

True-Tension Stringing Machines

<http://www.truetension.net>

PROCEDURE TO AFFORDABLE CHECK CALIBRATION OF THE TENSIONING UNIT: (Updated 12/15/07)

This method of checking the calibration of your TTSM Tensioning Assembly is an affordable alternative to using very expensive electronic digital pull scales and will give you consistent results if you follow the following steps:

1. Have access to an accurate "Calibrated" Straight Pull Scale that can be used both vertically and/or horizontally with a 100 pound capacity. This procedure is based upon using an affordable Hanson Heavy-Duty Spring Balance Scale, Model 8910, or equivalent, with an adjustment screw for zero set. This scale is available online for approximately \$50.
2. Use weights of a known calibrated amount to check and adjust the calibration of the calibrating scale that you are going to use. Make an error correction chart and use that chart when checking calibration. Attach a two foot long piece of strong synthetic Tennis String to the moving end of the calibrating scale.
3. Many True-Tension Stringing Machines owners are using machines that are well over 15 to 25 plus years old without having been properly lubricated in that amount of time. The Pawl Block Assembly can cause Tension Holding problems when the original grease dries out after many years leaving a sticky paste that inhibits the free movement of the Pawls that hold and release the Brake Assemblies. The Pawls can be easily lubricated with a very small drop of sewing machine oil or similar fine lubricating oil which will melt out the old grease and keep the Pawls operating properly. As part of maintaining your machine the Pawls should have a very small drop of oil where they enter the Pawl Block a couple of times a year. I prefer Tri-Flow Lubricant with Teflon® available in small 2 oz and 6 oz Drip Bottles that come with a small tube that can apply the lubrication directly into confined areas. Shake the bottle well before using! Do not use a spray can as the over spray will create slippage problems!

CAUTION: *Do not put more than a very small drop of oil on each Pawl to Pawl Block contact point as the excess oil will work it's way down to the Brake Assemblies Rubber Pads and onto the Control Wheel and cause slippage.*

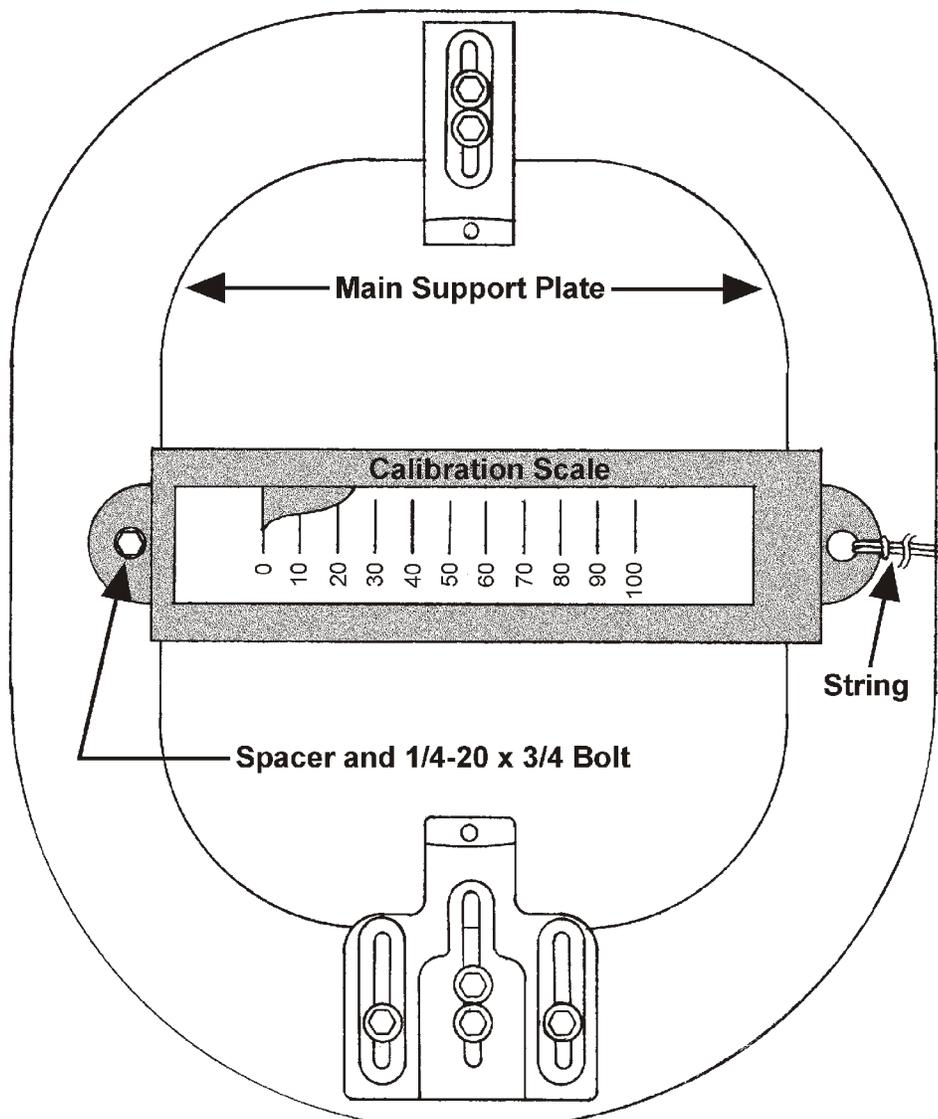
4. Visually inspect the Brake Assemblies to confirm that the Brake Assembly Synthetic Rubber Pads are not deteriorated, worn out, or missing. Clean the Tensioning Assembly Brake Pads, the Control Wheel Serrations, and the Pulling Jaws of all oil, wax, or other contaminants.
5. Remove both Side Supports from the Turret Assembly Main Support Plate. Mount the fixed end of the Calibrated Scale onto the Main Support Plate as shown below using the existing 1/4-20x3/4 Bolt and Spacer that was used to mount one Side Support. This bolt should be fully threaded in but can be finger tight.
6. Lock the Turret Assembly Main Support Plate sideways with the attached string of the Calibrating Scale closest to the Tensioning Assembly Pulling Jaws.
7. Secure the Brakes in the unlocked position using the Tabs of the Pawl Block Brake Assemblies.
8. Move the ID# 90, P/N 20000 Pulling Clamp Plate of the Tensioning Assembly to within 1/4" of the Turret Assembly Main Support Plate using the Control Wheel Tensioning Crank Handle.
9. Set the pre-stretch to 15 pounds and set the main tension adjustment to 40 pounds.
10. Guide the attached string from the Calibrating Scale through the Pulling Jaws of the Tensioning Assembly and pull tension using the Control Wheel Tensioning Crank Handle.
11. When pulling tension you should hear a click at around 40 pounds as shown on the Calibrating Scale and then you should hear another click and a Brake Assembly should stop all movement at 55 pounds. Hold that position with the Control Wheel Tensioning Crank Handle and note the reading indicated on the Calibrated Scale. That is the pre-stretched string tension. Then slowly release tension until the 2nd brake locks at 40 pounds. That is the actual True Tension. Record any variations between the Calibrated Scale and True-Tension Indicator
12. Duplicate the calibration check increasing the amount of main tension by 5 pounds each time up through 60 pounds. Do the same checks again using a pre-stretch of 20 pounds recording all Indicated and Calibrated Scale readings. The Indicated Tension on the True-Tension Main Scale Indicator should be within ½ pound of that shown on the Calibrated

Scale from 40 through 60 pounds. Any variations should be recorded on an error correction chart and that chart should be taken into account when stringing racquets.

13. While pulling tension check that the Brake Assemblies are releasing in the proper sequence and that they are not hanging up on anything. Every part of the Tension Assembly should be working smoothly.

14. You are now done checking the calibration of the tensioning assembly. If you find any problems call or Email us for further instructions. The ID #12, P/N 20407, Main Scale Indicator has a very limited amount of adjustment travel. The ID #71, P/N 20403, Main Spring Calibrator can only be adjusted using a one of a kind special tool in our shop. You can get into trouble fast by changing the Pawl Block adjustments!

Note: For those wanting electronic digital accuracy a Pelouze Model 7710 Electronic Digital Scale will provide Digital Accuracy not possible when using the Hanson Heavy-Duty Spring Balance Scale, Model No. 8910, or equivalent. The only negative is that the Pelouze Scale costs up to three times the cost of the Hanson Spring Balance Scale. Email me as to how to mount the Pelouze Model 7710 Electronic Digital Scale.



**Calibration Scale shown mounted on the Turret Assembly
Main Support Plate to Check Tensioning Assembly Calibration**