

# Reblitz Upright Regulation List

## - With Comments

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**Reblitz steps in bold.**

My comments in regular font.

### **1. Position the let-off rail.**

Should read something like “Check the let off rail in case it is loose. Make sure the screws are tight. Reposition if necessary.”

This should be fine, but the let off rail screws may have worked themselves loose.

### **2. Straighten the damper lift rod.**

This rod is virtually never bent. In rare cases, one of the small L-shaped hinge rods might be bent or broken.

Check how the dampers are lifting when you press the sustain pedal. If one of the hinge rods is broken, only one side of the dampers will lift while the other side will not.

### **3. Travel the hammer butts.**

(Sometimes just referred to as “travelling the hammers).

Sure, but they shouldn't need it if they were done already.

### **4. Align the hammers to the strings, align their height.**

Shouldn't be needed unless poorly replaced.

Make sure the hammers are parallel to each other. Some may be crooked or angled. You can do this with heat. The heat is supposed to soften the shank, or melt the glue. That's how we can realign the angle. Travelling may have tilted a previously parallel hammer.

Make sure that the strings are in the centre of the hammer, aligning side to side. You may need to use heat if the hammers have brass plates instead of wooden flanges.

Make sure the hammers are the same height. Especially in the treble where small changes in vertical hammer angle produce large changes in tone. Again, this may be a problem if the hammers were poorly replaced. Heat the glue in the head, and reposition up or down. You can also turn the bolt that the action sits on.

### **5. Align the jacks to the hammer butts.**

Don't bother if the butts are worn unless you are prepared to replace the worn butts. Look for jacks that are too close to the neighbouring butts. Those should be moved if they are at risk of moving two hammers at once. They should already be aligned.

### **6. Space and square the back checks.**

Shouldn't need to be done unless someone fooled around with them.

### **7. Square and space the keys.**

Shouldn't need to be done unless someone fooled around with them. Tightening the front rail pins so that it takes up the slack in the side to side motion of the keys, often corrects any spacing problems.

### **8. Set the hammer stroke.**

No. Need to set samples first.

### **9. Regulate lost motion.**

Yes.

### **10. Regulate the key height.**

Not really a regulation step. This refers to the average height. There's no one right height.

There's a large window. If the balance rail pins are buried, or the key tops are higher than the cheek blocks, then the keys are too high.

If you can't get enough key dip, or the key touches the key slip, then the keys are too low.

This is a "starting from scratch" situation or step, and as such, should not be needed unless all the felts were moth-eaten, for example, and you are replacing them all.

**11. Level the white keys.**

Yes.

**12. Level the sharp keys.**

Yes, by feeling the wood just behind the end of the key top, or setting them 1/2" above the whites.

**13. Regulate hammer let off.**

No. Wait for the sample.

**14. Regulate white key dip.**

No. Wait for the sample.

**SAMPLES:**

At this point, we will pick three or four samples from the low bass to the high treble, and perform the following steps to determine the best blow distance, key dip, and let off for each sample so that there is appropriate aftertouch.

Appropriate aftertouch is when there is a smallest space between the jack and the hammer butt when the key is fully depressed, and you can feel the key move a bit after let off.

The following is a brief description of what I call "**The Regulation Triangle**". There is a more detailed description within the membership section of <http://howtotunepianos.com>

- a) Measure the blow distance, let off, key dip for each sample key. Make a judgement as to how consistent they are. If they aren't consistent, then adjustments will eventually have to be made. Not now.
- b) Make a judgement on the after touch. Look for slight separation between jack top and hammer butt when key is depressed. Feel for a slight bit of key travel after let off. (There is another method using a plastic feeler gauge under the key. The thickness of the feeler gauge is the measurement of the aftertouch if the key doesn't move at all after let off.)
- c) If the aftertouch is good, and the measurements in a) were consistent between the samples, you may not need to change any blow distance, key dip, or let off. (Although you can adjust two of the three and not affect aftertouch. See f.)  
Confirm that all the measurements are consistent for all the keys.
- d) If there is insufficient aftertouch, you will need to "rob" from blow distance (less blow), key dip (more key dip), and/or let off (more let off) to increase aftertouch.
- e) If there is excessive aftertouch, you will be able to "improve" blow distance (by making more blow), improve key dip (by making less), and/or improve let off (by making less let off). Any of these adjustments will decrease after touch.
- f) For the measurements of blow distance, let off, and key dip that produce appropriate aftertouch, you have the option of "robbing" from one and "improving" another, thus keeping the aftertouch unchanged. Example, decreasing blow distance (robbing) and decreasing key dip (improving) can be done without affecting aftertouch.
- g) If you can't get even blow distance, key dip, and let off that produces even aftertouch, prioritize the aftertouch to be even. I.e. you may have to have uneven key dip if the action is worn.

Now we have the measurements for let off, blow distance, and key dip, that give this piano appropriate after touch.

Now, we can go back and set #8 (Hammer Distance), #13 (Let Off), and #14 (Key Dip) for all the keys.

### **15. Regulate hammer checking.**

That's a huge window, 5/8" +/- . It should already be done. It's better to leave them alone, especially if they are even and straight.

### **16. Regulate sharp key dip.**

Yes.

Check the wood at the back of the sharp key, near the capstan, while pressing neighbouring white keys. The black backs should rise the same as the whites.

The blacks should, when pressed, be about the thickness of a quarter above the neighbouring whites that are not depressed.

With level back checks that are in a straight line, press some white and black keys all the way down. The back checks should still be in a straight line. If not, it may be a key dip issue.

### **17. Regulate the sustain pedal.**

Yes.

There should be some small free play - 1/16" to 1/8" - before the dampers move.

### **18. Regulate dampers to lift rod.**

Should already be good.

They should all be moving at the same time, give or take. High level work may require them to move at exactly the same time. Proper function of the pedal accepts a large window of different damper timing, but it looks bad, and you can't "play" with the pedal which some high level pianists may like to do.

### **19. Regulate damper spoons.**

Should already be good. This is a large window. 1/3 to 1/2 of the hammer travel. If you have filed a lot of the felt off, reduced blow distance, and raised the capstans to take up lost motion, you may have affected the damper timing so that the dampers are always off. This of course has to be corrected.

### **20. Regulate the soft pedal.**

Probably doesn't work. If you really want it to work, remove the little block of felt stopping the rest rail from getting closer to the strings.

Regulate the rest rail so it gets closer to the strings. The let off needs to be small for this to work. Hammers at about 3/4" to the strings should produce a nice tonal change.

### **21. Regulate the bridal straps.**

Should already be done, unless they're broken or have been replaced and not regulated. Again, a large window.

Too tight and the hammers don't rest on the rail. Too loose and the jacks will get caught under the butts when you remove the action. You can tell the straps are too loose if the whippens don't move when you press the hammer rest rail all the way forward. The whippens should move when, by pressing the hammer rest rail, the hammers are 1/3 to 1/2 the distance to the strings.