased density hammers which would otherwise generate too much downweight.
3. Actions modified for pianists requesting the "Viennese" type of very light keyboard touch now coming into favor in certain musical circles.

### How To Install

Easy to regulate with a simple bend of the support spring, which is located just behind the hammer rest cushion, Renner's new Turbo Wippen enables the conscientious piano technician to resolve almost any action touchweight problem he or she encounters, provided it is not caused by a geometry issue in the action frame.

If the objective is to create a super-light "Viennese" type of action, all of the leads in the keys must be removed. You can make the decision as to whether or not you wish to plug those holes, but if you do, please remember to use plugs which are fashioned of the same species wood as the keys, and orient the grain parallel to the grain in the keylever.

We choose to wait until the final product is completed, because we do not wish to redrill a hole for a balance lead in a spot we have previously plugged, nor do we wish to drill in between two holes that were closely drilled together. But more about that later.

Your action is set up with the new parts just as you would set up any action you were rebuilding, being careful to respect the action geometry relationships required of the model you are servicing. This process includes installing the complete set of new hammers, if that is part of the operation.

When the hammers are installed, the action will be rough-regulated. (To accomplish this, you will have to un-hook all of the assist springs on the wippens, but you will probably already have done that because the turbo wippens are much easier to install that way) Regulating with the springs unhooked is a pain, but you will get used to it very quickly.

Once the action is roughed in, re-hook the assist springs on the back of the wippens. Then, best with the help of an assistant, move downward from the top if you are right-handed, or upward from the bottom if you are left-handed with your assistant placing a downweight of fifty grams and an upweight of twenty grams on each key sequentially as you move along the keyboard.

You will have a pair of small, needle-nosed pliers in your hand, and will create a bend in the assist spring as indicated in the drawing. Your bend will be created to produce the degree of tension required to counter-balance the hammer with the fifty gram weight on the front of the key. That is, you will produce a condition which allows the fifty gram weight to slowly sink down on the key, as the hammer rises, by bending the assist spring to the appropriate degree.

The up weight should be watched to be sure that it is readily lifting the twenty grams of return weight. If your action geometry is correct, there will be no problem with the return weight. Then you will finish and fine regulate the action, voice the hammers, and complete any and all detail work on the keys and action.

The final step will be to go through the keyboard with one "trimming" lead, and even out the downweight of the scale so that it is uniform throughout.

We recommend that you not attempt to make the action lighter than 46 grams or so, although some actions may permit you to go quite a bit further down. Please remember that with the leads in the keys removed, the moment of inertia will be greatly reduced. This action will "feel" much lighter than it really is.

We like to put "trim" leads in existing holes whenever possible. This helps to keep from further destroying the integrity of the original key. At this point, we will also make the decision as to whether or not to plug the remaining holes in the keys. A word of caution to the wise: It is better to just leave the existing holes in the keys than to butcher the job with a poor attempt at plugging. Again, use sugar pine plugs in sugar pine keys, and, remember, dowels are not plugs!!!

### Conventional Installations

Many of us have encountered the situation where the actual static downweight of an action may be

52 grams, and the static upweight of an action may be 22 grams. The problem will be that the keys are loaded from fronts to balance pins with lead.

Or, we may have the similar problem of an action which weights down at 60 grams, and up at 34 grams, and we have to put two or three more leads in the keys to get it down to standard touch-weight.

In both situations we have the same problem: too much lead in the front of the key equals too high a moment of inertia equals a piano that is just too heavy to play no matter what the specifications indicate! We may want a "conventional" feel here, with a "normal" degree of touch-resistance.

No Problem!! The process we will use will be exactly as above, except that we will leave two leads in the bass keys, one lead in the middle section keys, and zero leads in the upper two sections. The downweight lead we will use will be 55 grams this time.

When the fine regulation and voicing are finished, we will re-weight to scale to a tapered section of 52, 51, 50, 49, 48 grams downweight, using one trim lead as described above. When we are finished, there will be three leads in the bass, two in the mid-section, and one in the treble sections. Perfect!

### Note

Because of the room at the back of the wippen that the assist spring occupies, it is important that the nominal distance from the hammershank center-pin to the center of the hammer molding be a nominal 5 1/8 inches, certainly no less than 5 inches. Insofar as this is usual for most Steinway pianos, the technician will encounter no problems with the hammer-tail striking the assist spring under conventional circumstances.

If, however, the hammer tail length bore is longer than one inch (from center of shank drilling to bottom of tail), or if the distance of the hammer molding center to the hammershank centerpin is less than 5 inches, the condition could occur that the hammer-tail will strike the wippen assist spring on the rebound or release of the hammer from its activated position.

Renner USA recommends the use of AcustiCraft's DeadLeader lead removal and installation pliers in connection with the key weighting encountered when installing your new Turbo wippens. These pliers will aid the rapid and tearout-free removal and installation of Steinway sized leads in your weighting operation.

