

ROBERTSON & SONS

VIOLIN SHOP

INCORPORATED

Established 1971

CUSTOM C-EXTENSION MAINTENANCE MANUAL



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RVS Custom C-Extensions

Over the past 30 years, Robertson and Sons has been dedicated to designing custom made Bass Extensions for the most discriminating bass players around the world. As in the nature with all musical instruments and their component parts, they will need periodic maintenance. To help you keep your Robertson Extension in top working order, we have compiled a short list of maintenance suggestions that you or your local repair person will find handy.

Contents:

- ◆ String Length (Intonation)
- ◆ Lever Tension
- ◆ Lubrication
- ◆ Troubleshooting
- ◆ Seek Professional Help

STRING LENGTH: Intonation

The Proper placement of each lever used to stop a note along our Extensions is determined by a logarithmic mathematical calculation multiplied by the string length of your instrument. It is important that you know the string length of your instrument and keep it at that length. It is not uncommon for a bridge to be pulled a 1/4" to 3/8" out of position over time by the simple act of tuning. This is not a problem for a player without an Extension, but now that you are using levers (not unlike frets on an electric bass), maintaining a constant string length is very important.

To help you remember the string length for which your Extension has been designed, we have stamped the string length on the treble side of your Extension (photo #1). If you suspect your bridge has shifted out of position, measure between the front edge of the nut and the front edge of the bridge and make adjustments to the bridge to restore the correct string length (photo #2).

Photo #1

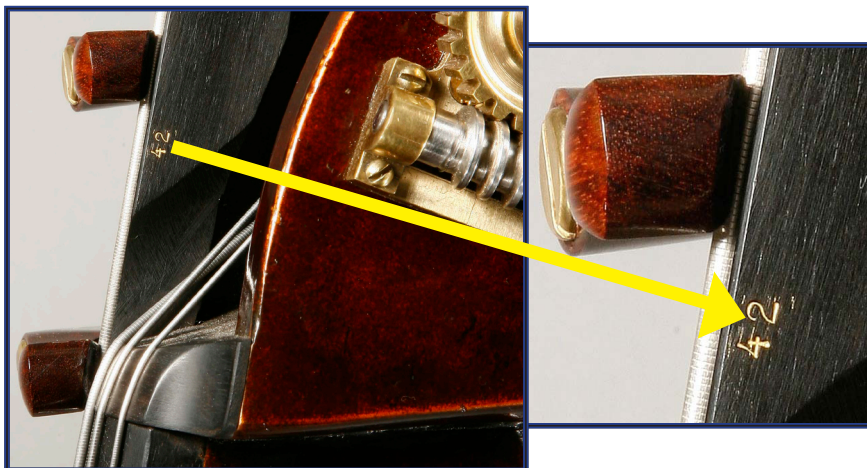


Photo #2

NOTE:

For best tuning results, we recommend that you tune your instrument with the E Lever closed. Tune your bass using harmonics or an electronic tuner as you did before your Extension.



LEVER TENSION

The amount of tension on each lever is set at the time of installation here in the shop. We adjust the tension to be not so much that the players find the levers too difficult to turn, but enough that the strong vibration of the string will not cause the lever to be pushed out of position.

We have noticed that over years of use, the tension on the levers can diminish due to the compression of the rubber and Teflon bushings under the screw (not visible to the player). This loss of tension can cause the levers to be less resistant to them being pushed out of position by the strong vibration of long sustained bowed notes.

The original tension can be easily restored by tightening the screw used to attach each lever to the brass stem mounted into the Extension.

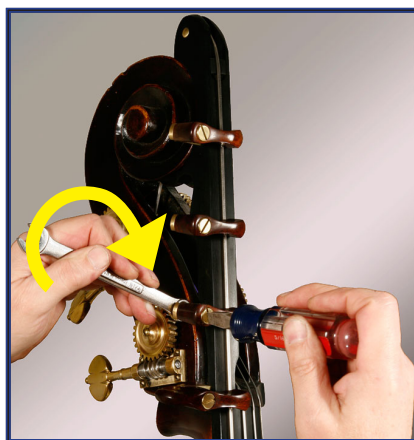
CAUTION!! It is important to first loosen the lock nut before making any adjustments to the tension screw. When wrenched tightly in place, the lock nut “locks” the screw in place and allows it to keep a constant tension on the lever.

PROPER SEQUENCE: Loosening and Tightening Lock Nut and Screw

TOOLS NEEDED: Standard screw driver and a 7/16” wrench

STEP 1 - LOOSEN LOCK NUT

Hold the screw stationary with a screw driver while turning the lock nut in a clockwise motion with a 7/16” wrench. You will feel the lock nut loosen and begin to turn freely.



STEP 2 - ADJUSTING TENSION SCREW

At this point you can turn the tensioning screw either clockwise to increase tension or counterclockwise to decrease the amount of tension on the lever.

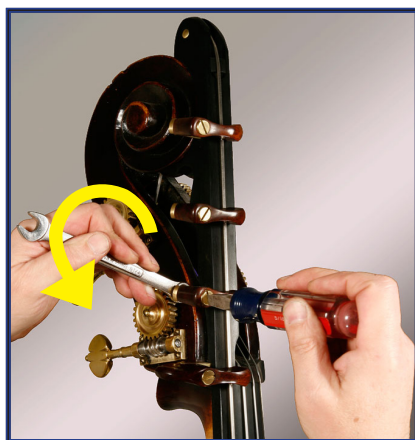
◆ We suggest moving the screw only a 1/8" of a turn at a time while making tensioning adjustments.



STEP 3 - TIGHTENING LOCK NUT

Hold the screw stationary in its new position while you use the wrench to firmly tighten the lock nut back in place. Check the amount of tension on the lever. If you feel that you need more or less tension on the lever, repeat steps 1-3.

When you feel you have restored the proper amount of tension to the lever, double check to make sure that you have tightened the lock nut firmly enough. Twist the lever on and off the string while watching to see that the screw does not turn with the motion of the lever. This insures that the screw is maintaining a constant pressure on the lever. If the screw moves with the motion of the lever it means that you did not tighten the lock nut firmly enough. If so, redo the last step using additional force to tighten the lock nut.



Recheck the screw while twisting the lever to insure it has been locked in place. The screw must be locked in place to function properly.

We have also found that a small amount of powdered bow rosin applied to the string at the point of contact with the lever creates an additional friction helpful in maintaining lever position.

LUBRICATION

Under the screw head of each lever we have installed a rubber washer and Teflon bushing. The screw head, washer, and bushing all set down into a mortise we mill into each lever (see photo at right).



At the time of installation we coat the inside of the lever mortise with paraffin to help the lever turn smoothly (see photo above). Even though this initial lubrication of wax will last for many years, you may like to reapply more paraffin at the time of general maintenance.

To do so you must remove the lever from the brass stem to which it is attached. Once removed, pull the screw and bushings out of the mortise (see photo above). This will expose the mortise in the lever, making it possible to reapply wax.

If you do decide to remove the levers from the Extension, we suggest doing so one lever at a time. When making your Extension, we fit each lever individually to work correctly at it's assigned position. **Please do not change lever positions.**

TROUBLESHOOTING

Problem: E Lever fails to clear string during closing.

- 1) Check your string height. String heights on a bass can vary considerably due to climate changes.
- 2) Our Extension Levers are designed and play tested before they go out of the shop to close properly at what is considered a normal string height. To check your string height, measure up from the top of your fingerboard closest to the bridge to the bottom of the C string with the E Lever closed. You should get a measurement of about 9mm. If it is higher than this, you should lower your bridge height using the adjusters in your bridge. Remember to lower the adjusters in both legs equally to keep your strings centered over the fingerboard.

Problem: C string rattles against fingerboard.

- 1) Check your string height. Your string height may have dropped below normal. Raise your string height up to 9-10mm with your bridge adjusters.
- 2) If the rattle occurs when using a particular lever, check to make sure the lever is closing or stays closed tightly. Lack of proper lever tension can cause a lever to back off the string when bowed, creating a rattle.

Problem: Lever or levers play notes sharp or flat.

- 1) Check your string length. Your bridge may have moved out of position. Make adjustments to your bridge if it has.
- 2) Look at your closed levers head on to see if they stop in line with the brass stem on which they are mounted. If the levers close ahead or behind the mounting stems, they will be **slightly** out of tune.
- 3) If a lever closes behind what appears to be an inline position with the brass stem to which it is attached, try two things:

TROUBLESHOOTING, cont'd

◆ First, try pulling a little harder on the lever when you close it. Most times a little firmer tug on the lever is all that is needed. A little practice closing the levers will help you know how firmly you need to pull on them to pull them into position.

◆ Second, try adjusting the lever tension. The amount of tension on a lever can affect, to a small degree, where your lever stops. Less tension will allow your lever to travel farther on the string; more tension will cause your lever to stop sooner.

◆ Finally, after adjusting the tension and the lever still closes ahead of the note, seek professional advice. Installing a new piece of leather to the lever will correct this problem.

SEEK PROFESSIONAL HELP

If you find that you are unable to correct a problem you may be experiencing with the information presented here, please contact us at 1-800-A-VIOLIN.

Some problems that occur with your Extension may take a skilled repair person to correct. If your Extension has been hit or damaged, you will need an experienced repair person to correct the problem.

Name _____

Bass _____

String Length _____ *Levers* _____

Date _____