

Instructions

For the 1900 series tuner
stock

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- Assemble tuner to the receiver
- Mount the barreled action into the stock.
- Tuning the rifle

Preface



The tuner assembly in this stock should be handled with care until it is fully assembled. After full assembly into the stock the tuner is very robust and needs no more care than given to any fine rifle.

The tuner is designed to modify the intrinsic forces of the fired round, usually referred to as vibration, to assist in bringing the ammunition and the barrel into harmonic balance.

It will be important to establish the “zero” tune point, discussed later in this instruction, to begin a successful tuning session.

If you get stuck on the assembly or tuning please feel free to call Jeff at 231.735.1770 or e-mail me at jeff@mwerksllc.com.

Disclaimer

Tuners of any variety will not cause improvement in worn or defective barrels, low quality ammunition or other mechanical problems.

Testing from a benchrest setup will not necessarily represent the accuracy potential of your rifle. This is a prone style/ 3P stock and will perform at its peak when fired from those positions. Front rest plates and rear bag followers are available for those who wish to test from the bench but your results will vary.

Adjusting the tuner - cont

Once a tuning point has been found a variety of ammunition should perform reasonably well but only a click or two could make a difference between brands or lots.

There have been several tests that found a difference in tuning between 50 yards and 100 yards with particular brands of ammunition.

The illustration is of an actual tune change showing what might be seen. In my experience acceptable groups usually are found within $\frac{1}{4}$ turn (plus or minus a couple of clicks) from the zero point.



Tune 1

Second
tune

3rd and
final tune

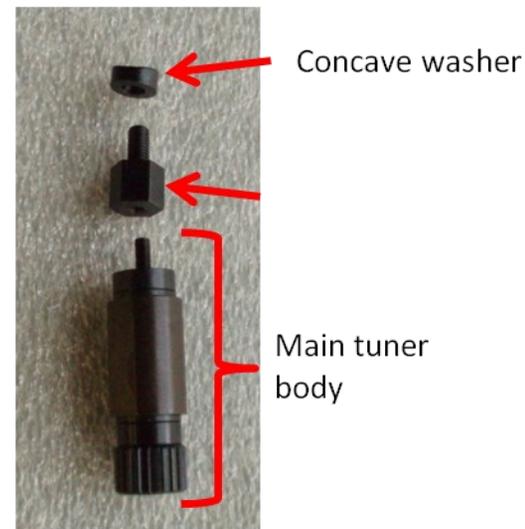
The tuner

As you unpack the stock you will find the tuner assembly inserted into the stock in the location it will be used held in by the side lock screw.



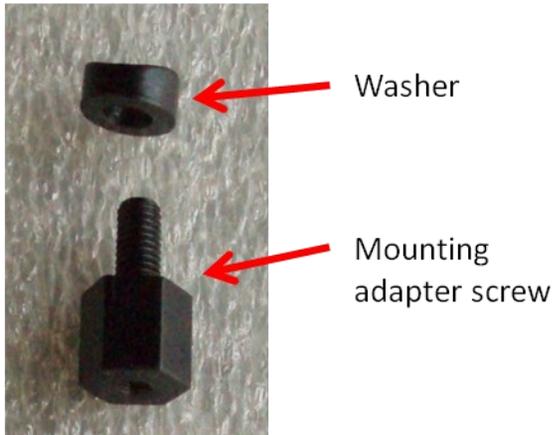
To remove the tuner assembly

Loosen the side lock screw by $\frac{1}{8}$ th turn and lift the tuner assembly up through the receiver inlet.



Tuner assembly

Remove the plastic cap that holds the washer on the tuner assembly and unthread the mounting adapter screw from the main body.



Making sure to place the washer on the receiver with the concave side toward the receiver and thread the adaptor screw into the receiver and torque to approximately 25 inch pounds. Varying the torque of the mounting screw will not affect the performance.

Assemble barreled action to the stock – the tricky part continued

With the tuner being free to turn at 30 inch pounds of torque on the top cap finish the tightening sequence to 45 inch pounds.

Tighten the side lock and you are ready to test fire.

Adjusting the tuner

The tuner assembly incorporates opposing elastomers at opposite ends of the cylinder and are able to be preloaded by rotating the tuner knob. The tuner uses a “right hand” thread and when looking at the bottom of the stock, and directly at the knob, a clockwise direction increases preload. Turning in the counter clockwise direction reduces preload.

The tuner side lock must be tightened for the tuner to function correctly. Although it is possible to turn the tuner knob with the side lock tightened it will not provide the correct result.

To make an adjustment you must loosen the side lock loose, (1/8 th turn so you don't lose the flat orientation) make a single click adjustment and retighten the side lock.

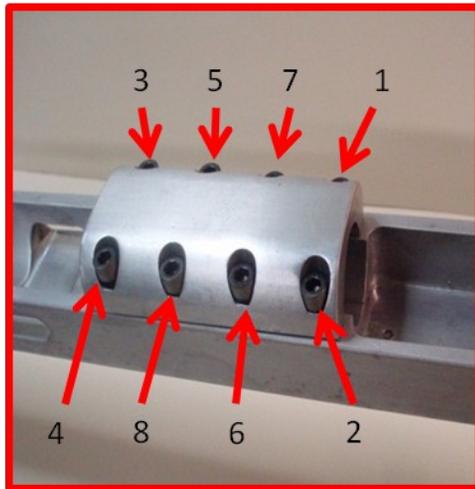
I recommend single click adjustments from the zero position until you see a change in the grouping of the fired rounds.

Assemble barreled action to the stock – the tricky part

With barreled action in place, including the top cap, bring all the screws to finger tight with the short leg of the Allen wrench.

Loosen the side lock screw 1/8 of a turn (just so there isn't any pressure on the tuner).

The torque for the top cap will begin at 30 inch pounds for the first pass and finish at 45 inch pounds



The torque sequence is shown in the illustration. After the first pass at 30 inch pounds check the tuner knob to make sure it can turn freely.

If the tuner does not turn freely loosen the cap screws, pull up on the barrel to free the action, and shift the action and retighten the screw to 30 inch pounds and recheck the tuner.

Tuner assembly - cont

With the washer and adaptor screw firmly in place thread the main body into the adaptor.



cylinder

While threading the main body to the adaptor move the cylinder back and forth just until there is no movement. Zero clearance. This will be the zero point for the tuning process.

Installed tuner



Note the orientation of the knob mark for the zero tune reference

Assemble barreled action to the stock

With the barrel sleeve in place in the stock saddle
You will lower the barreled action straight down into the stock making sure the flat on the cylinder is oriented to the side lock screw. The barreled action should be gently lowered until the barrel is firmly located in the barrel saddle.

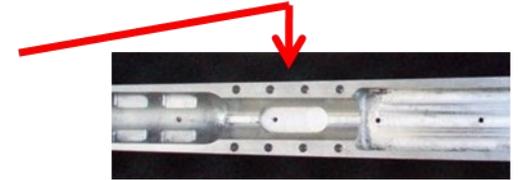


With the barrel located in the saddle tighten the side lock lightly until you are able to put the saddle top cap, including the sleeve, in place and start the 8 screws. Bring each of the 8 screws down to touch and check the gap between the cap and the stock to make sure it is reasonably even.

Barrel Saddle and Sleeves

Barrel saddle

The barrel saddle is a 1 inch diameter cut into the stock to accept the barrel sleeve.



The barrel saddle top cap

The barrel saddle top cap mates with the stock saddle and clamps the barrel in place. With the sleeves and barrel in place there will be a gap remaining between the cap and the stock when the screws have the correct torque.



Sleeves

The sleeves are made specifically for the O.D. of the barrel to be used.



Barrel sleeves should only be used for the barrel they were intended unless another barrel diameter is precisely the same.