



The Steinberger KB Tremolo

- *How to fix it*
- *How to set it up*

1. Fixing the Steinberger KB Trem: The Posts



This is the documentation of my (successful) attempt to find a fix the tremolo system, which obviously is faulty by design, caused by weak pedestals for the hinge posts.

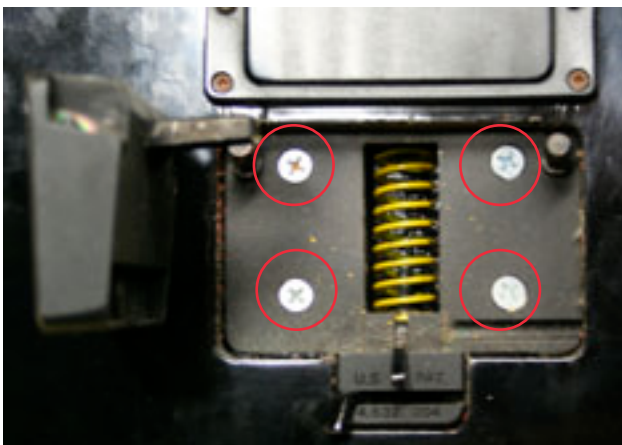
For any questions about this document and its content, please use the contact information on the last page.

1.1 Dismantling the KB-X Tremolo System



This tremolo system can be found on several Gibson, Epiphone and Hohner guitars built in the '80s. I bought such a guitar (an '88 Gibson U2), because it looked cool **and** had a Steinberger tremolo (I own several Steinbergers with a TT, so I thought it must be good). As it turned out, this tremolo does not have the quality I expected from the name "Steinberger".

This is the way it looks like, once the hinge posts are bent. As a result the whole systems comes closer to the neck (which also shortens the string length).



In order to dismantle the system, I first removed the strings and the roller saddles (the latter is not a must, you can leave them where they are).

The spring tension of the system must be reduced **completely**, using the corresponding lever on the back (rotating the bolt counter-clockwise). Once there is no more tension on the system, you can easily pull the moving part of the tremolo out.

CAUTION:
No more tension means **no more tension**. If there is still tension on the spring, pulling the trem top out can cause unexpected parts movement or the spring to jump out. To avoid **potential injury and/or damage** to your gear, make sure the spring tension adjuster is completely turned down.

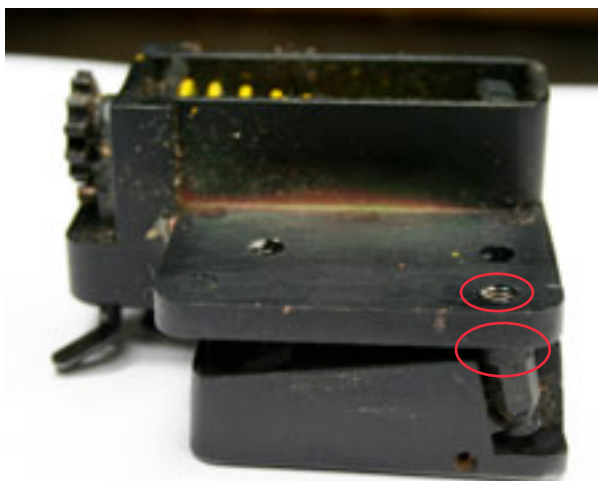
If you are not familiar with the working principles of spring tension adjustment on the KB trem, first read and understand the **Setup Instructions**, starting on page 7 of this document.



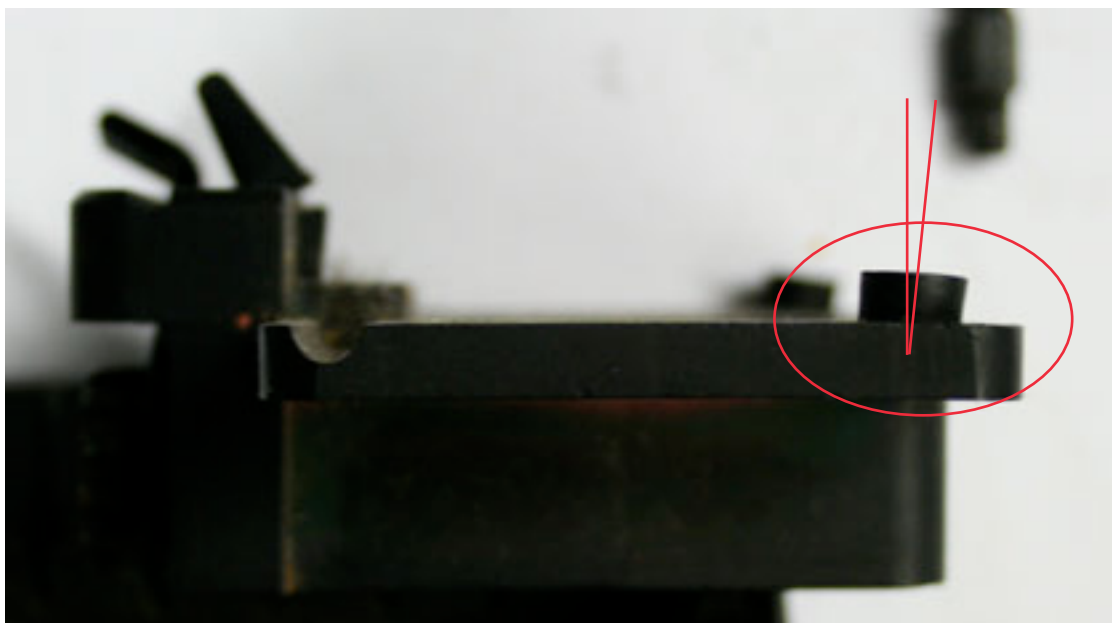
Move it slightly towards the spring lever on the back, and then pull upwards.

Now the four screws are revealed, which fix the whole system on the guitar. Remove them, and then pull the system out of the guitar.

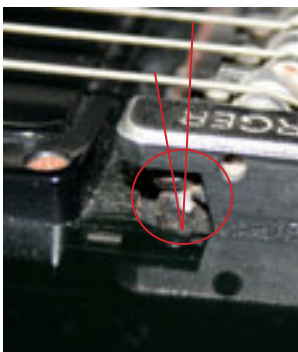
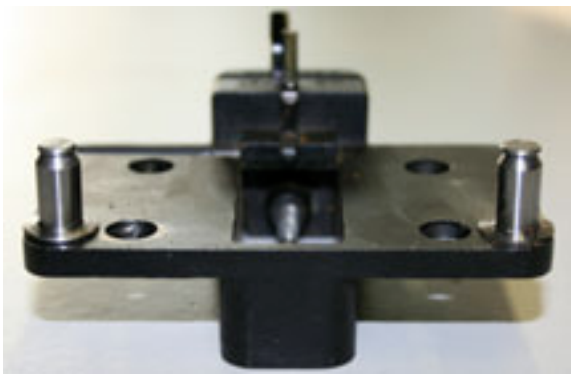
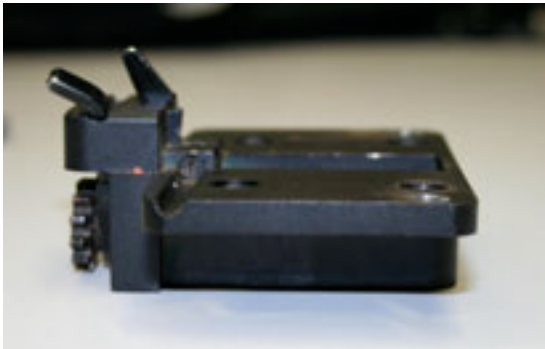
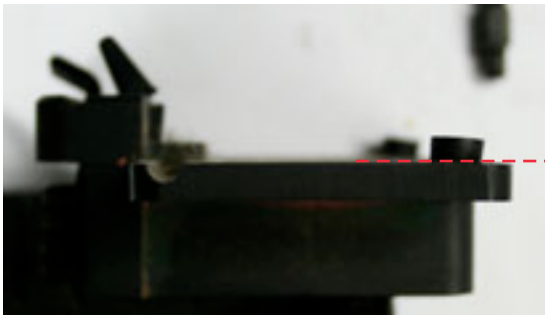
1.2 The problem...



After removing the base plate the problem is clearly visible: In most cases not the two posts are bent, but the short pedestals on the base plate. This could also be caused by the posts, because their threaded ends are too short, so they are only held in the upper part of the pedestal. They don't reach the lower end of the thread. Since the threaded ends of the posts were too short, all the tension of the strings was held by the two pedestals only.



1.3 The solution...



Well, the solution is simple: throw away the weak parts and replace them by better ones :-)

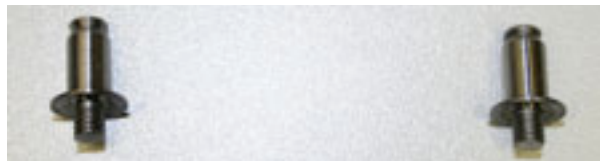
In short words, cut off the weak (bent) pedestals. There's more of the thread within the base plate, than there is in the pedestals.

CAUTION:

Metal working experience and suitable tools are required for this step! If you can't do it without hurting yourself or spoiling the tremolo base plate, better get this done by a professional metal worker

Make sure the surface is perfectly even afterwards. Grind or polish it when necessary.

The weak combination [post + pedestal] is now replaced by a newly designed post, which we made from alloyed steel.



Use padded pliers for screwing the new steel posts in, in order to avoid scratches. **Don't try to screw them in by hand, since the "feet" on the steel posts might have sharp edges.**

You might want to add some glue or thread locking compound when screwing the new posts in, in order to prevent them from getting loose during usage.

A side-by-side comparison of the result looks great:

Before... and after.

The KB Trem is now completely back to work. It moves up- and downwards again. Before it was only able to bend down.

This solution is proved and tested on many guitars worldwide and works for all the KB Tremos installed on various Gibsons, Epiphones and Hohners.

NOTE: These posts will **not** work with a Steinberger R-Trem, because the posts have to be shorter (no pedestal on this trem). However, I also have the shorter R-Trem version of these posts available.

2. Fixing the Steinberger KB Trem: The Spring Tension Adjuster

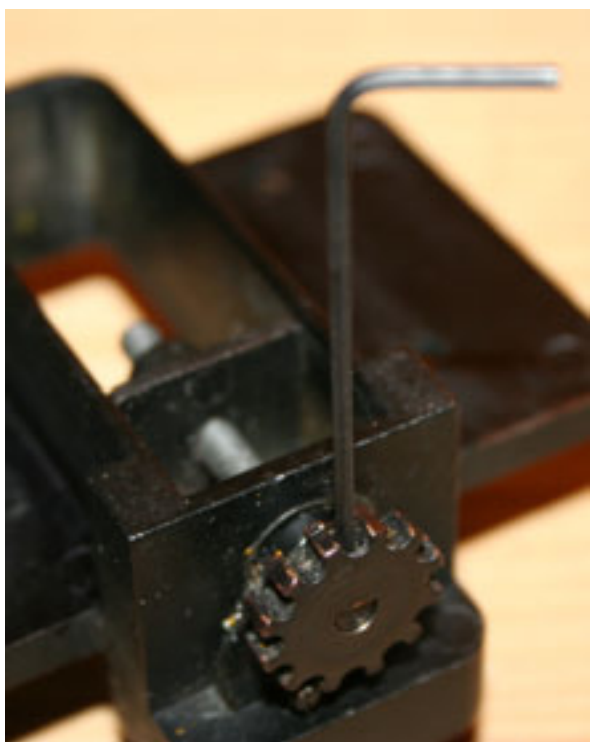


Another weak point is the spring tension adjuster. This is a plate sitting on a threaded rod, compressing the spring in the trem. The compression must be adjustable to set a perfect balance between the string tension (pulling the trem up) and the force of the spring (pushing the trem down). A perfectly balanced setup makes sure that the trem has exactly the same position in locked and unlocked state.

The material of the original spring tension adjuster obviously doesn't withstand the forces, I've seen several tremos with the adjuster plate moving more or less freely up and down the rod. In this case exchanging the complete tension adjuster group (plate and rod) is the only solution to get the trem back to work.

Please note that the individual parts of my tension adjuster and the original parts are not interchangeable (the left-handed thread is different). You only can exchange the complete group. Also note, that – with a left-handed thread – you'll have to turn the threaded rod counter-clockwise to screw it into the plate.

2.1 Removing the old spring tension adjuster



The spring tension adjuster is moved by a cog, mounted on the end of the rod. In order to remove the defective parts, you'll have to remove this cog first.

The cog is fixed with a little grub screw, sitting between the teeth of the cog. It's a little bit hard to see, but it's definitely there, also on your trem. Use an 1.5 mm Allen key to loosen this screw. It's not necessary to remove it completely.

Carefully pull the cog off the rod.

Behind the cog you will find some washers (one or more thin plastic washers and one made of rubber). Take them off, too.

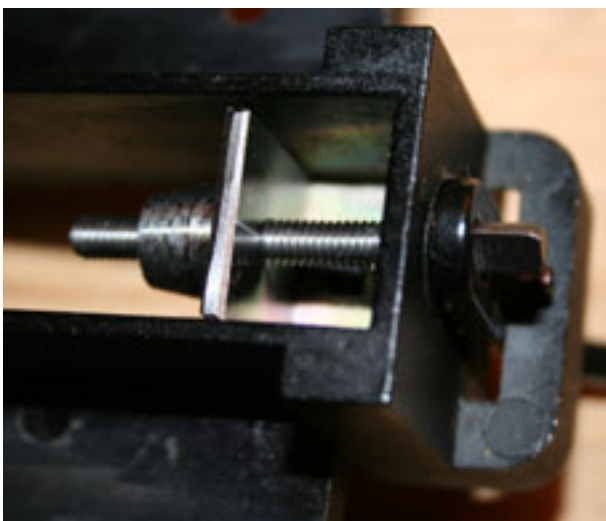


There should be another thin washer between the lever and the trem base. You can leave it where it is, just make sure it's correctly placed when installing the new spring tension adjuster.



Now remove the old rod and plate.

2.2 Installing the new spring tension adjuster



Installation is pretty simple: repeat the previous steps in reverse order.

When putting the new rod into the trem base, make sure you push it perfectly straight through the hole. There is a very small tolerance between hole and rod diameter, so you won't get it through the hole when tilt. Also make sure that the washer between the lever and the trem base is in the correct position, allowing the rod to go through the hole, the washer, and the lever opening.



Reinstall the washers and the cog. Tighten the grub screw again to fix the cog on the rod.

Hold the lever away from the cog and make sure you can freely turn the cog and move the plate. Also make sure that the lever does not rotate the cog when in upper position (in this case the cog sits too tight on the rod). The plate should be in the end position (near the cog) for reinstalling the spring and the following reassembly of the whole trem.



Done :-)

3. Tuning Screws



Since there seem to be some KB tremos out there, whose owners have lost all the tuning screws (and I can't be sure I won't lose mine), we have made a couple of them, too (stainless steel). So if you lost your screws, hurry up and ask, as long as we have some of them left ;-)

Also temporarily available: right now I've got some sets of NOS original screws (black), too.

4. Setting up a Steinberger KB Trem (spring tension adjustment)

After I've published my repair solution for the KB trem, I've been asked many times about how this trem is meant to work. Since there is no official instruction sheet I'm aware of, many users don't know how to properly set up this trem. Well, without ever having seen a dismantled Steinberger KB trem, the mechanism to adjust the spring tension is not really self-explaining.

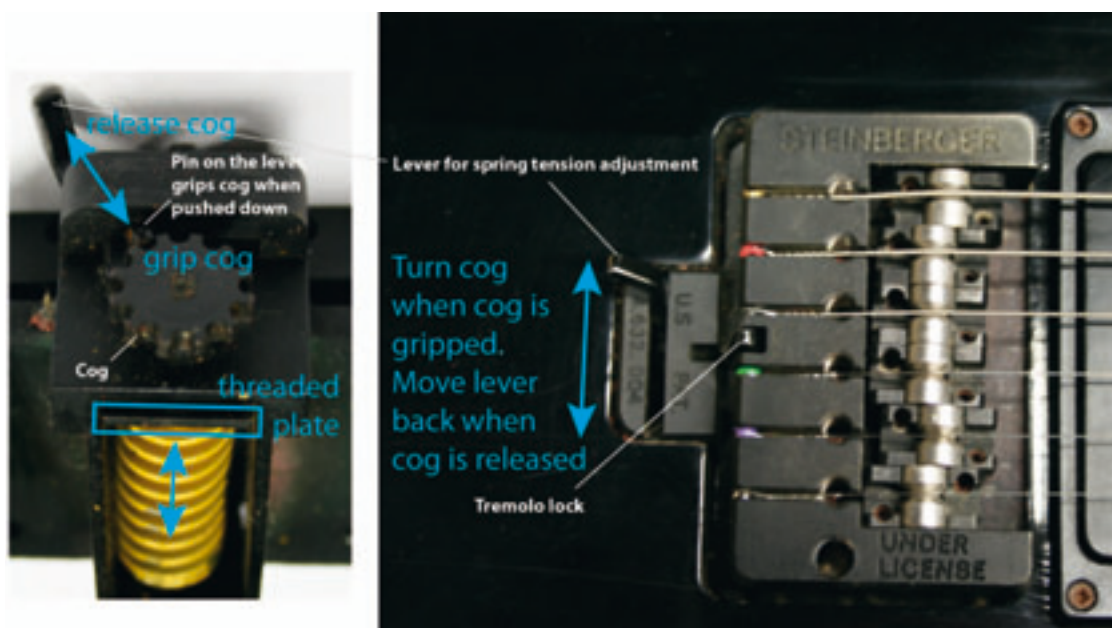
The following pictures show how it works, and how you can adjust the tension properly. However, before doing this adjustment

- **always lock** the trem (using the locking latch) and
- tune the guitar to pitch (using the fine tuning screws, not shown in the following pictures)

After the guitar is tuned, unlock the trem. Most likely it will jump a little bit up or down and the guitar will be out of tune now, if the spring tension is not set correctly. Don't worry, we're going to fix that without re-tuning the guitar :-)

By adjusting the spring tension now, you set the unlocked trem to take exactly the same position as in a locked position.

4.1 How the mechanism works



On the back, the trem has a lever for adjusting the spring tension. This lever can be

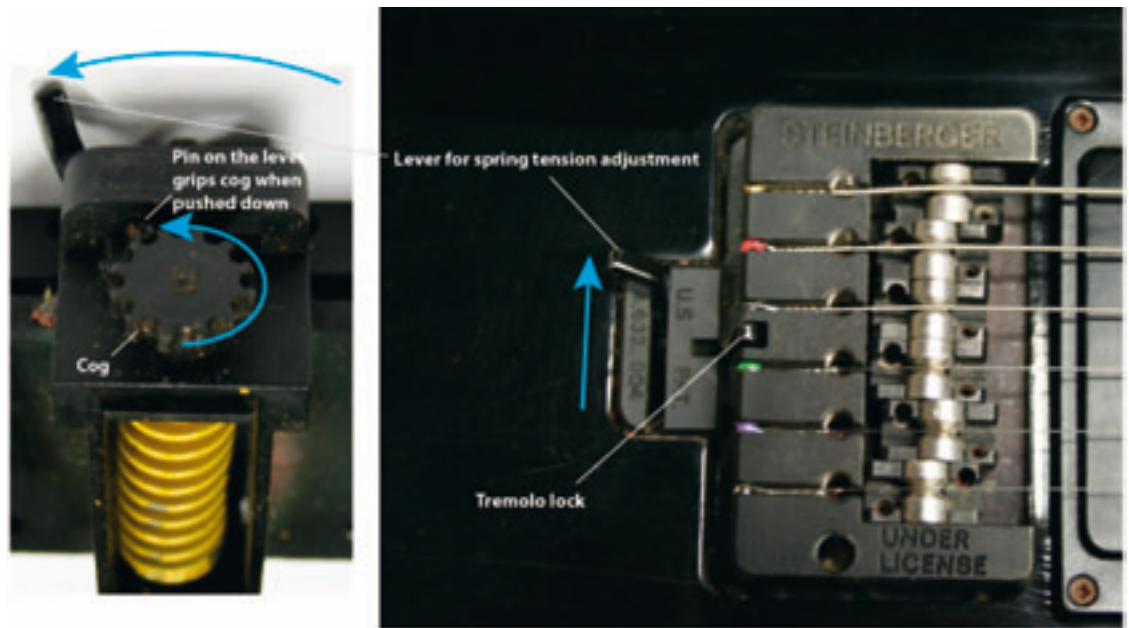
- lifted up and pushed down
- moved horizontally

When lifted up, the lever can be moved horizontally without any effect. The little pin does not grip the cog. When pushed down, the pin on the lever grips and rotates the cog.

By rotating the cog, a threaded plate on the bolt moves forth or back, thus compressing or relieving the spring.

- If the tuning of the guitar is **sharp** after unlocking the trem, the **spring tension is too high**. Decrease it as described on the following page.
- If the tuning of the guitar is **flat** after unlocking the trem, the **spring tension is too low**. Increase it as described on the following page.

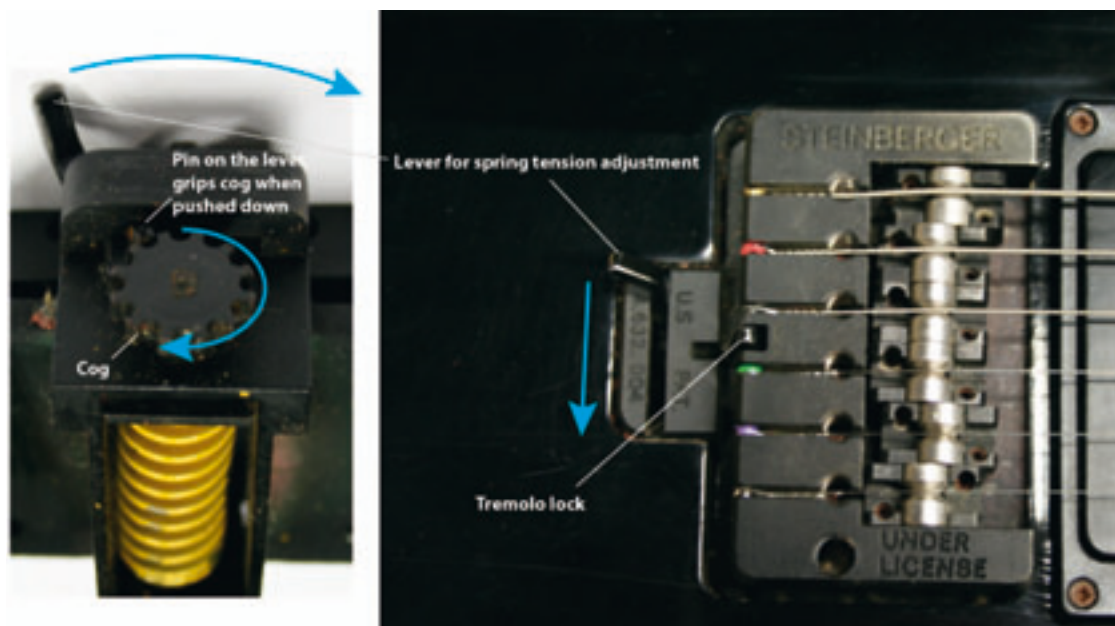
4.2 Decreasing the spring tension



In order to **decrease** the spring tension (tuning is sharp)

- lift the lever up and move it in direction of the "UNDER LICENSE" engraving on the bridge
- push the lever down (gripping the cog now) and
- move the lever towards the "STEINBERGER" engraving on the bridge
- Seen from the back, the cog is moved counter-clockwise, and the threaded plate moves towards the cog
- repeat this step as often as necessary, until the trem has moved up to the same position as when locked

4.3 Increasing the spring tension



In order to **increase** the spring tension (tuning is flat)

- lift the lever up and move it in direction of the “STEINBERGER” engraving on the bridge
- push the lever down (gripping the cog now) and
- move the lever towards the “UNDER LICENSE” engraving on the bridge
- seen from the back, the cog is moved clockwise, and the threaded plate moves away from the cog, compressing the spring
- repeat this step as often as necessary, until the trem has moved down to the same position as when locked

In both cases, the guitar should be in perfect tune in the end, either in locked or in unlocked state.

If you want to order any of the parts mentioned before (steel posts, spring tension adjuster, tuning screws) to fix your guitar, or if you have questions or comments, please write to:

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