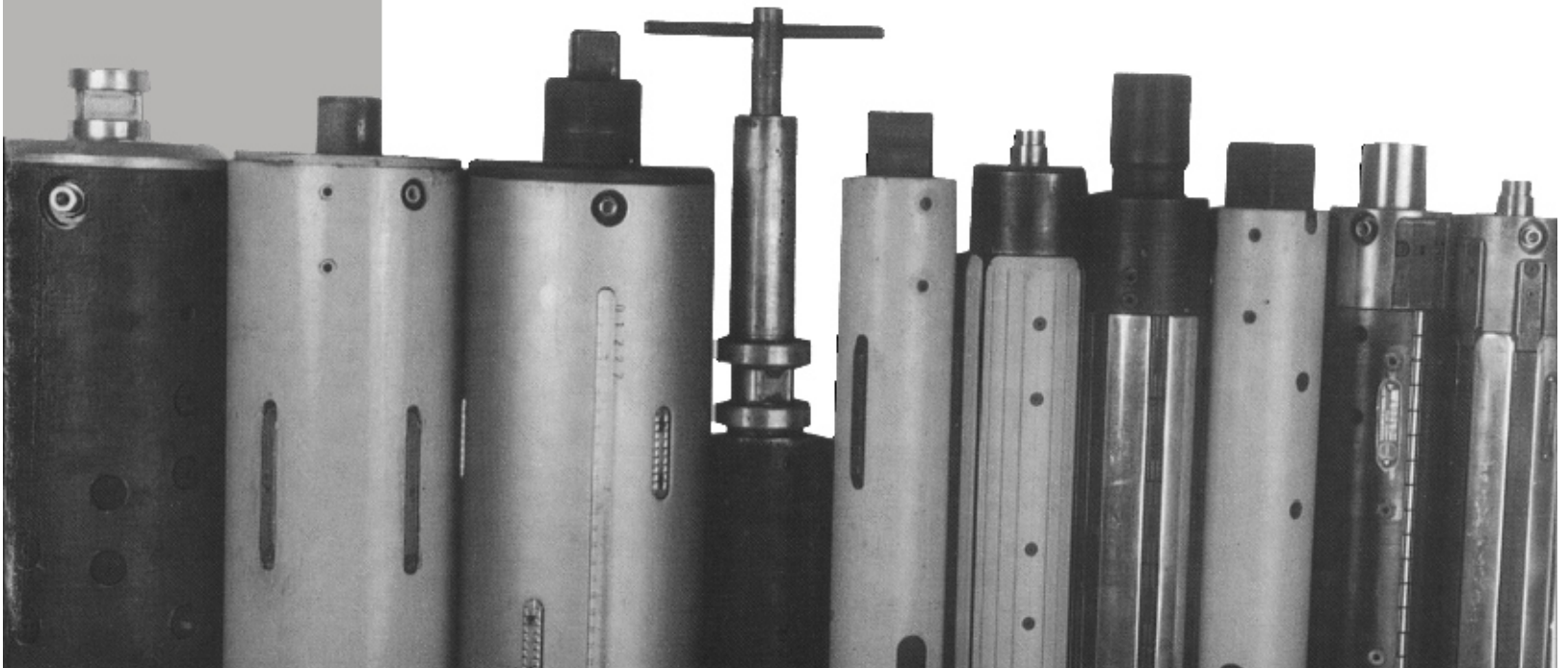


HANDLING & MAINTENANCE GUIDE





PART-1

AIR SHAFT OPERATING INSTRUCTION

1. Air Shaft should be used on the machine for which it is designed. The shaft design is based on the data sheet and design parameter provided by you. Some of them are Reel Weight, Core ID, Minimum Reel Width, Tension and speed. The shaft will get damaged in case of using it for unplanned parameters.
2. Air Shaft needs 5 to 6 Bar (70 to 80 psi) air pressure. Make sure the line pressure is above the required pressure. It is also advisable to use FRL (Filter, Regulator and Lubricator) unit near Air Shaft. (There is a myth that if you fill more air, the rubber bladder will get punctured. In fact, fill as much air as possible to get better gripping.)
3. Air Shafts are designed for a particular web width or reel width. When the total width is not used as shown in Figure 1, do not operate the shaft with open lugs. Life of the rubber tube will deteriorate. In such cases, use the dummy core on the sides to cover remaining lugs as shown in Figure 2.

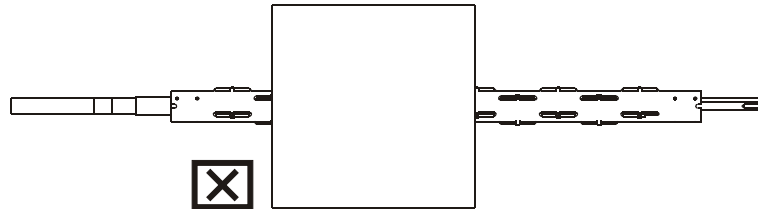


Figure 1: One Reel Mounted on the Shaft. Do not keep the Gripping Area open.

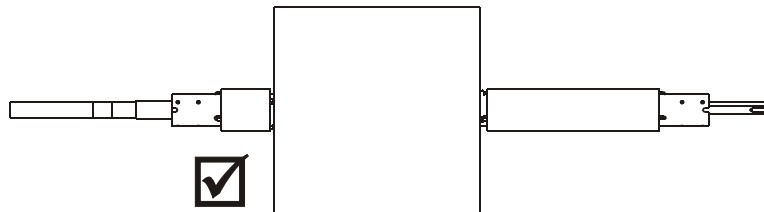


Figure 2: One Reel Mounted on the Shaft, sides cover with Dummy Core to avoid damage to Rubber Bladder.

4. To Grip the Core inflate the shaft: Press the Air Valve (NRV) by Air gun nozzle, shown in Figure 3. Press the Air Gun lever to the extent that the 5 - 6 Bar (70-90 psi) Air Pressure is developed in the bladder. For 3" Air Shaft, apply the air pressure for 45 seconds. For 6" Air Shaft, apply the air pressure for 80-100 seconds. Simpler solution is to count 1 to 50 for 3" shaft and 1 to 100 for 6" shaft, while filling air in the shaft. If you apply air for longer time, rubber bladder will not burst. In fact, it will give you better gripping.

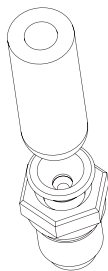


Figure 3: Air Gun Nozzle for Filling Air in the Air Valve. Keep it pressed for Air inflation.

5. To Release the Core. Deflate the Shaft; Press the top head of the Air Valve.



TROUBLE SHOOTING FOR AIR SHAFT:

1. During production, if you find the reel slipping over shaft, please check up following points:
 - a. Check the incoming line pressure. It has to be between 5 to 6 Bar (75-90psi). This can happen if enough Air is not filled in the shaft.
 - b. Check the Air Pressure inside the shaft. This can be done by applying Pressure gauge with nipple, similar to Vehicle tire check up. As mentioned above, a easier solution for operator is to count 1 to 50 for 3" shaft and 1 to 100 for 6" shaft, while filling air in the shaft.
 - c. After trying both A & B Solutions, if you still face the problem then check for the Non Return Valve (NRV). NRV might be leaking. For testing, fill the full air in the core holder and then fill the valve input area with water. The air bubbles will start coming near and around the NRV if the valve is leaking. Then, immediate replacement is needed. (Figure 4.)

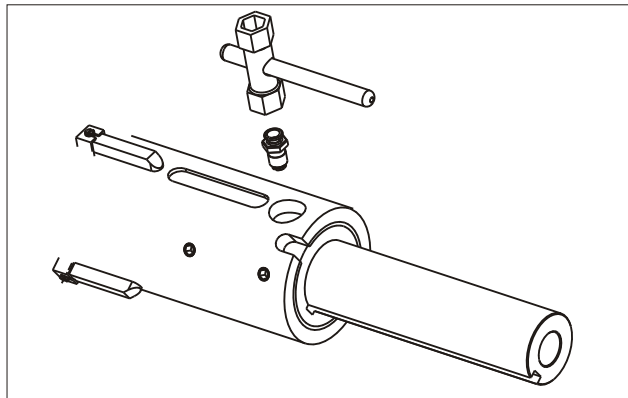


Figure 4: Checking Non Return Valve (NRV) With 19 X 22 Box Spanner

1. If leakage not found from NRV, then most probably internal O-Ring might have been damaged or rubber tube might be damaged. In that case, Air Shaft has to be opened.

OPENING OF AIR SHAFT:

1. First of all, hold the lugs (Rubber/Metal) with the help of M5 mm screws and holder. Tighten the lugs so that they do not fall down while disassembly. (Shown in Figure 5).

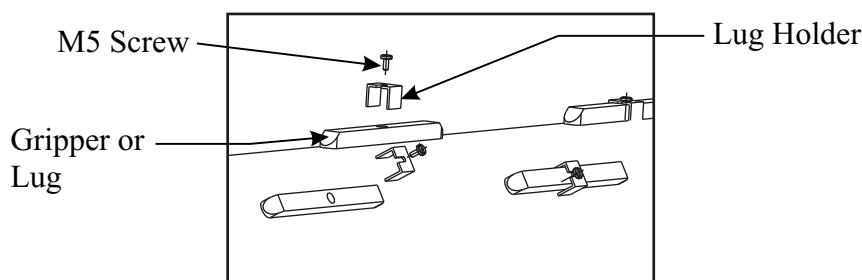


Figure 5: Lugs Are Being Held With Help Of M5 Screws And Lug Holders.



PART-1

OPENING OF AIR SHAFT

- 2 Remove the NRV (Air valve). If there is a 1/8" BSP Air Valve then use 12x13 box spanner; for 3/8" BSP use 19x22 box spanner. For applying extra force, you may use a Tommy bar. (Figure 6)

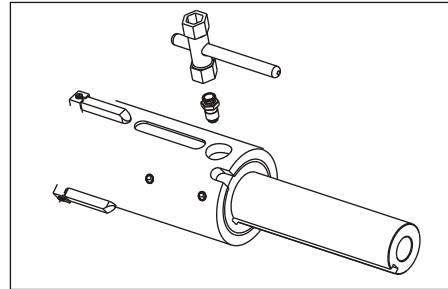


Figure 6: Loosen the Non Return Valve (NRV) With 12 X 13 or 19x22 Box Spanner and Tommy Bar

- 3 Then remove, 6 Nos. of Grub screws with Allen key from Air End. You may remove Dead End or Drive End similarly, if required.

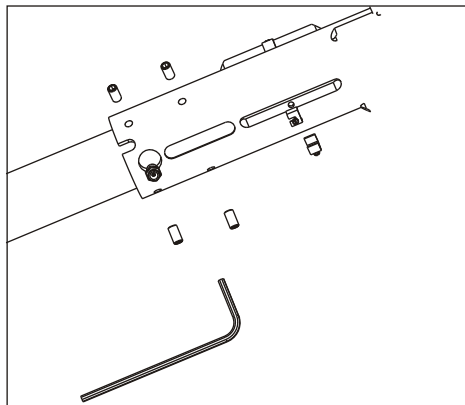


Figure 7: Grub screws are loosened with help of Allan Key.

- 4 Next step is to remove Air End Journal. End journal is fitted in the shaft in tight fit tolerance. Therefore, one has to hit it out of the shaft. For this reason, air shafts are provided with threaded holes at the end, generally 1/2" BSP, 1" BSP. The other sizes may be 12mm and 10mm. As shown in the figure 8, one should tighten the impact puller for hitting out the end journal (Even, one plate with appropriate hole would be good enough.) Impact puller is a dish or metal plate where one can hit hammer and apply enough force to remove the journal.

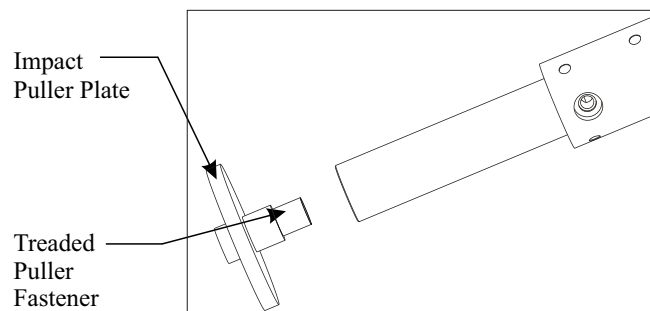


Figure 8: Impact puller to be tighten upon Shaft for hitting out of Air shaft.



5. Carefully, remove the Rubber Bladder by pulling it out of the shaft.
6. Observe the rubber tube carefully and check for the Puncture. This can be done by re-fitting the NRV back on the journal and applying air into bladder. Dip the air filled assembly into bucket of water. And check for the leakages.
7. Check for Leakages from locations :
 - 1) O-Ring check near NRV
 - 2) O-Ring check near Nipple (Shown in figure-9)
 - 3) Rubber Bladder
 - 4) Between rubber bladder & clamps
8. If you see the problem in rubber bladder, dis-assemble the bladder from clamp as shown in figure 9. Loosen the nut, then remove the end cap.

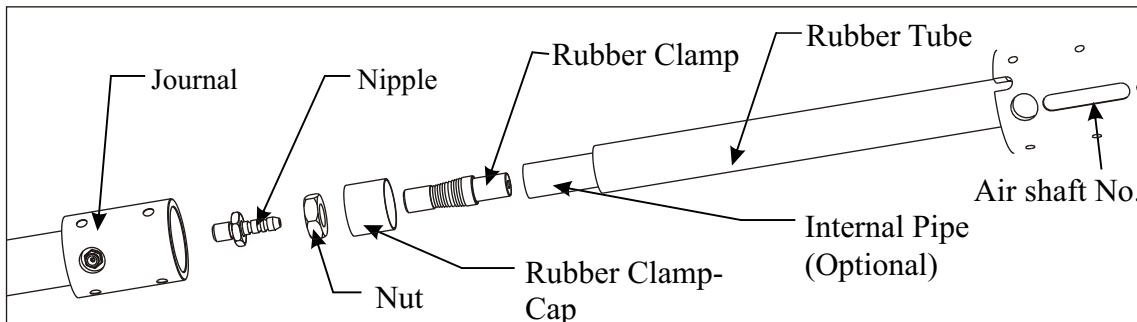


Figure 9: Loosening the Nut and removing clamp from bladder.

9. After studying the problem, if you need any damaged component including bladder. You can email, call or fax us the details. While informing, do give us the Air Shaft Number shown near the Air Valve. We maintain the stock of all items to serve you in the fastest way possible.
10. If you can not find Air Shaft no, please give us following information on the drawing (Shown in figure10) & we will supply the material.

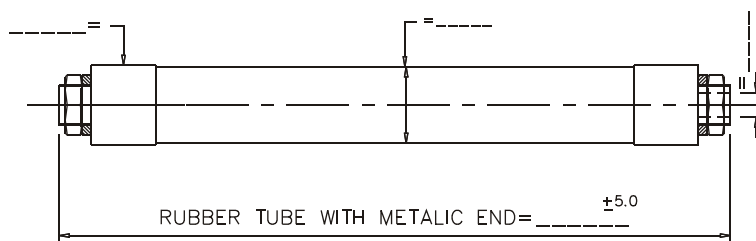


Figure 10: Rubber tube assembrdrawing for ordering

RUBBER TUBE ASSEMBLY:

As per your requirement, we supply the rubber tube with clamp.

1. First check the rubber tube length and compare it with the older one. Please make sure the length to be same. We generally send the bladder 15 - 25 mm longer. If the length is not maintained properly then there are chances of lugs staying out of pipe.



PART-1

SHAFT ASSEMBLY

2. Before assembly, clean all the parts like end clamp, cap, nut etc.
3. Then make a marking on bladder to decided how much of bladder should be inserted for proper fitting; make the marking on the tube.
4. Then insert the end clamp and keep threaded portion out side of the tube, then set the cap on the top and tighten as much as possible. Once the clamp has shifted up to the marking, then remove the nut and insert the spring washer and tighten it again. For this, you may need to hold it with help of Bench vice.
5. Once you feel, comfortable with tight clamps. Fill the air and check for leakage. Now, this assembly is ready for fitting.

SHAFT ASSEMBLY:

This procedure is almost reverse of disassembly.

1. Clean the Air end and check 'O' rings of nipple and replace if necessary. Fit the bladder on to Nipple.
2. Then insert the end journal and rubber tube assembly in shaft.
3. Then match the dowel pin into the slot. You will see all the Air Valve and Grub screw location being matched.
4. Before fitting the Air valve, check for the 'O' Ring of the valve. If you find it ok,

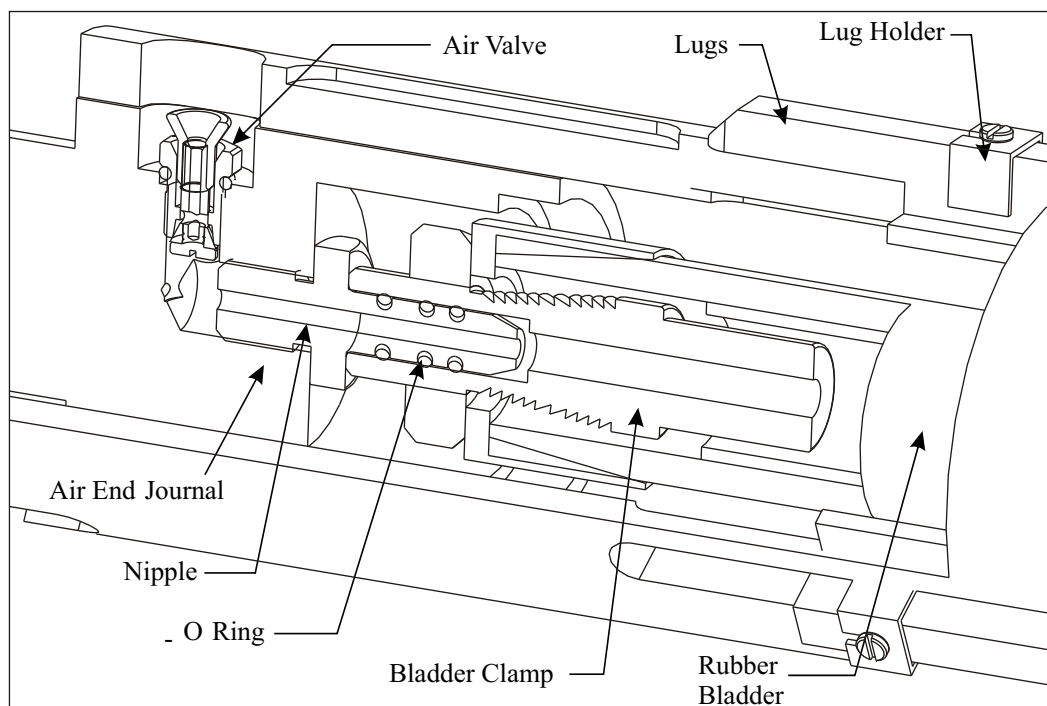


Figure 11: Air Shaft Cross Section with all components



Accessories Needed of Air Shaft Repairing :

Components	Size	Quantity Needed
Air Valve (NRV)	1/8" or 3/8" BSP	1
Box Spanner	12x13 mm or 19x22 mm	1
O Ring Air Valve	Based on NRV Size	2
Nipple	Based on Rubber Bladder Size	3
Tommy Bar	7 mm Dia	1
Lug Holders	For Holding 4 mm Screws	50
Allen Screws	M4 x 12 mm	50
Allen Key	3 mm	1
	4 mm	1
	5 mm	1
	6 mm	1
Fix Spanner	30 x 32 mm	1
Air Gun		1
Rubber Bladder with Clamps	21x31mm, 25x35 mm, 28x38 mm, 95x108 mm	

Important Notes

As you are the final user of our product, we appreciate your judgments in all the ways. We welcome your suggestions for improving our product design and durability. So, please feel free to call us up or inform our Sales & Service Engineer. We will be more than happy to incorporate your feed back.

Shaft No.: _____
Used On: _____
Resource Drawing No.: _____
Manufacturing Date: _____
Notes: _____



For Ordering Any Material or Any problem, contact us at

RESOURCE ENGIMECH (INDIA) PVT. LTD.:

459, Makarpura Ind'l Estate, Baroda 390 010, INDIA

Tele: +91 (0) 265 2632757, 2642718

Fax: +91 (0) 265 2638048

Email: info@resource.co.in