

MARK-3[®]

Field Maintenance Free Pump End Upgrade Kit

USER INSTRUCTIONS

Overview

WATERAX offers a Field Maintenance Free Pump End Upgrade Kit A-2358 (250243) that includes two key parts for upgrading older 12-16, 18-16 and 25-16 pump ends with the latest components: the sealed bearing and the reinforced rotary seal. These instructions will guide you through the process of upgrading an older pump.

ID	ITEM NO	DESCRIPTION	QTY
1	700044	12-48S DOUBLE ROW BALL BEARING WITH SEAL	1
2	700008	12-28NS MECHANICAL ROTARY SEAL	1
3	700994	DECAL-35 NO GREASE DECAL	1

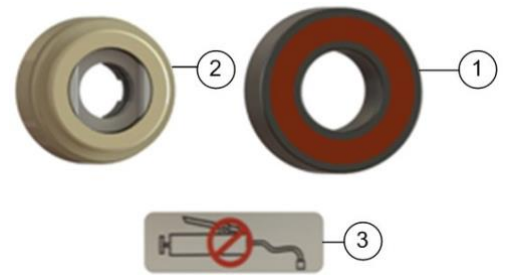


Figure 1: Field Maintenance Free Pump End Upgrade Kit A-2358 (250243)

Tools and Materials Required

Please note that additional items not included in this kit are required and can be purchased from **WATERAX**.

WATERAX Kit #	WATERAX Part #	Description	Qty
Field Maintenance-Free Pump End Upgrade Kit #250243	700044	12-48S DOUBLE ROW BALL BEARING WITH SEAL	1
	700008	12-28NS MECHANICAL ROTARY SEAL	1
	700994	DECAL-35 NO GREASE DECAL	1
Pump Replacement Parts Kit #250228, 250241 or 250228	800450	12-26 O-RING	1
	800363	12-27 O-RING	1-3
	800343	12-42 SCREW 1/4-28X3/4 SLOT FILLISTER NYLONLOCK SS	1
	800360	12-38 LOCKWASHER 1/4 SPLIT SS	9
	800364	12-25 SCREW #8-32X7/16 PHILLIPS FLAT NYLON LOCK SS	6
	600089	12-49 LOCKWASHER SS	1
Pump End Tool Kit #250125	700540	A-1884 PRESSING SLEEVE - DISTRIBUTOR	1
	600077	A-1886 PRESSING PIN FOR DISTRIBUTOR, STEEL	1
	600078	A-1887 ALUMINUM GUIDE FOR SHAFT INSTALLATION	1
	600079	A-1888 PULLER FOR SUCTION COVER, ALU. & PLATED	1
	700532	A-4097 PROTECTOR-SHAFT	1
	700531	A-4329 PRESSING SLEEVE - ROTARY SEAL	1
	700588	A-5297 SUPPORT TOOL	1
	700090	A-7644 SEAL PULLER FOR 12-28NS	1
	600052	B-4084 PUMP BEARING PRESSING SLEEVE	1
	600123	B-4085 PUMP BEARING EXTRACTOR TOOL	1
	700642	A-7711 SEAL REMOVAL PRESS TOOL, 12-28N	1
800084	R-904 WRENCH - SPARK PLUG	1	
Pump Body Drain Hole Drilling Jig kit #600102	600102	B-4086 PUMP BODY DRAIN HOLE JIG FOR SEALED BEARING	1
n/a	User supplied	Drill Press	1
n/a	User supplied	Arbor press	1

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Procedures

1. Uninstall the grease fitting 12-29 (800743) and extension 12-87 (700067) from the pump body.
Do not grease the sealed bearing. The grease fitting and extension must be removed from the pump body. This will help identify pump ends equipped with the sealed bearing and avoid unnecessary greasing, which may damage the rotary seal.
2. Install the no grease decal DECAL-35 (700994) over the grease fitting external hole. See Figure 2.



Figure 2: “No Grease” decal over grease fitting external hole

3. Create a drain hole.
Creating a drain hole in the pump body bearing cavity is essential. It will allow the water that "weeps" through the rotary seal to escape the bearing cavity. To drill the holes, you will require a 0.159" (4 mm) drill bit (drill #21).
4. Disassemble the pump end and remove all components inside the bearing cavity.
5. *If equipped with the Pump Body Drain Hole Drilling Jig (600102), proceed to Step 6.* Mark the location of the holes on the pump body using a punch. The holes should be at approximately 15° from the vertical line and at a distance of 1.000" from the pump body mating surface. See Figure 3. Proceed to Step 9 if you are not using the drilling jig.

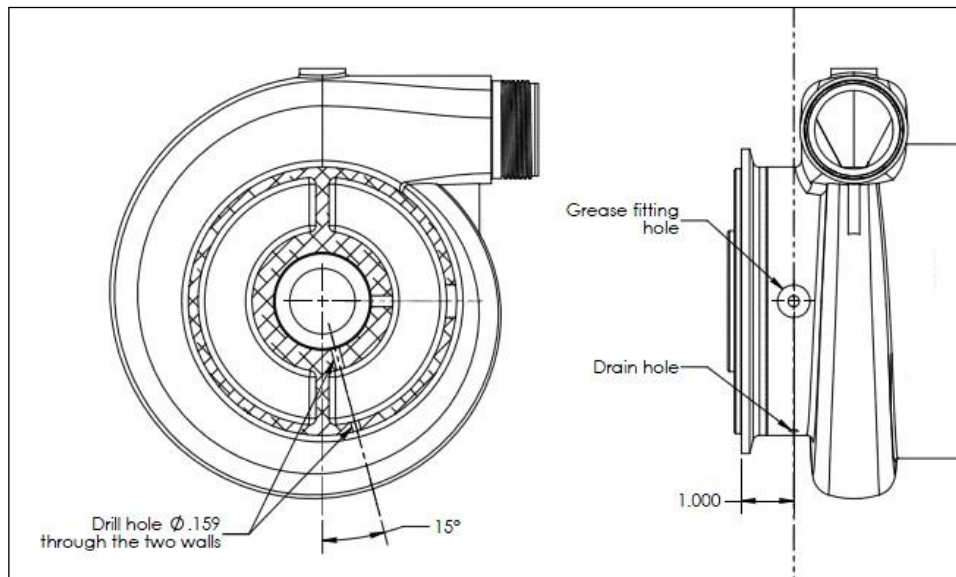


Figure 3: Location of drain hole

6. Put the Drilling Guide aside. Slide in the pump body on the Drilling Jig Pilot until pump body rests on the vertical support. See Figure 4.

USER INSTRUCTIONS

7. Rotate pump body until discharge rests on Stopper Tab. See Figure 5.

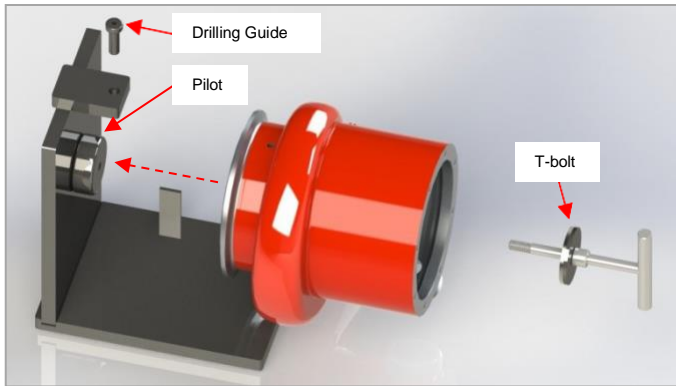


Figure 4: Slide in pump body

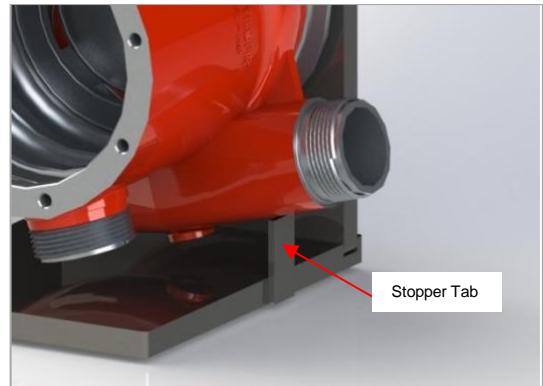


Figure 5: Rotate pump to Stopper Tab

8. Tighten the T-bolt to secure the pump body in place. Slide in the Drilling Guide. See Figure 6.

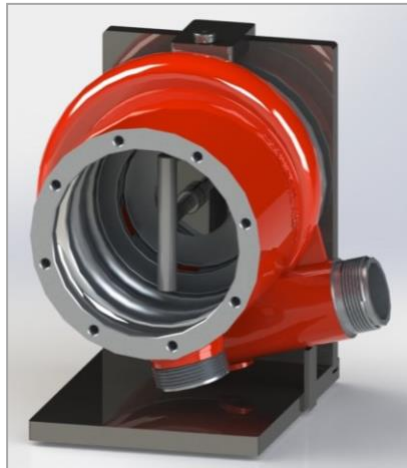


Figure 6: Slide in Drilling Guide and secure pump body by tightening T-bolt

9. Insert a 0.1592" drill bit in the drill press. Drill through the two walls. See Figure 7.

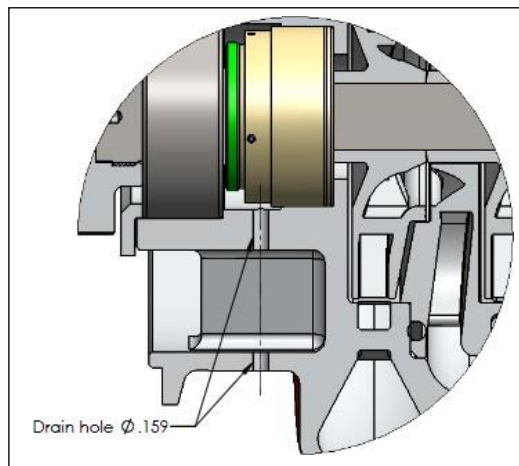


Figure 7: Section view of the drain hole

10. Deburr all holes. Ensure that pump body and bearing cavity are free of aluminum shavings or other debris.

USER INSTRUCTIONS

11. Install the new reinforced rotary seal.

- Ensure that bushing 12-4AS (700009) is removed and that the gasket is in place in the rotary seal before installing the new rotary seal.
- Press the rotary seal in pump body using the pressing sleeve A-4329 (700531).
- Carefully pass the end of shaft assembly through the rotary seal bore. Make sure that the flat sections of the shaft line up with the rotary seal flat sections.
- Gently press down the shaft until the ball bearing rests firmly against the shoulder in pump body.

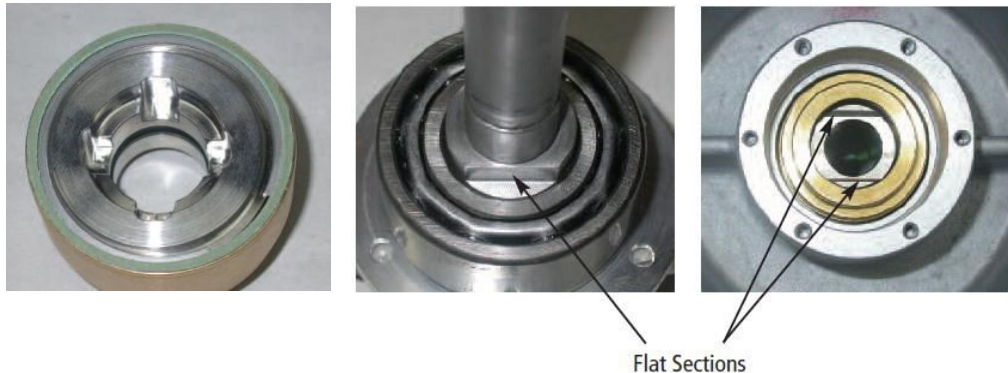


Figure 8: Gasket placement (left) and Shaft alignment (centre, right)

12. After installing the shaft, the rotary seal will feel a little tight. This is normal as the rotary seal has yet to be compressed. Once all the pump end components have been properly installed, the shaft will turn freely.

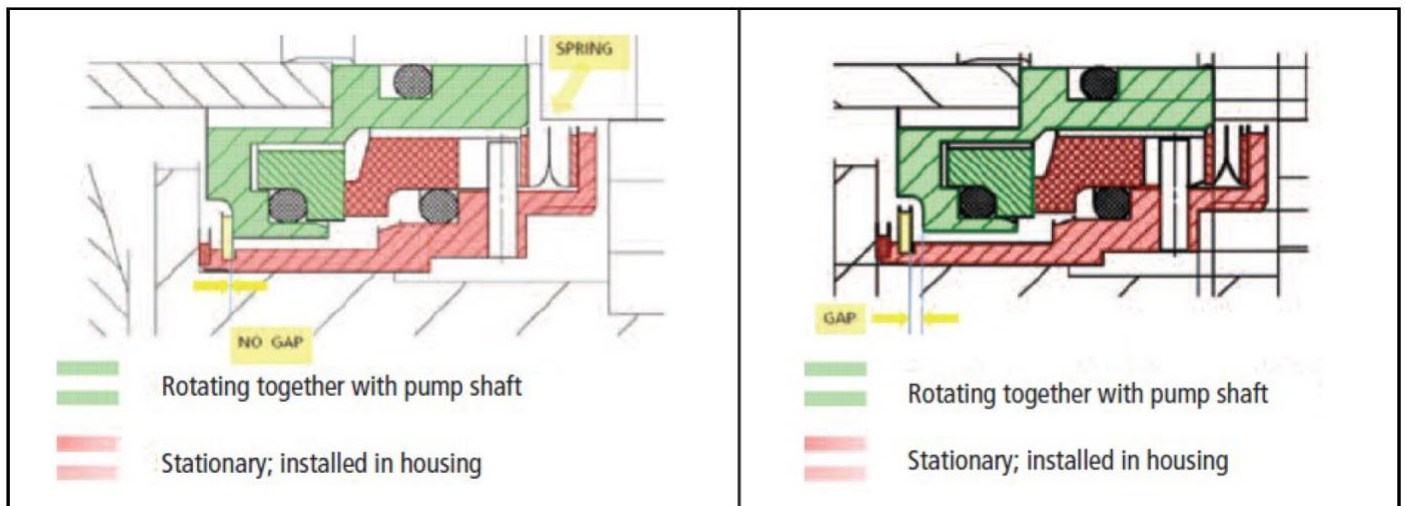


Figure 9: Prior to (left) and after (right) installing pump end components

13. Reassemble the pump end using the new sealed bearing. It is highly recommended that you change the O-rings and screws. For reassembly, simply follow the pump end assembly procedure located in your WATERAX Owner's Manual available for download from our website.

Impact on Field Use

Once the new sealed bearing and reinforced rotary seal have been installed, take care to treat your upgraded pump end appropriately. Do not grease pumps that have sealed bearings, and make sure that the greasing zerk is removed and that the drain hole is unobstructed.

Warranty, Service and Support

Product and service documentation such as tech notes, data sheets, manuals and information on the limited warranty provided on products manufactured by WATERAX can be found on our Web site at: www.waterax.com.



WATERAX

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To do so, we've established a network of trusted supply and distribution partners that can help us provide *WATERAX* pumps quickly in addition to water-handling equipment and accessories.

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