

Field Maintenance Free Pump End Upgrade Kit

WATERAX has made improvements to its line of high pressure pump ends in the past few years, particularly with the addition of a sealed bearing and reinforced mechanical rotary seal, both exclusive to **WATERAX**. All recent high pressure pumps and pump ends include these advancements. To integrate these latest innovations into older pump ends, **WATERAX** provides a Field Maintenance Free Pump End Upgrade Kit, instructions and tools to assist with the upgrade.



Field Maintenance Free Pump End Upgrade Kit (250243)

WATERAX
WE MOVE WATER®

USER INSTRUCTIONS

Field Maintenance Free Pump End Upgrade Kit

Overview:
WATERAX offers a Field Maintenance Free Pump End Upgrade Kit A-2502 (250243) that includes two key parts for upgrading older 12-16, 18-18 and 20-16 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.

ITEM NO.	DESCRIPTION	QTY
70004	12-16 DOUBLE ROW BALL BEARING WITH SEAL	1
70008	12-20S MECHANICAL ROTARY SEAL	1
70009	12-20S MECHANICAL ROTARY SEAL	1
70004	12-16 DOUBLE ROW BALL BEARING WITH SEAL	1

Figure 1: Field Maintenance Free Pump End Upgrade Kit A-2502 (250243)

Tools and Materials Required:
Please note that additional items not included in this kit are required and can be purchased from WATERAX.

WATERAX Part #	WATERAX Part #	Description	Qty
Field Maintenance Free Pump End Upgrade Kit (250243)	70004	12-16 DOUBLE ROW BALL BEARING WITH SEAL	1
	70008	12-20S MECHANICAL ROTARY SEAL	1
	70009	12-20S MECHANICAL ROTARY SEAL	1
	80400	12-20 O-RING	1
	80363	12-27 O-RING	1-3
Pump Replacement Parts Kit #250228 (25021 or 25022)	80363	12-42 SCREW IN 20X24 SLOT FILLER NYLON LOCK SS	1
	80360	12-38 LOCKWASHER 14 SPLIT SS	9
	80364	12-25 SCREW #8 12X17 16 PHILLIPS FLAT NYLON LOCK SS	6
	40089	12-42 LOCKWASHER SS	1
	70000	12-42 PRESSING SLAVE - DISTRIBUTOR	1
	80077	A-198 PRESSING PIN FOR DISTRIBUTOR, STEEL	1
	80078	A-197 ALUMINUM SLIDE FOR SHAFT INSTALLATION	1
	80079	A-198 PULLER FOR SUCTION COVER, ALU. & PLATED	1
	70012	A-430 PROTECTOR BRACKET	1
	70031	A-432 PRESSING SLAVE - ROTARY SEAL	1
	70038	A-527 SUPPORT TOOL	1
	70036	A-794 SEAL PULLER FOR 12-20S	1
	80062	8-60S PUMP BEARING PRESSING SLAVE	1
	80013	8-60S PUMP BEARING EXTRACTOR TOOL	1
	70042	A-771 SEAL REMOVAL PRESS TOOL, 12-20S	1
	80094	8-984 WRENCH - SPARK PLUG	1
Pump Body Drain Hole Drilling (p/n 180010)	80192	8-40S PUMP BODY DRAIN HOLE #10 FOR SEALED BEARING	1
NA	User supplied	Oil Press	1
NA	User supplied	Motor press	1

User Instructions

Benefits:

The reinforced mechanical rotary seal and sealed bearing provide numerous advantages over the older style rotary seal and open bearing:

Increased durability

The rotary seal's blister resistant carbon and silicon carbide seat provide increased resistance under partial dry running, lower weeping rates and improved overall reliability.

Ease of operation / Field maintenance free

The WATERAX sealed bearing, specifically matched to our high pressure pump end, does not require any greasing, greatly facilitating operations in the field. The grease and grease gun are no longer necessary. Moreover, the risk of damage due to over-greasing and under-greasing is completely eliminated.

Reduced complexity

The reinforced rotary seal fully incorporates the 12-4AS drive bushing, increasing the robustness of the seal and removing a component out of the pump assembly. Additionally, the grease extension and zerk are no longer required.

TECH-NOTE

1. Field Maintenance Free Pump End Upgrade Kit XX-16

The Field Maintenance Free Pump End Upgrade kit can be installed on older 12-16, 18-16 and 25-16 pump ends.

ID	ITEM NO	DESCRIPTION	QTY
-	250243	A-2358 FIELD MAINTENANCE FREE PUMP END UPGRADE KIT XX-16	-
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
-	700986	USER INST FIELD MAINTENANCE FREE PUMP END UPGRADE	1



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

The kit includes all the parts and instructions required for the pump end upgrade. Special tools and jigs are also available to facilitate the installation. The reinforced mechanical rotary seal and sealed bearing are fully retrofittable with existing pump ends; the only operation required is to drill a drain hole in the pump body.

2. A-2356 Tool Kit for Pump End XX-16

A pump end tool kit is available and contains special tools to facilitate the disassembly and assembly of the pump end. Tool A-7644 Seal Puller for 12-28NS (700090), which is required to remove the 12-28NS reinforced rotary seal, is included in the tool kit. All tools can be purchased separately.

ID	ITEM NO	DESCRIPTION	QTY
-	250125	A-2356 TOOL KIT FOR PUMP END XX-16	-
1	700588	A-5297 SUPPORT TOOL	1
2	600078	A-1887 ALUMINUM GUIDE FOR SHAFT INSTAL.	1
3	600157*	R-938 PULLER, CRANKSHAFT BEARING 1-PIECE	1
4	600175**	R-904L SPARK PLUG WRENCH C/W ROD	1
5	600079	A-1888 PULLER FOR SUCTION COVER, ALU.	1
6	600052	B-4084 PUMP BEARING PRESSING SLEEVE	1
7	700531	A-4329 PRESSING SLEEVE ROTARY SEAL	1
8	700532	A-4097 PROTECTOR SHAFT	1
9	700642	A-7711 SEAL REMOVAL PRESS TOOL, 12-28N	1
10	801299	INSTALLER BUSHING BEARING	1
11	700540	A-1884 PRESSING SLEEVE DISTRIBUTOR	1
12	700090	A-7644 SEAL PULLER FOR 12-28NS	1
13	701345	PRESS PIN REMOVAL TOOL PUMP PARTS DIA .686	1
14	600080	A-1890 PRESSING PIN FOR SHAFT REMOVAL	1
15	600077	A-1886 PRESS PIN REMOVAL TOOL PUMP PARTS DIA .925"	1

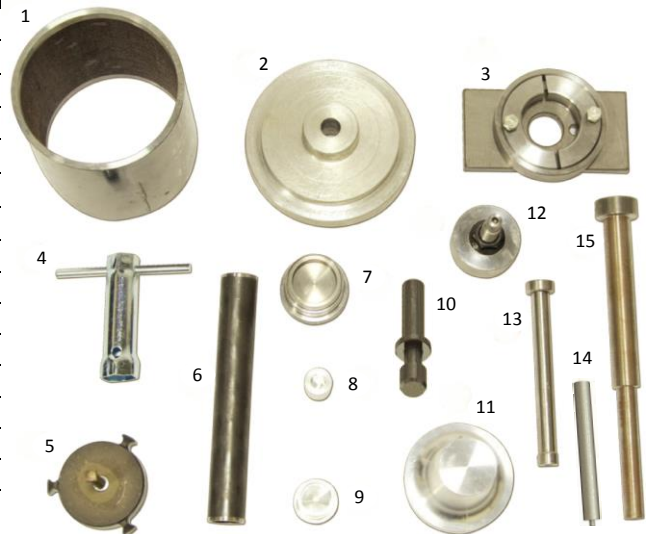


Figure 2: A-2356 Tool Kit for Pump End XX-16 (250125)

*600157 has replaced 600123 (B-4085).

**600175 contains 800084 (R-904) and 800082 (R-905)



Figure 3: A-7644 Seal Puller for 12-28NS (700090)

3. Pump Body Drain hole Jig for Sealed Bearing

When installing the new sealed bearing in an older pump, a drain hole **must** be drilled in the pump body to allow the water that “weeps” through the rotary seal to escape the bearing cavity. This drain hole must be drilled at a precise location. A special jig is available to assist in drilling the drain hole and ensure that the hole is drilled safely and at the right position every time. The jig includes a 6” long drill bit.

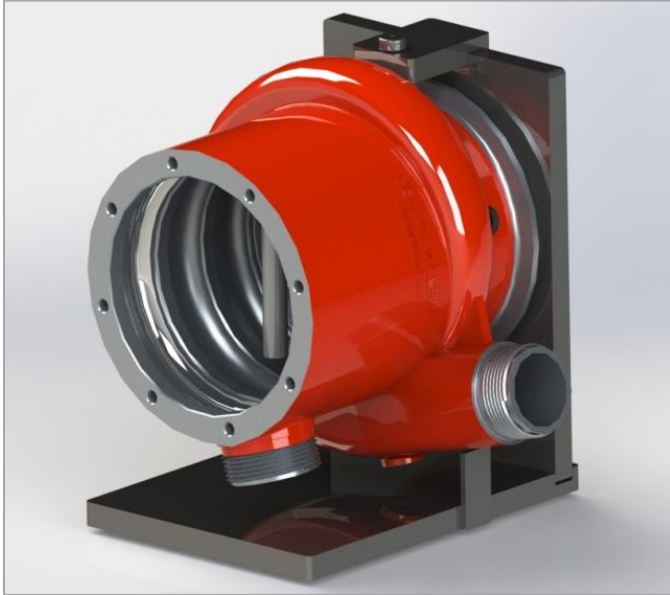


Figure 4: B-4086 Pump Body Drain Hole Drilling Jig For Sealed Bearing (600102)

4. Repair Kits XX-16

Pump end repair kits include all the pump end parts that should be systematically replaced when doing maintenance on the pump end. The kits include replacement O-rings, lockwashers and nylon lock screws.

ID	ITEM NO	DESCRIPTION	QTY
-	250228	1216RK1 REPAIR KIT 12-16	-
-	250241	1816RK1 REPAIR KIT 18-16	-
-	250227	2516RK1 REPAIR KIT 25-16	-

For pump end overhaul procedures, please refer to the pump Owner’s Manual.