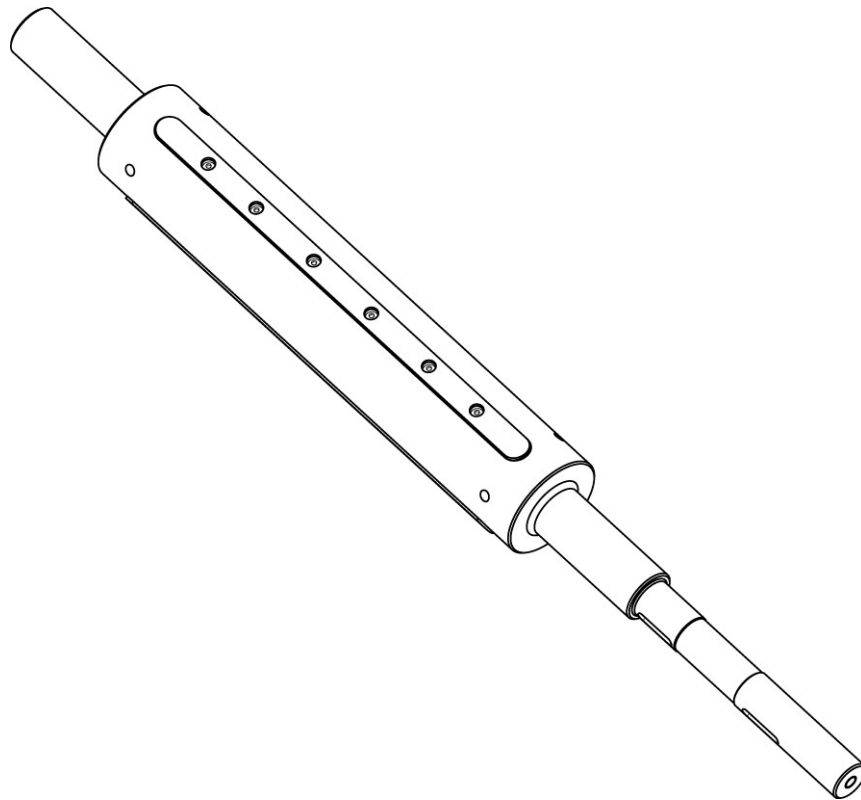




Tidland Internal Element Slitter Shaft

Installation, Operation and Maintenance



IMPORTANT SAFETY INSTRUCTIONS

When using this Tidland product, basic safety precautions should always be followed to reduce the risk of personal injury. Your company's safety instructions and procedures should always be followed. When using this product with any other equipment or machinery, all safety requirements stipulated by that equipment or machinery manufacturer must be followed. Compliance with local, state, and federal safety requirements is your responsibility. No part of these or the following instructions should be construed as conflicting with or nullifying the instructions from other sources. Be familiar with the hazards and safety requirements in your work environment and always work safely.

Read and understand all instructions and shaft design application limits before operation.

Never use this product for a purpose or in a machine that it was not specifically designed for. See Product Safety Data Sheet (PSDS).

Do not exceed the operation loads for this shaft as noted on its PSDS, Product Safety Data Sheet.

Follow all warnings and instructions marked on the product and on the PSDS.

Do not use fingers or other objects to deflate the shaft; Tidland recommends using the Tidland Air Release Tool (see page 3).

Inspect the shaft for wear and/or other safety and functional deficiencies daily, before each use.

Wear safety glasses or proper eye protection when inflating or deflating or otherwise operating the air system.

Do not remove or otherwise alter any setscrews or fastening devices prior to using this product.

Do not operate this product if any setscrews or fastening devices are missing.

Do not lift shaft manually if it is beyond your capacity. Loads over 1/3 your body weight may be prohibitive. Consult your company safety policy.

When lifting a shaft, use proper lifting techniques, keeping back straight and lifting with the legs.

Do not carry or lift this product over wet or slippery surfaces.

Use appropriate mechanical lifting devices, such as a hoist or shaft puller, for heavier shafts.

When performing maintenance or repair procedures, do not pressurize the shaft if journal setscrews are loose or missing.

When performing maintenance procedures, do not pressurize the shaft if the journal is missing.

All replacement parts used on this product should be made to original Tidland specifications.

All maintenance and repair procedures performed on this product should be done to Tidland specifications by qualified personnel.

NOTICE

- If shafts with rubber air systems are stored longer than two weeks - store them completely deflated, away from electric motors, away from direct sunlight or florescent light, and in temperatures not exceeding 85°F (29°C).
- If shafts are stored with constant air pressure, the rubber air systems are subject to distortion or cold flow.

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CAUTION

- Tidland Slitter Shafts are designed for holding anvil blades in place during slitting operations.
- Wear eye protection when using compressed air.
- Keep the shaft operating pressure above 80 psi (5.4 bar) to ensure optimal safety and performance.
- Do not inflate or deflate the shaft while it is spinning.
- Use only the specified Tidland air tools to inflate or deflate the shaft.



TIDLAND CUSTOMER SERVICE

1-800-426-1000

www.maxcessintl.com

Visit the Tidland Repair and Return Center online to review our return policies
or to submit an electronic Return Material Authorization Request.
www.tidland.com/returns

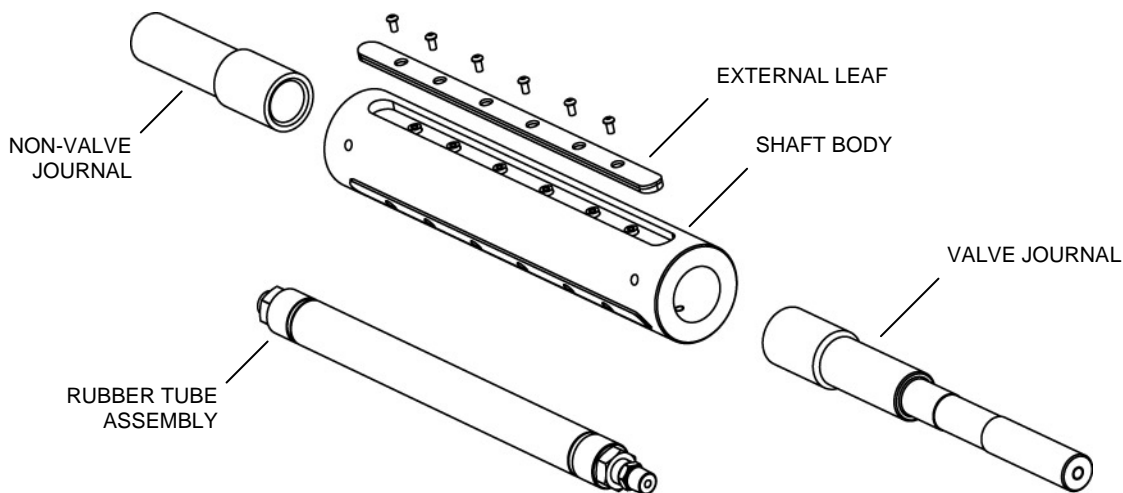
RECOMMENDED TOOLS

- Clean, non-lubricated air supply: 80-120 psig (5.5-8.3 bar) for proper operation.
- Tidland Inflation Tool (Part No. 128052)
- Tidland Air Release Tool (Part No. 111630)
- *Parker Super O-Lube o-ring lubricant*
- *Loctite® 242*

For more accessories to help with your slitting processes, visit www.maxcessintl.com.

NOMENCLATURE

Journal fasteners and valve locations vary.



OPERATION

Shaft Operation

- Keep the shaft clean and dry.
- Make sure that there are no scratches or burrs on the shaft body.
- Keep the shaft pressure between 80-120 psi (5.4-8.3 bar) to ensure optimal safety and performance.
- Rotary union air connections, typically controlled by valves, are optional. Contact Tidland Customer Service. 1-800-426-1000



Inflating the Shaft



Do not inflate while the shaft is spinning.

1. Position anvil rings along the shaft.
2. Connect air hose to a convenient dry air source.
3. Push the air nozzle of the Tidland Inflation Tool firmly into the valve receiver.
4. Inflate the shaft until the air gauge indicator registers a minimum of 80 psi (5.4 bar). Do not exceed the maximum air pressure of 120 psi (8.3 bar).

Deflating the Shaft



Only use the air release tool. Do not deflate while the shaft is spinning.

1. Using Tidland Air Release Tool, push in the quick release air valve.
2. Reposition the anvil rings.

Shaft Maintenance

- Keep the shaft clean and dry.
- Make sure that there are no scratches or burrs on the shaft body.

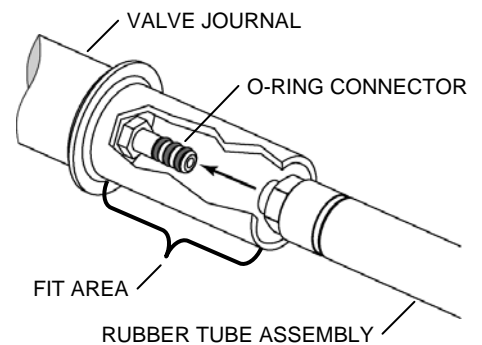


Removing the Rubber Tube Assembly from the Shaft

1. Release all air from shaft and disconnect air supply.
2. Match-mark journal and shaft for alignment during reassembly.
3. Remove fasteners from the valve journal.
4. Remove the valve from the air valve end of the shaft.
5. Use jacking threads, tightened alternately, to remove the valve journal
6. Disconnect the valve journal from the rubber tube assembly.
7. Pull the rubber tube assembly out of the shaft.
8. Inspect the inside of the shaft for debris. Blow out with clean, dry air if necessary. Deburr edges where necessary.

Installing a Complete Rubber Tube Assembly

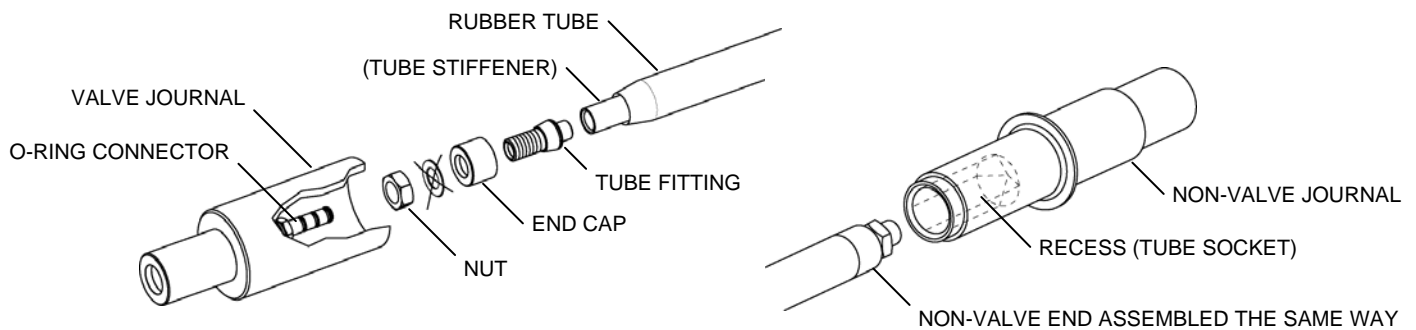
1. Apply o-ring lubricant (*Dow Corning 111 Compound* recommended) to the o-rings on the o-ring connector.
2. Push the valve end tube fitting fully over the o-ring connector in the valve journal.
3. Insert the non-valve end of the rubber tube assembly into the shaft. Slide it all the way in until it seats in the recess in the non-valve journal.
4. Apply an anti-seize compound to the fit area of the valve journal.
5. Align the match marks on journal and shaft and tap the journal into place with a rubber mallet.
6. Apply small amount of *low-strength* threadlocker to threads of the journal fasteners. Reinstall the fasteners and torque according to chart on page 7.
7. Reinstall the valve and torque to 8.8-10 ft-lbs (12-13.6 Nm).



Disassembling the Rubber Tube Assembly

- This assembly consists of four parts: rubber tube element, tube fitting, end cap and jam nut. Some assemblies also include a tube stiffener.
- Older assemblies may have a washer, which is no longer necessary if using *Loctite 242* on tube fitting hardware.
- All fittings can be reused with new rubber tube material: if any parts are rusted or worn, Tidland recommends replacing the entire air system.

1. Remove the nut from the valve end of the rubber tube assembly.
2. Pull the end cap off of the tube.
3. Remove the tube fitting from the tube and disconnect the tube stiffener (if installed).



Note the difference in tube fittings:

- Valve end fittings are bored through for air passage.
- Non-valve fittings are solid.



Do not inflate rubber tube assembly outside of the shaft.

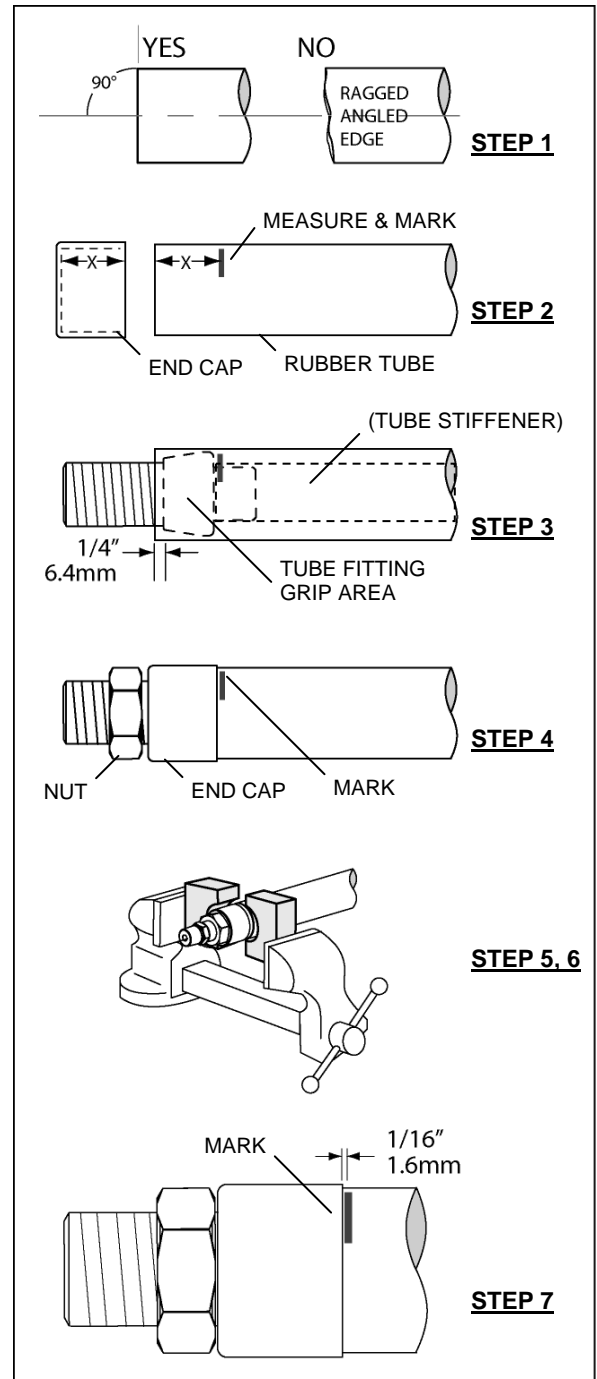
Tube fittings could disengage from assembly and become dangerous projectiles.
Can result in serious injury.

MAINTENANCE

Reassembling the Rubber Tube Assembly

- When cutting rubber tube to length, it is very important to cut the ends square, without nicks or wavy edges. Heavy tin snips work well. Any uneven cuts will not let the rubber tube seat properly in the end cap, resulting in an unreliable assembly subject to failure under pressure.
- Before assembly, clean ends of rubber tube inside and out to make sure all mold release agents or other foreign coatings are removed. This will help prevent the rubber tube from squeezing out of the cap when the retaining nut is tightened.

1. Square off the end of the rubber tube material.
2. Measure the inside depth of the end cap and mark the rubber tube accordingly. The tube should match up at assembly with the mark not more than 1/16" (1.6mm) away from the end cap.
3. Start with the valve end tube fitting – push it into the rubber tube so that the end of the tube extends beyond the gripping area 1/4" (6.4mm) or more, leaving enough threads to start the nut.
NOTE: If the assembly uses a tube stiffener, insert it into the rubber tube first and attach it to the tube fitting. Then insert the fitting into the rubber tube.
4. Work the end cap over the rubber tube until the edge lines up with the mark on the tube. Apply *Loctite 242* to the threads and start the nut, making it finger tight. (Older shaft designs used a washer, which is no longer necessary with the use of *Loctite 242*.)
5. Lock the assembly in a vise using a special round clamping fixture around the end cap. Do not bend or crush the end cap.
6. Tighten the retaining nut until the end cap and tube fitting are seated together. Torque to values listed.
7. After final assembly, check the mark on the rubber tube to be certain rubber has not squeezed out of the end cap during tightening. If the mark has moved away in excess of 1/16" (1.6mm), the assembly must be loosened and reset. This procedure must be repeated until the rubber tube remains in its correct position as marked in Step 2.
8. Repeat entire procedure, Steps 1 through 7, for the non-valve end of the rubber tube assembly.



Assembly Torque Requirements for Standard Tube Fittings							
Tube O.D.	ft-lbs	Nm	Tube O.D.	ft-lbs	Nm		
1-1/4"	32 mm	28-30	38-41	2-3/8"	60 mm	58-60	79-82
1-3/8"	35 mm	38-40	51-54	3-3/8"	86 mm	63-65	85-88
1-1/2"	38 mm	43-45	58-61	4"	102 mm	68-70	92-95
1-5/8"	41 mm	43-45	58-61	4-3/8"	111 mm	78-80	105-108
1-7/8"	48 mm	48-50	65-68	4-1/2"	114 mm	78-80	105-108
2-1/8"	54 mm	53-55	72-75				

For tube sizes not listed, contact Tidland Customer Service.

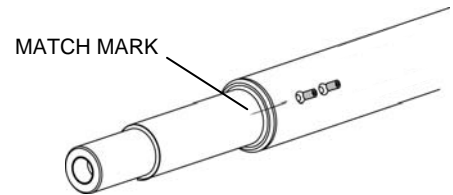
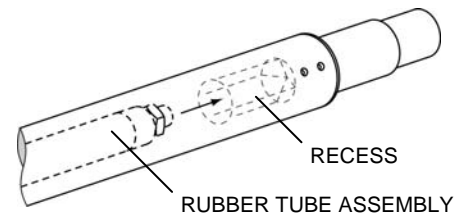
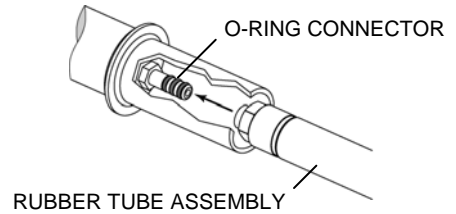
MAINTENANCE

Shaft Assembly Sequence

1. Apply o-ring lubricant (*Parker Super O-Lube* recommended) to the o-rings on the o-ring connector.
2. Insert the rubber tube assembly into the valve journal and push the valve end tube fitting fully over the o-ring connector in the valve journal.
3. Apply an anti-seize compound to the fit area of the valve journal.

4. Insert the non-valve end of the rubber tube assembly into the shaft. Slide it all the way in until it seats in the recess (tube socket) in the non-valve journal.

5. Align the match marks on valve journal and shaft and tap the journal into place with a rubber mallet.
6. Apply small amount of low-strength threadlocker to threads of the journal set screws. Reinstall the set screws and torque as shown in the chart below.
7. Reinstall the valve:
 - a. Apply a thread sealant (according to the manufacturer's directions) to threads of the valve.
 - b. Screw the valve into the shaft and torque to 8.8-10 ft-lbs (12-13.6 Nm).
8. Test shaft inflation and check for leaks before putting shaft back into operation.



Journal fastener configurations vary.

Set Screw Torque Requirements			
US	ft-lbs	Metric	Nm
1/4"	4.3	M6	5.1
5/16"	8.6	M8	11.85
3/8"	15.2	M10	23.3
1/2"	34.2	M12	38.0



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