

HERE'S HOW TO STOP FLUSHING INK DOWN THE DRAIN



TRIPLE EAGLE[®]

Peristaltic Pump

Patent Nos. 6,041,705

Manufactured By USAvantage, INC.



MAINTENANCE MANUAL

A NOTE ON PREVENTATIVE MAINTENANCE

The **Triple Eagle Peristaltic Pump** will last for years if proper care and simple preventative maintenance measures are taken. The tubes that come installed with the **TEPP** can endure countless hours of use. As with any peristaltic pump, the hoses will eventually need to be replaced. It is important to inspect the condition of the tubes periodically. Be sure to look for excessive wear or pinholes. Many long-term users of the **TEPP** have scheduled inspections when the maintenance crew routinely opens and checks the **TEPP** once a week.



IMPORTANT: If a tube breaks and ink leaks into the pump housing, wash out the ink **immediately**. **Do not allow ink to dry on the rotors and spools within the pump housing**.

TUBE REPLACEMENT



1) Cut cable-ties securing the tube to the brass barbed fittings on the outside of the **TEPP**. You may need to cut through the tube in order to remove the brass fitting. Be careful not to damage the fitting. Once one of the fittings is removed, pull the used tube out of the **TEPP**.



2) If you have your own roll of tubing, cut a section precisely 14 ¼” long for external fittings. For pumps with internal fittings, cut the tube to 9 ¾” long. We recommend using Tygon E-LFL manufactured by Masterflex.



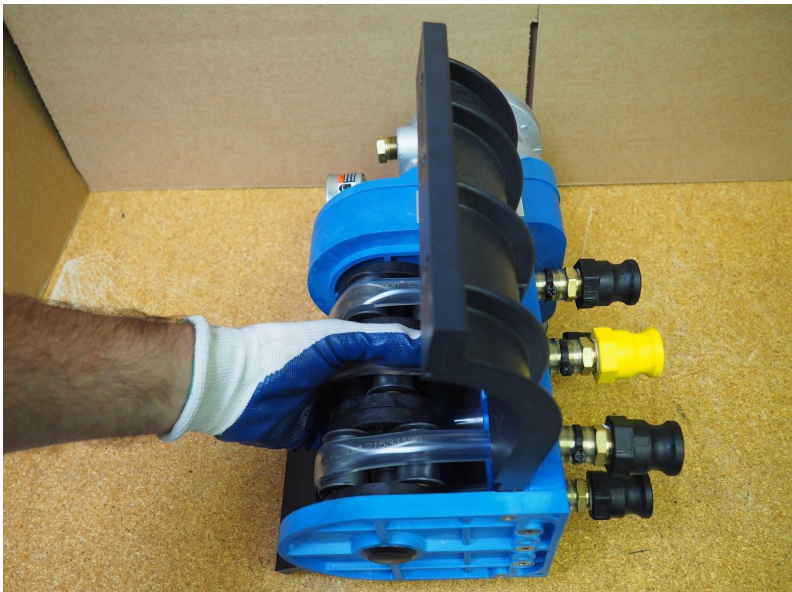
3) Use a household hair dryer to warm the end of the tube for approximately 30 seconds. **DO NOT USE A HEAT GUN.**



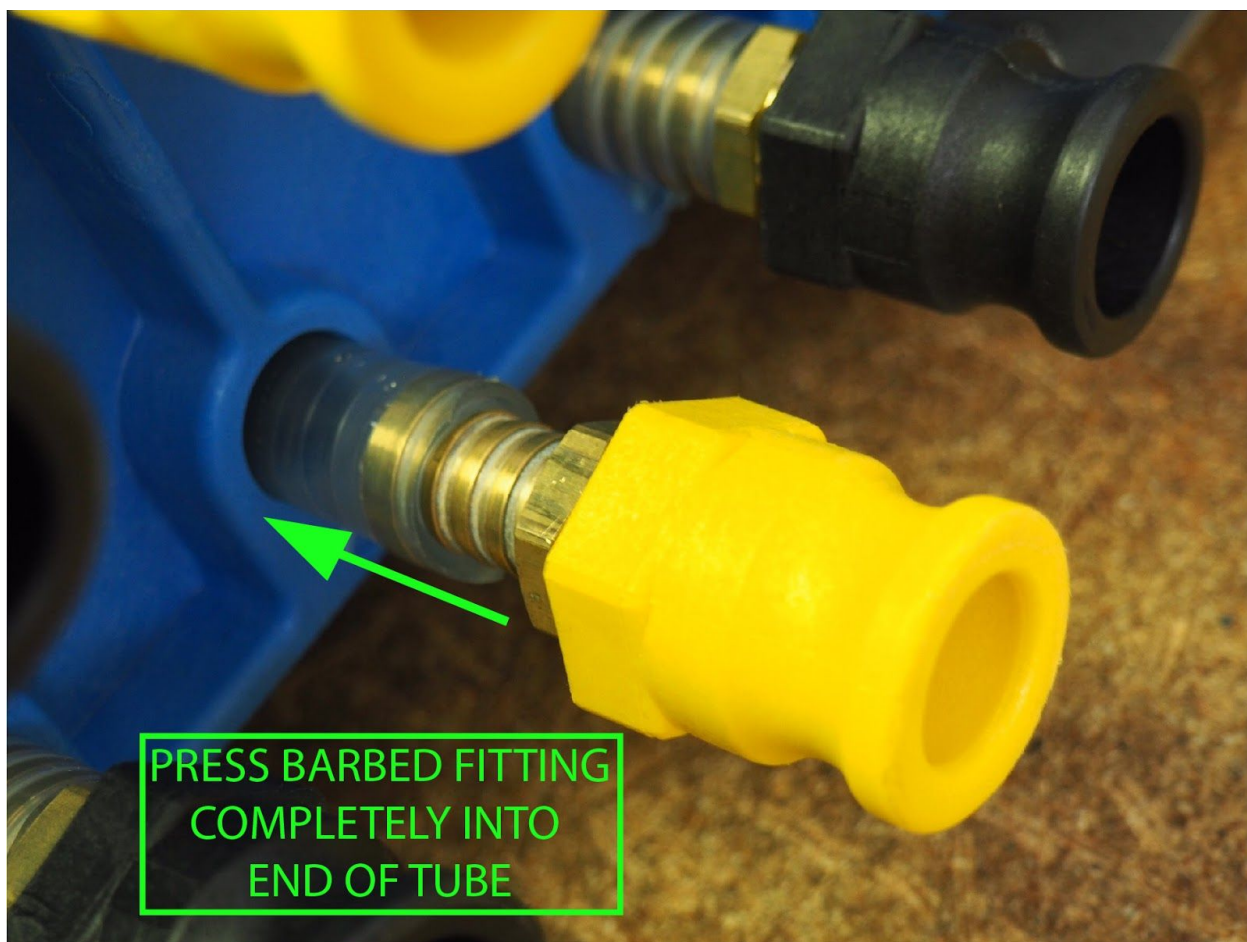
4) Firmly press the brass barbed fitting into the new replacement tube. **DO NOT USE PETROLEUM BASED LUBRICANTS** (such as WD-40) for this step...just good old-fashioned elbow grease. A little water will help. Petroleum based lubricants will damage the tube material and may cause premature wearing.



5) Pull new replacement tube through top of faceplate.



6) Wrap tube around rotor. Firmly grasp tube and rotor from inside the **TEPP** housing and turn through bottom of faceplate. Hold in place.



PRESS BARBED FITTING
COMPLETELY INTO
END OF TUBE

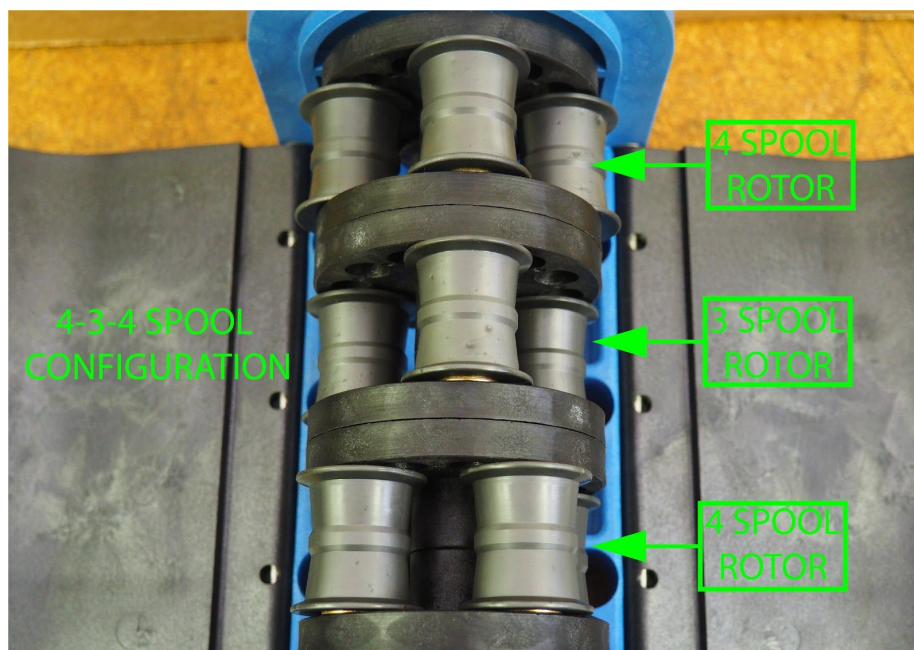
7) While holding the new tube and rotor, warm other end of tube and press other fitting into hose. Secure new tubes with cable ties.

ROTOR MAINTENANCE

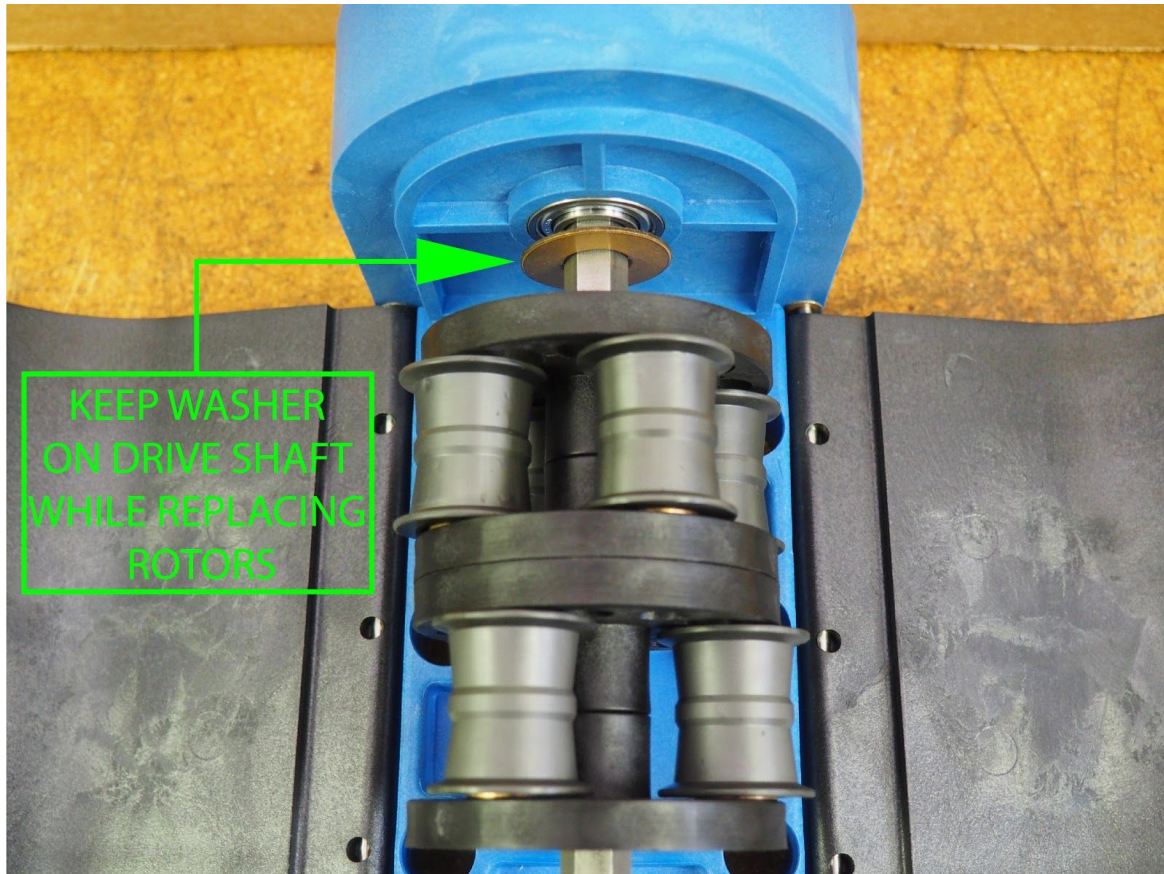
Remove all tubes before proceeding.



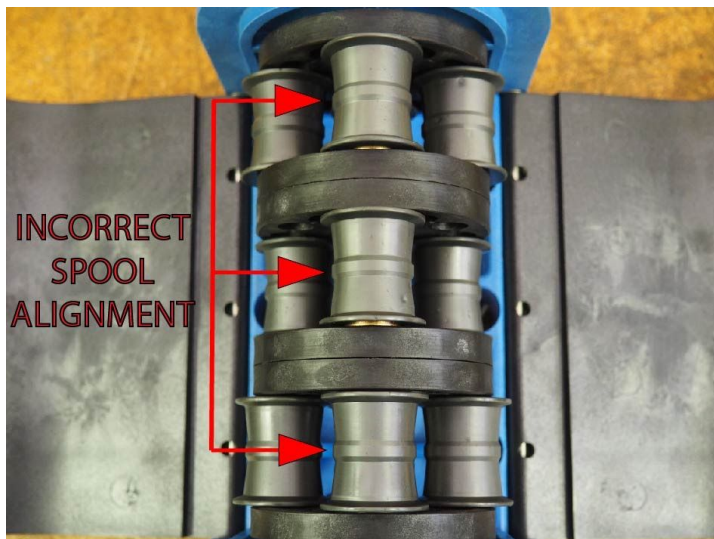
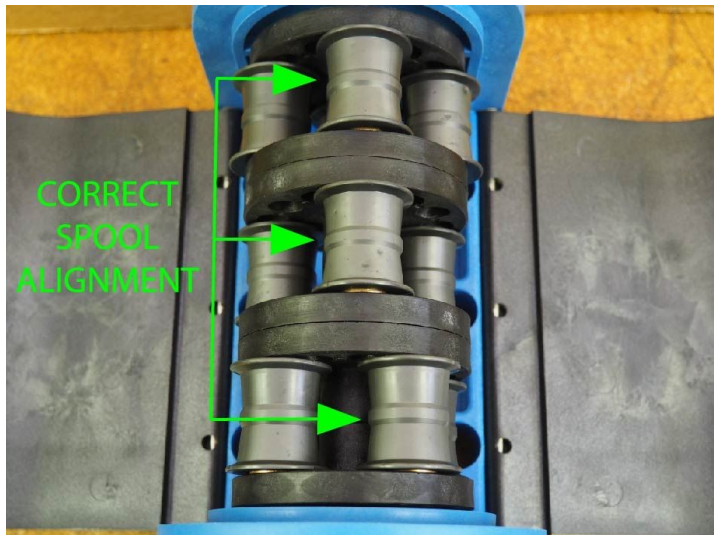
- 1) Remove screws from base plate. Open doors and remove base plate.
- 2) Slide off used rotor assemblies. **Do not remove washer** on drive shaft.
- 3) Slide on new rotor assemblies in a 4-3-4 spool configuration.



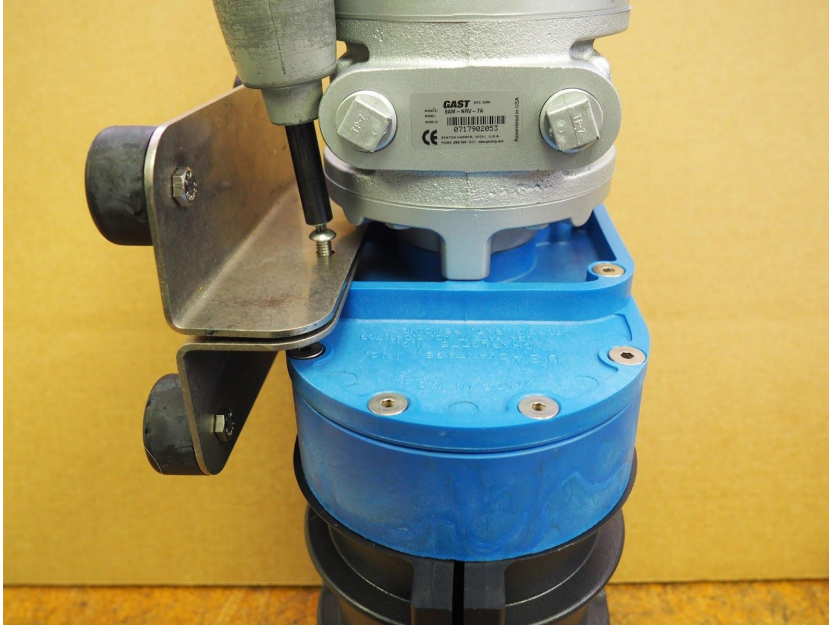
ATTENTION: Be sure to keep the 1/16" brass washer on the steel drive shaft before inserting new rotors. This washer is used as a spacer in order to make sure the rotors are secure and do not slide out of place.



ATTENTION: When replacing rotor assemblies, make sure the spools are aligned correctly. The **TEPP** functions optimally when one of the rotors is offset from the other two rotors. If all three spools are aligned, remove the rotor last rotor and rotate it.



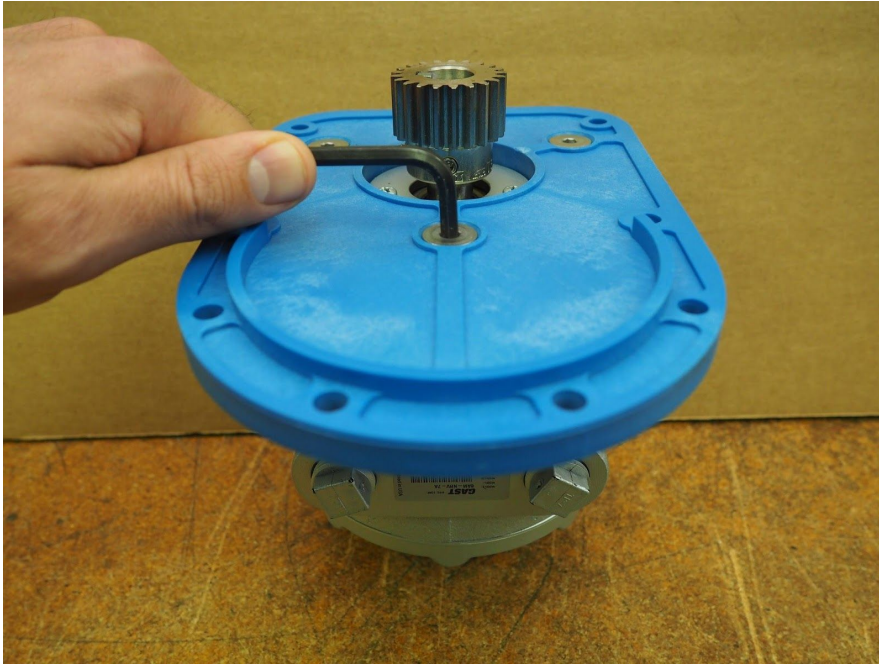
NICKEL-PLATED DRIVE GEAR REPLACEMENT or AIR MOTOR REPLACEMENT



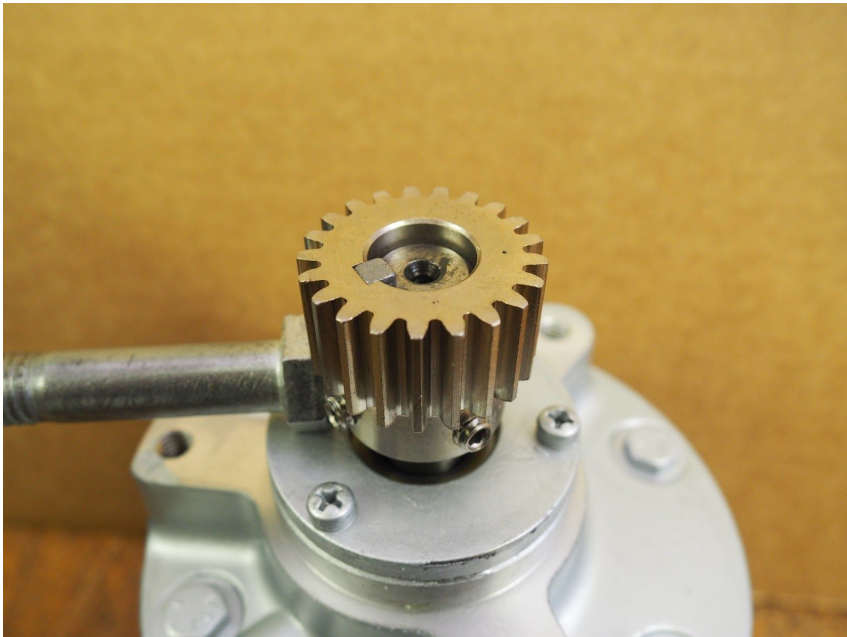
1) Remove both screws from the stainless steel base “legs.”



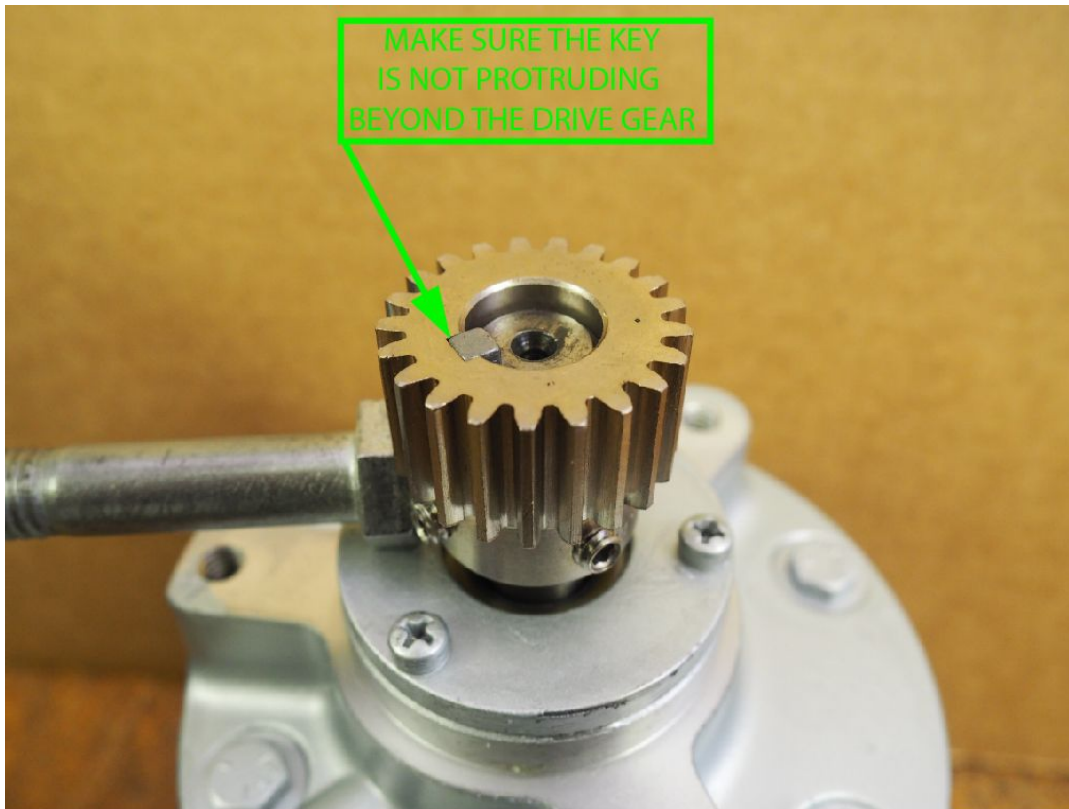
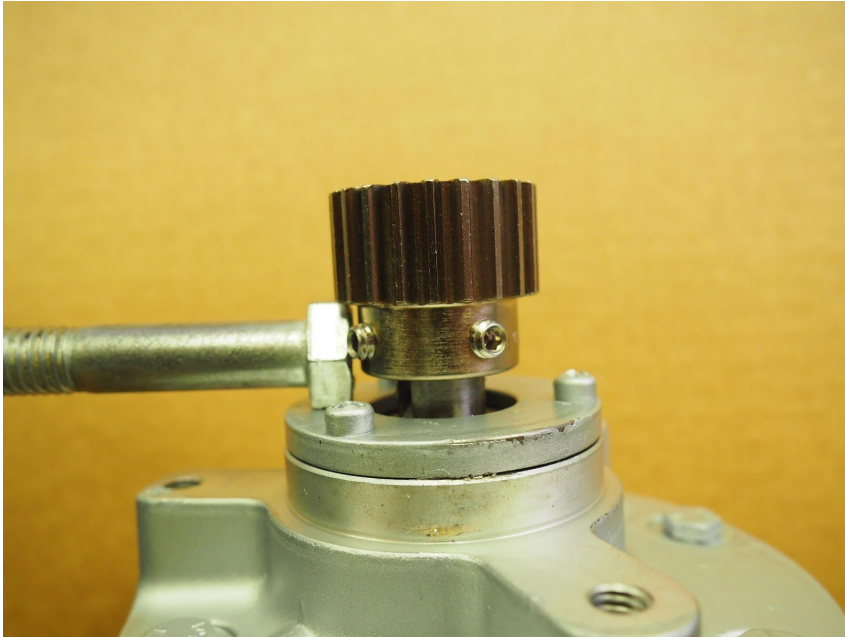
2) Remove screws from motor mount. Carefully remove motor with motor mount, turn over, and set on workbench.



- 3) Loosen screws and remove motor mount for full access to air motor.
- 4) Remove set screws from drive gear. Slide drive gear off of drive shaft of air motor.
- 5) Slide new gear onto drive shaft.

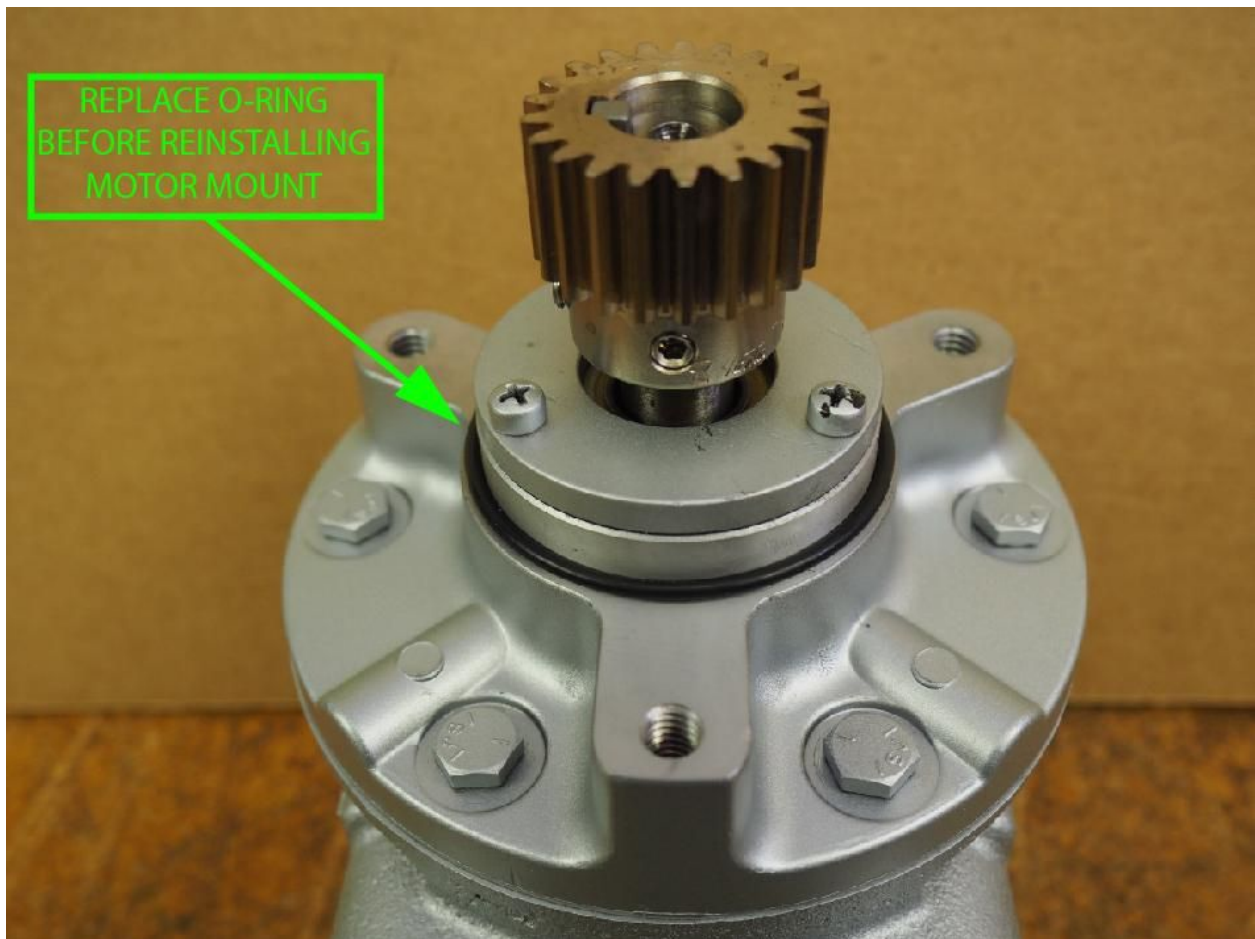


6) Use a $\frac{3}{4}$ " bolt to hold the gear in place at the correct height. Tighten set screws.



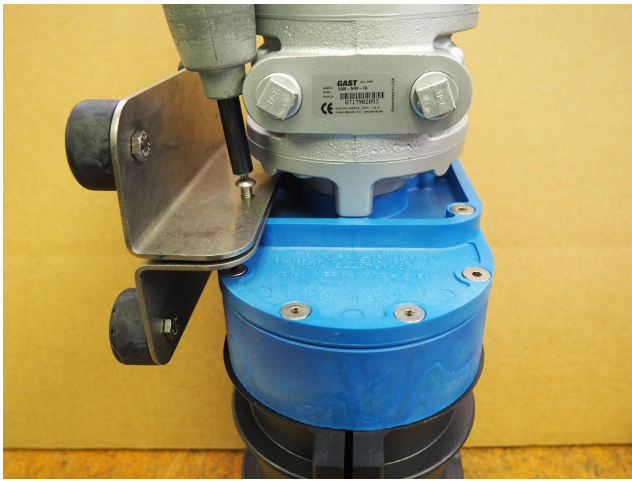
WARNING: Damage will occur within the gear reducer housing if the key securing the drive gear protrudes out from the edge of the drive gear.

ATTENTION: REPLACE THE RUBBER O-RING WHEN REATTACHING THE AIR MOTOR TO THE MOTOR MOUNT.



DRIVEN GEAR REPLACEMENT

Remove all tubes and rotors (see page 7) before proceeding.



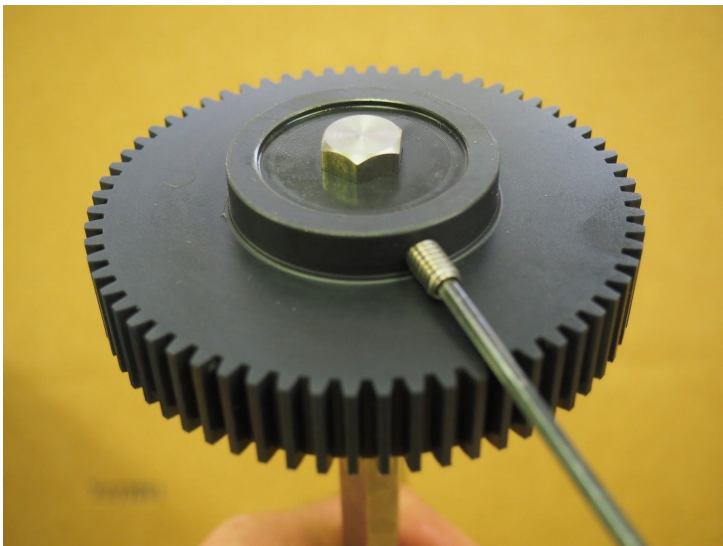
1) Remove both screws from the stainless steel base “legs.”



2) Remove screws from the motor mount and gear reducer housing. Carefully remove the air motor and motor mount.



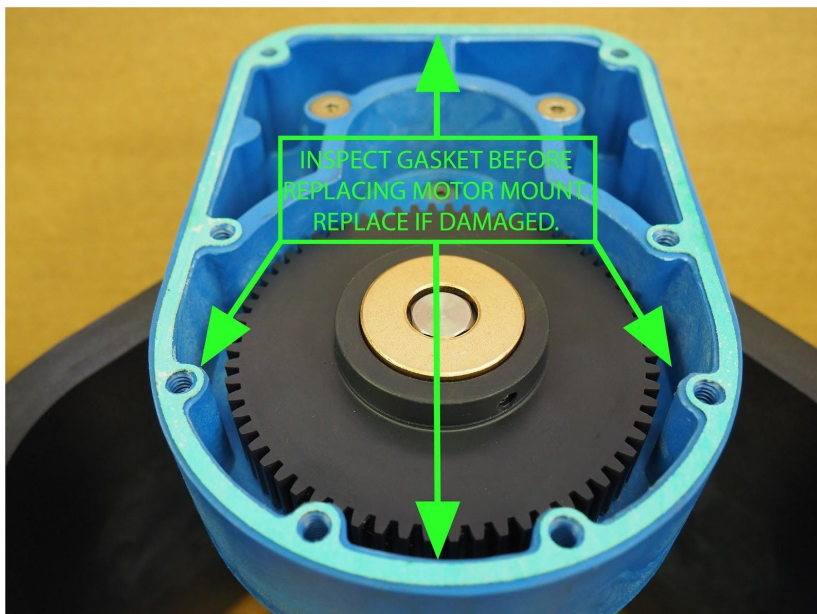
3) Set aside brass washer and remove Nylatron gear with drive shaft. Note the second brass washer under the gear.



4) Remove the 3 set screws from the Nylatron gear. Slide gear off of drive shaft.

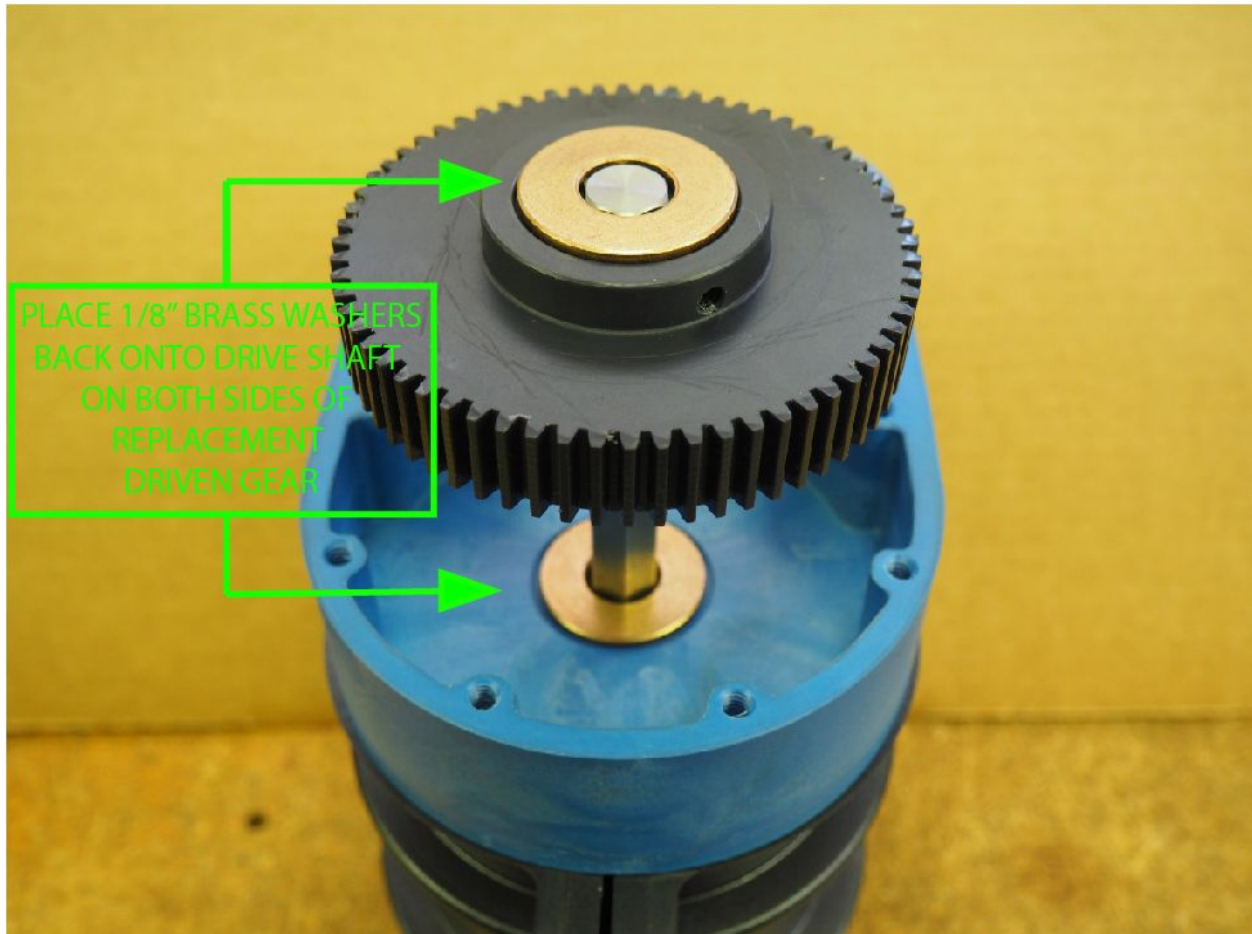


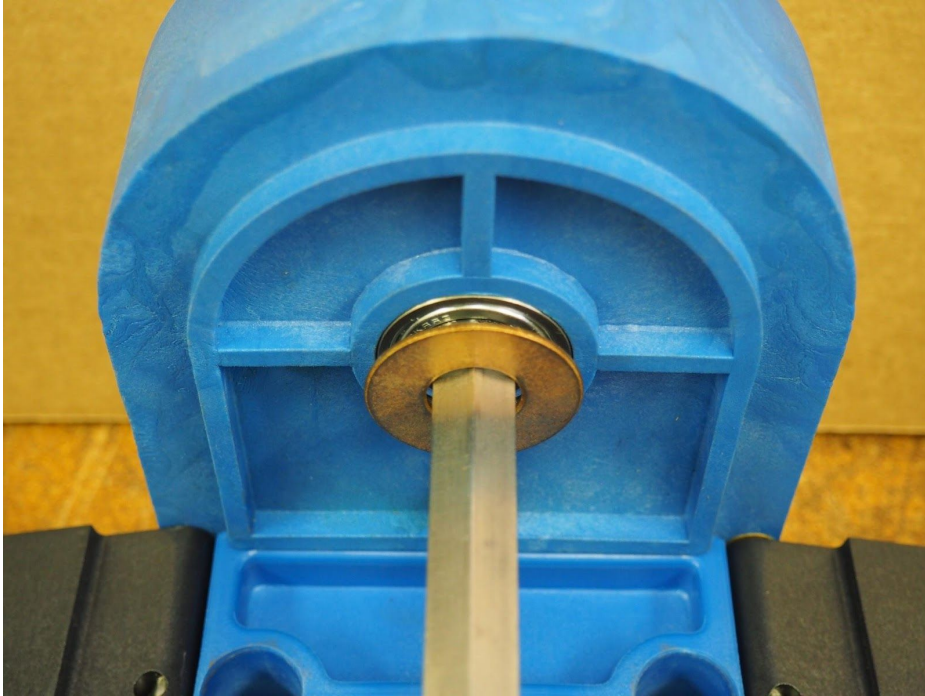
- 5) Slide new gear onto drive shaft. Replace top brass washer. Tighten the set screws of the driven gear when the end of the drive shaft is slightly less-than-flush with the outer edge of the washer.
- 6) Slide drive shaft back through brass washer and bearing in gear reducer housing.



- 7) Inspect condition of gasket around edge of gear reducer housing before replacing air motor. Replace the gasket if needed.

ATTENTION: When replacing the Nylatron driven gear, make sure to reinstall both 1/8" brass washers on the drive shaft. The washers should go back on both sides of the driven gear inside the gear reducer housing.





ATTENTION: Replace the 1/16" brass washer on drive shaft before replacing rotor assemblies. See page 8 and 9 on how to correctly reinstall the rotor assemblies.



A NOTE ON VACUUM

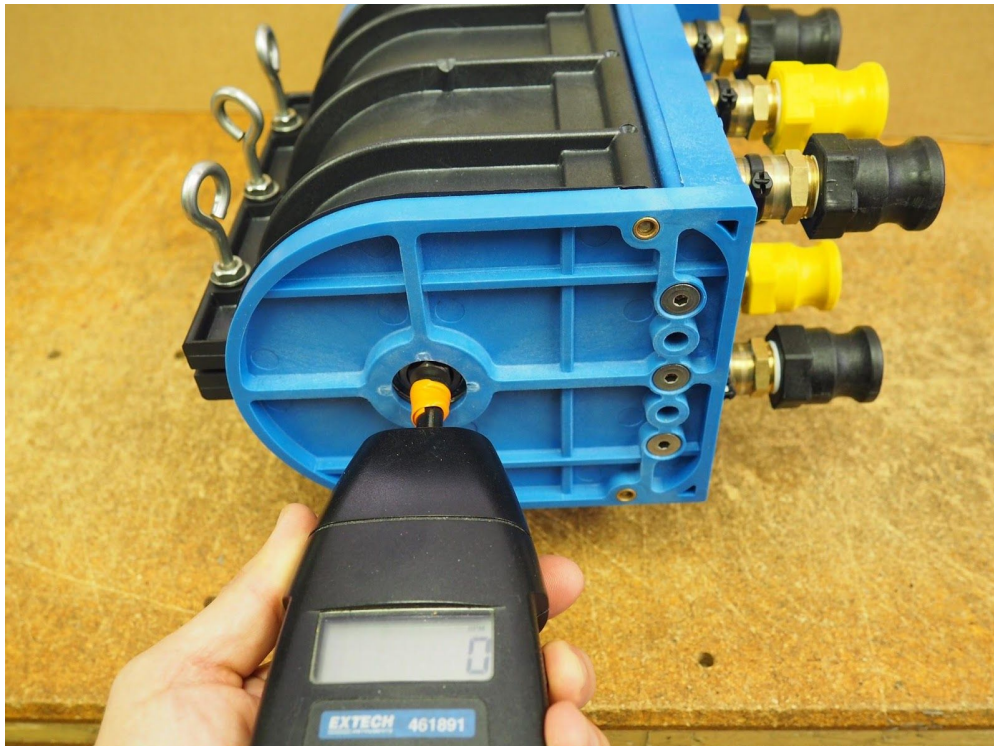
Vacuum leaks are often quite difficult to detect, as opposed to pressure leaks in which ink would be visibly spraying or dripping out of the system. Vacuum leaks pull air into the ink and are nearly impossible to see. Excessive foaming in your ink kit is a good indicator there is a problem. If you find the **TEPP** is not properly moving ink through the flexo section, there is a chance a vacuum leak has occurred somewhere in the system. Always be sure to use teflon tape with any fitting on a hose between the pump and the ink pan. Also look for obstructions or holes in the hoses leading to and from the pump.

A NOTE ON RPM

Although it may seem that “faster is better,” this is not the case with peristaltic pumps. If compression of the tubes occurs at too fast of a rate, the ink will not be effectively pushed through the pump. Therefore, the TEPP should be run at **NO FASTER THAN 300 RPM**. Optimally, the **TEPP** should run at **150 RPM**. Slower RPM causes better suction and allows the pump to deliver the ink in a controlled fashion.



To measure RPM, remove the black plastic cap at the end of the **TEPP** housing.



Insert a tachometer into the dimple on the end of the drive shaft while the pump is in operation.

