

Rx Arms Solutions - 6 Position Recoil Tube Installation Instructions

Note: Majority of instructions are taken from @StrangerDanger on the [Benelli USA Forum](#) who did an excellent job explaining the process. I have modified it slightly for the Rx Arms 6 position tube. More importantly, review #8, depth of 6 position tube into the receiver.

Introduction

There is a lot of misinformation out there regarding disassembly of the Benelli M4's Recoil Tube. Benelli USA will tell you that you will destroy the aluminum receiver if you attempt to remove the Recoil Tube. This is false. The Recoil Tube is installed with a green thread locker at the factory. Heat is mandatory to break down the thread locker's hold or you will damage the fine threaded aluminum receiver.

I would recommend the following steps be taken before you apply heat to your Benelli M4;

1. If you have tritium night sights in your rear sight, remove the aperture.
2. I recommend removing springs from your receiver and existing Recoil Tube. The application of extensive heat can damage springs.
3. Degrease your work area before applying heat to reduce smoke/fire hazard.

Source the required tools for the job;

- a. Vice
- b. Heatgun (preferably can heat to 600F), or MAPP Torch.
- c. 27mm Box Wrench
- d. 19mm Box Wrench
- e. Magna Tip Weaver Clamp Screw, 080-430-625WB
- f. Punch/Pin (allen keys can also work)
- g. Loctite Primer 7471
- h. Loctite Red 271
- i. Snap Ring Pliers
- j. Wire Brush

k. Oil/Grease

l. Solvent

Some of these items aren't mandatory to have, but you'll have a much harder time doing the install without. I found the Magna Bit Weaver Clamp Screw bit works extremely well for removing the Stock Retaining Screw.

Step by step disassembly process

1. Clear the weapon of ammunition and make it safe



First off, ensure that your Benelli M4 is unloaded. Remove all ammunition from the weapon and remove it from your work area.

2. Disassemble the weapon

Remove the barrel, bolt carrier group, trigger group ,buttstock, and pistol grip. If you can easily remove the magazine tube, do so.



3. Remove the internals from the Recoil Tube

3a. Use a pair of snap ring pliers to remove the Stock Retaining Ring at the bottom of the Recoil Tube.





3b. Place a punch through one of the drainage holes to keep the spring from ejecting when you remove the Stock Retaining Screw.



3c. Unscrew the spring retainer with the Magna bit Weaver Clamp Screw, 080-430-625WB bit.







You can see in this photo how the spring has partially ejected out of the Recoil Tube. This is due to the punch being in place. It is much more manageable this way.

3d. Contain the Recoil Spring into the palm of your hand as the punch is removed.



You can see in this photograph how long the Recoil Spring is. It's about twice the length of the Recoil Tube. The contents are under quite a bit of tension, so be careful to contain the spring when removing the punch. Expect the entire assembly to be filthy.

3e. Tip the receiver back to allow the Recoil Spring Plunger to slide out of the Recoil Tube.



4. Surface Preparation

I recommend you use a solvent to flush away all debris and oil from the Receiver and Recoil Tube at this time. I have a five-gallon bucket filled with Mineral Spirits to act as a dunk tank. I poured three gallons of odorless Mineral Spirits into the bucket. A simple plastic lid seals the content. Debris settles to the bottom. I haven't noticed any evaporation of the chemicals in the year I have had it assembled.

You can also use a spray type solvent such as BreakFree Powder Blast, Gunscrubber, or brake clean which evaporates quickly.

This will reduce the chance of smoke and/or fire when heating your Receiver/Recoil Tube.



5. Recoil Tube's Lock-nut Removal

To remove the Recoil Tube, you must heat the Recoil Tube's lock-nut with a heat-gun for approximately 30 minutes or more (depending on the heat setting) or until you start to see smoke from the loctite turning into liquid and burning.. A MAPP torch would also work, and may be faster. After doing around two dozen of these Recoil Tubes, I would say the MAPP torch is the preferred method. Benelli coats the threads with a green thread-locker compound. Put the Receiver in a vice. I found the best place to clamp to is below the rear sight and upside down. You do not want to crush the Receiver with the vice. Apply just enough tension to hold the Receiver in place. Make sure you apply some padding between your Receiver and the vice. Preferably something non-flammable. Balsa wood blocks work well.

The lock nut is a 27mm box wrench. The nut is a common right-hand thread. *"Rightie Tightie, leftie loosey."* It is best to use a closed box wrench to reduce the chance of slipping and to apply the torque more evenly around the circumference of the lock-nut. Just slip it over the end of the Recoil Tube and seat it over the lock nut. You do not want to apply a lot of torque to the Receiver. You want the heat to break the thread-locker's hold. I never used more than one arm's strength to apply torque with. Once it is heated sufficiently, the nut will begin to turn slowly. Continue heating until the lock-nut is completely removed and slides off the end of the Recoil Tube.

e









6. Removal of the OEM Recoil Tube

Continue to apply heat to the Recoil tube's threaded area. Use an open ended 19mm box wrench (or a crescent wrench can also work) on the flat spots of the Recoil Tube to apply torque.

The Recoil Tube is also common right-hand thread. This may take another 30 minutes with a heat-gun (depending on your heat gun capabilities) to break the thread-locker compound's hold. The fit of the wrench on the flats of the Recoil Tube is not exactly the best. You will mar it up in the process if you try to gorilla your way through it. Let the heat do its job.







7. Clean up and surface prep

Once the Recoil Tube unscrews, clean up the threads of the Receiver with acetone or another solvent. A wire-brush will help. I recommend rinsing the Receiver and the Recoil Tube in a solvent to make sure all surface debris and oil has been removed. I recommend using a wire brush to clean up the threads. Continue flushing the mating areas with solvent to make sure all of the old thread locker compound is washed away. If you wish, continuing to heat the left over thread locker until it liquifies can make cleaning it up easier.





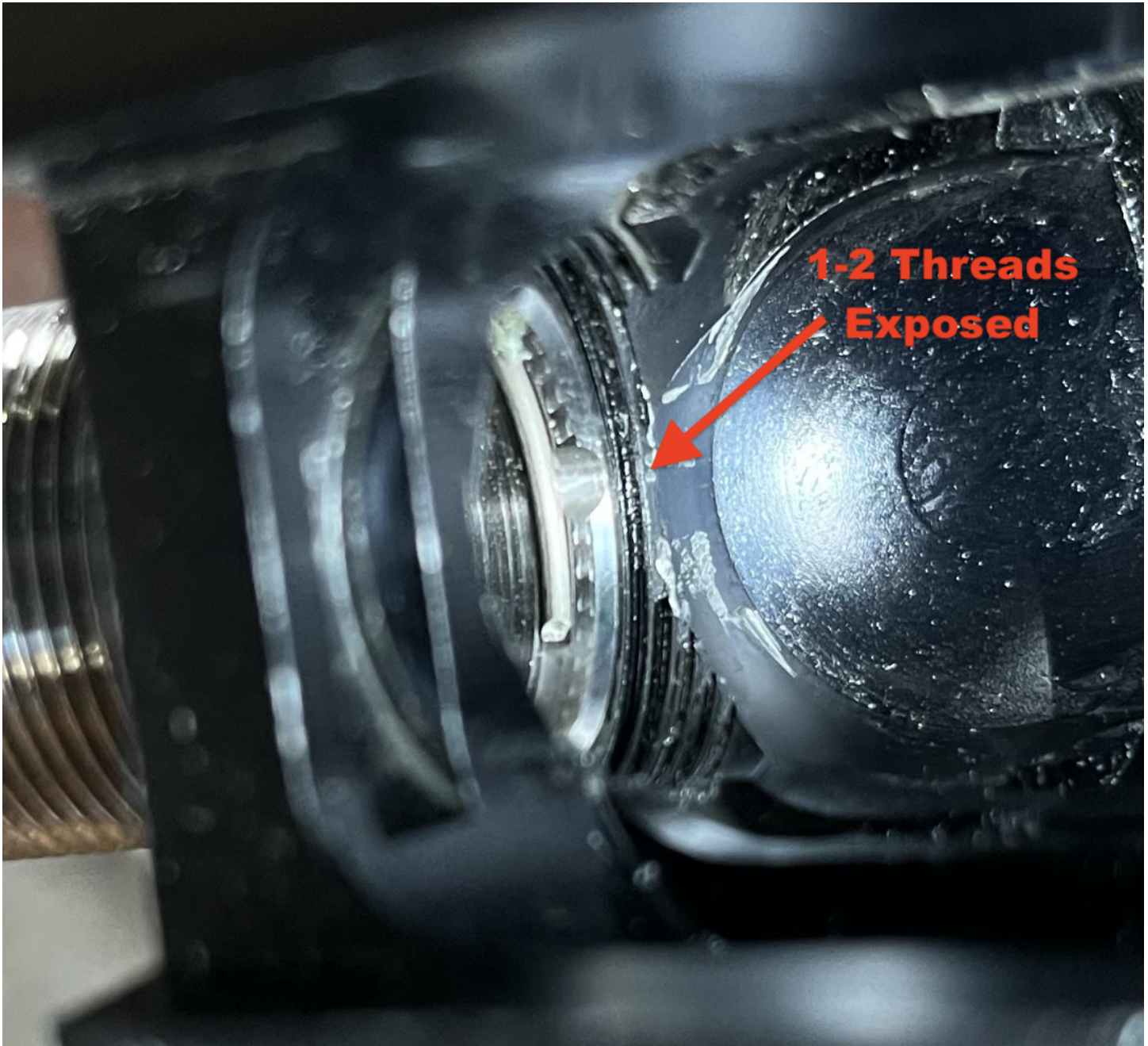


8. 6 Position Recoil Tube Install Prep

Visually Confirm the pre-installation of the internal retaining ring. Rx Arms pre-installs these before shipping.



After visually confirming the retaining ring has been pre-installed, it is time to prepare to install the 6 position tube into the receiver. For how deep to screw in the 6 position tube, screw the new 6 position tube in so that there are 1-2 receiver threads exposed when viewed from inside the receiver, on the top side of the receiver. This is how the OEM tube is installed from the factory, in my experience. Keep in mind every gun is different and may need one thread forward or back for proper fitment.



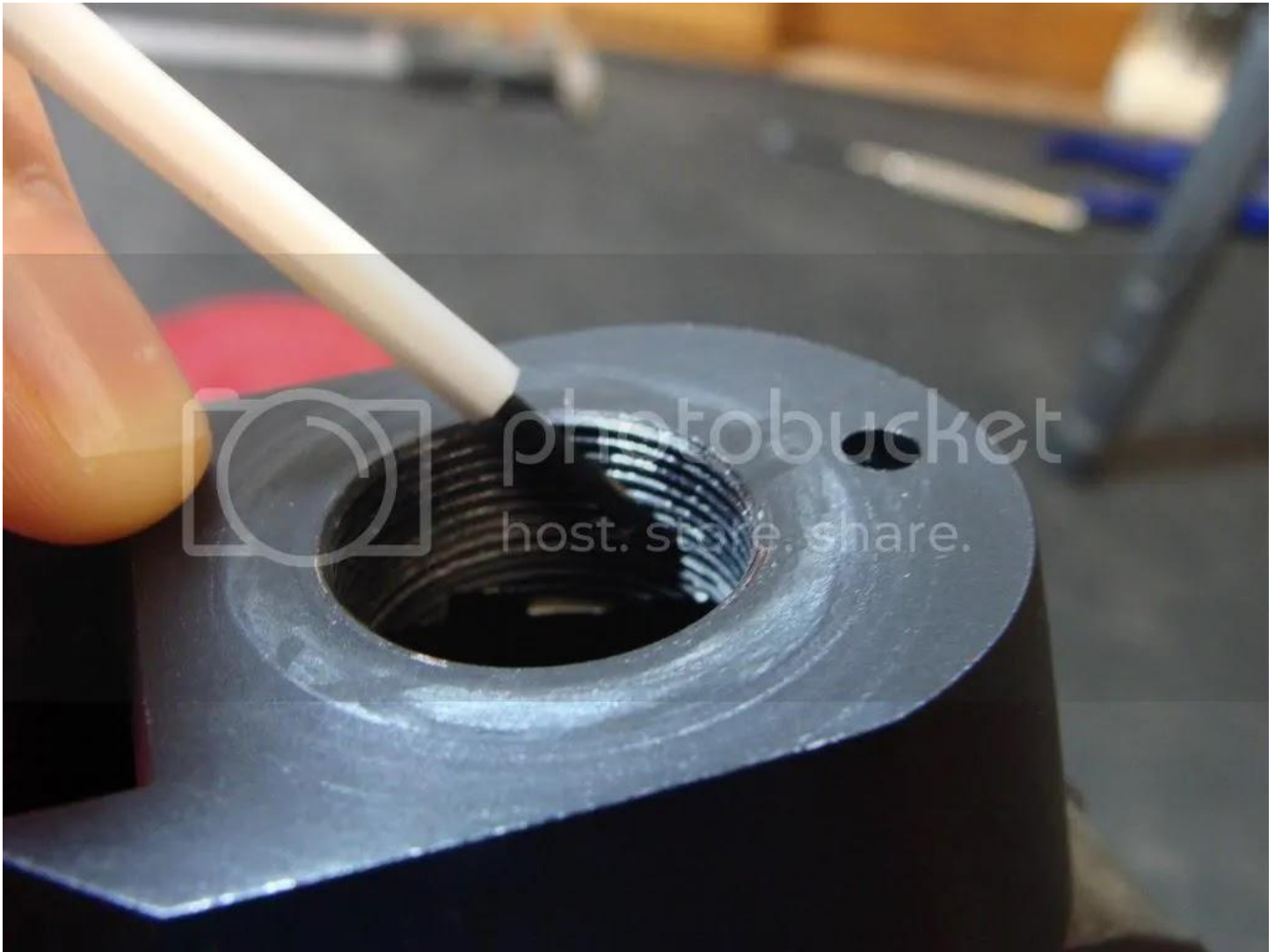
If you thread the 6 position tube too far into the Receiver or too shallow, you will not be able to install the collapsible stock's pistol grip portion correctly, nor will the collapsible buttstock collapse fully with an incorrectly installed pistol grip. The pistol grip threads onto the external threads of the Recoil Tube near the lock-nut. You'll notice that you can thread the Recoil Tube into the Receiver all the way by hand. The only thing that really retains the Recoil Tube is the thread locker and the lock-nut.

Before doing final installation of the tube, it is a good idea to check fitment with the pistol grip, and buttstock fully collapsed. The 6 position tube can be secured to the receiver by lightly tightening the retaining nut before checking fitment. When fully collapsed, and the pistol grip installed tight against the receiver, the buttstock pin housing should fit nicely in the cut out on the pistol grip. If it is not fitting inside the cutout, then the tube may need to either be rotated out one thread, or rotated further in one thread to ensure proper fitment.



After fitment with depth of tube is confirmed, I recommend rinsing the Receiver and the recoil tube in a solvent or brake clean, to make sure all surface debris and oil has been removed. I recommend using a wire brush to clean up the threads. Continue flushing the mating areas to make sure all of the old thread locker compound is washed away.

The Loctite Primer 7471 is an acetone/alcohol based cleaner that helps prepare the surface materials for bonding. It will aid in mating the two dissimilar materials together and provide a stronger hold. I recommend priming all the threads that you intend to use loctite on prior to coating the threads in loctite 271.





9. Tube installation, and timing the 6 position tube.

After priming the threads with Locktite 7471, apply a generous amount of red Locktite 271 onto the 6 position tube to prepare to screw it in . You do not want your recoil tube coming loose during recoil. You can also apply Red Locktite 271 to the backside of the lock-nut where it seats against the Receiver. Don't worry about excess loctite, it can be cleaned up after the installation is complete. Get some Q Tips ready for this.



Screw the 6 position tube into the receiver as discussed on step 8. The Recoil Tube must be timed in order to correctly use the collapsible stock. After screwing the tube into the receiver at the recommended depth, If you have the collapsible stock, install the tail portion of the stock at this time and collapse it fully. Use the comb of the stock as an index point to align the Recoil Tube. The comb of the stock should point dead center to the rear iron sight housing. Once aligned, carefully remove the buttstock



This is the best method for setting the timing of the 6 Position Tube.. Make sure the stock is fully closed and locked in position when taking your measurements. You'll notice that the recoil tube can be turned by hand easily. So once you've determined where you want it, be very careful during your removal of the stock so that you do not disturb the recoil tubes position



You can also set the buttstock to full length position 6, line up the buttstock again, and use a silver Sharpie or a pencil to add witness lines on the Receiver and the 6 position tube if necessary for double confirmation when doing the final tightening. If the tube is rotating a bit when you try to remove the buttstock, adding witness lines is recommended.

After confirming the timing and removing the buttstock, thread the lock-nut over the Recoil Tube and finger tighten it. I highly recommend applying Locktite Primer 7471 and Red Locktite 271 to lock-nut too before installaton. Re-check your alignment with the buttstock stock to make certain it is straight.

For a final tightening, apply about as much torque to the lock-nut as it took to break the lock-nut free during disassembly. Counter rotation pressure should be applied using the 19mm box wrench or crescent wrench on the end of the 6 position tube flat section, at the same time as you are tightening the lock nut with the 27mm wrench to assure the tube does not rotate when tightening the lock nut.



At this point, you can apply several additional drops of Red Locktite 271 to the mating surface of the lock-nut. This is to essentially glue the lock-nut to the base of the Receiver.



After you've torqued the lock-nut down, the Red Locktite 271 will obviously be all over the place from displacement. Wipe up the excess. I found Q-Tips with Mineral Spirits did an excellent job at removing the excess loctight.

10. Re-install the recoil tube internals

Lubricate the bearing surfaces of the Recoil Spring Plunger and insert it into the bottom of the recoil tube. Insert the Recoil Spring over the bottom of the Recoil Spring Plunger and push the Recoil Spring Plunger all the way in. Compress the Recoil Spring and insert a punch through the drainage hole to help retain the Recoil Spring.



The best way I found to compress the Recoil Spring is to hold the recoil tube in your right hand so your thumb and pointer finger are over the bottom opening and grasping the Recoil Spring. With your left hand, grasp the Recoil Spring approximately three inches below the Recoil tube. Compress the three inches into the recoil tube. With your right hand, grasp the newly compressed portion of Recoil Spring. Continue to do this until most of the Recoil Spring has been pressed into the Recoil tube. Insert a punch through the upper drainage hole to retain the Recoil Spring. This will allow you to use both hands to compress the remaining amount of Recoil Spring and begin threading the Stock Retaining Screw into the Recoil tube.

Use the Magna Bit driver to tighten the Stock Retaining Screw until it bottoms out inside the recoil tube. Then use the snap-ring pliers to install the Stock Retaining Ring.



You can screw in the Stock Retaining Screw by hand most of the way. By pressing your thumb against the part, and twisted your thumb you can screw it in 90% of the way.



Here, the Stock Retaining Screw is fully seated. Notice the groove about half way in on the threading of the Recoil Tube? This is the groove the Stock Retaining Ring fits into.





Here the Stock Retaining Ring is fully seated. I tap on the Stock Retaining Ring with a large flat punch and a small hammer to make sure it is seated fully.

11. Reassemble the Firearm

Perform a function test of the weapon to ensure that it is functioning properly. Ensure that you properly lubricate the Receiver after degreasing the action. You'll notice a difference when you pull the bolt to the rear if you haven't re-lubricated the weapon. I would recommend testing the safety, trigger and disconnecter.

That concludes the tutorial on how to disassemble and install the Rx Arms 6 position recoil tube on the Benelli M4.