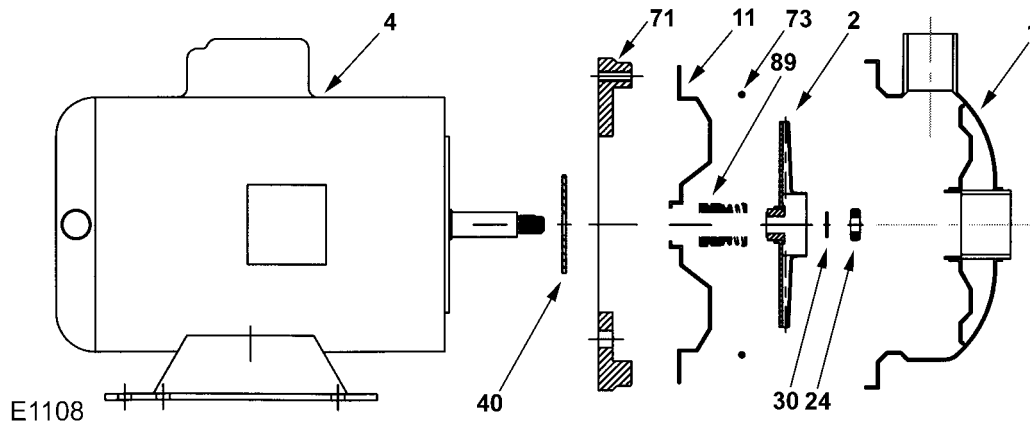


4.2 PUMP MAINTENANCE MODELS: DN, DO, DR, DT, DU, DW, DY, DZ, HT

4.2.1 EXPLODED VIEW DRAWING

REF. NO.	QTY.	DN 3 HP	DO 5 HP	DR 1.5 HP	DT ¾ HP	DU 5 HP	DW 3 HP	DY 1.5 HP	DZ ¾ HP	HT ¾ HP	DESCRIPTION	PART #
1	1									✓	CASE 1.25 x 1 NPT	018266
	1	✓		✓	✓		✓	✓	✓		CASE 1.25 X 1 NPT	018268
	1		✓			✓					CASE 1.5 x 1.25 NPT	018267
2	1				✓				✓	✓	IMPELLER 4.88", STAINLESS	018275
	1			✓				✓			IMPELLER 5.25", STAINLESS	018276
	1	✓					✓				IMPELLER 6.3", STAINLESS	018277
	1		✓			✓					IMPELLER 6.3", STAINLESS	018342
4	1	✓	✓	✓	✓	✓	✓	✓	✓	MOTOR 56J	CONSULT FACTORY	
11	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	COVER, STAINLESS	018269
24*	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	NUT	018270
30*	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	D-WASHER	018371
40*	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	FLINGER	018272
71	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	DISC IRON	018273
73*	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	GASKET, CASE	018274
89*	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	SEAL, 5/8"	IN REPAIR KIT

* - DENOTES COMPONENTS INCLUDED IN REPAIR KIT 018246.



4.2.2 SEAL REPLACEMENT / MAINTENANCE

WARNING: MAKE CERTAIN THAT THE SYSTEM IS DISCONNECTED FROM THE POWER SOURCE IN COMPLIANCE WITH ALL LOCAL AND NATIONAL CODES BEFORE ATTEMPTING TO SERVICE OR REMOVE ANY COMPONENTS. NEVER RUN THE PUMP WHEN DRY.

MAINTENANCE:

1. Inspection - Pump should be periodically checked for proper operation. If the system has changed or if the pump is operating noisily or erratically, then the pump should be removed and examined. It should be repaired and parts replaced as necessary.
2. Cleaning - Remove oil, dust, dirt, water, chemicals from exterior of pump and motor. Blow out interior of open motors with clean compressed air at low pressure. Regularly drain moisture from TEFC motors.
3. Draining - If the pump is located in an area subject to freezing temperatures, the pump must be drained when not in operation or add sufficient antifreeze.

SEAL RELACEMENT:

1. Disassembly
 - a. Turn off power.
 - b. Close suction and discharge valves (If equipped).
 - c. Drain pump.
 - d. Remove bolts holding base to foundation.
 - e. Remove casing bolts.
 - f. Remove motor and rotating element from casing, leaving casing and piping undisturbed, if possible. If not, then remove the whole assembly.
 - g. Insert a screwdriver in one of the impeller waterway passages and back off the impeller nut (Ref 24).
 - h. Remove motor shaft end cap. Insert a screwdriver in slot of motor shaft. While holding shaft against rotation, unscrew impeller (Ref 2) from shaft by turning counterclockwise when facing impeller.
 - i. Pry off rotating member of mechanical seal from motor shaft by using two (2) screwdrivers. Be careful not to damage the pump cover (Ref 11).
 - j. Remove pump cover (Ref 11 & 71) from cast iron disc. (There is no hardware used to attach cover to disc.) Place cover on a flat surface with convex side down. Push out stationary member of mechanical seal. It is not necessary to remove the cast iron disc from the motor to replace the seal.

4.2.2 SEAL REPLACEMENT / MAINTENANCE CONT.

2. Reassembly

CAUTION: The mechanical seal is a precision product and should be handled accordingly. Use care when handling lapped running surfaces of the mechanical seal to ensure they remain clean and are free of chips or scratches.

- a. Clean gasket and flange faces, seal seat cavity and shaft, in particular, shaft shoulder fitting against impeller.
- b. Lubricate the seal seat cavity of the cover and the rubber cup or O-ring of stationary seal seat with the lubricating fluid that comes with the mechanical seal or repair kit. Press the stationary seat in seal seat cavity in the cover squarely and evenly using an arbor press (if possible) and the cardboard disc supplied with the seal. Be certain that the lapped face (shiny side) is facing you.
- c. Position the cover (Ref 11) so that the convex side with the lapped seal seat is facing you. Place the cover on the motor disc and align the holes in the disc with the holes in the cover. (Note: There isn't any hardware required to attach the cover to the motor disc.)
- d. Apply the lubricating fluid that comes with the mechanical seal or repair kit to the motor shaft and the rubber bellows of the rotary seal. Slide the seal head on the shaft; press the rubber drive band on the rotary head until the lapped face on the head seats firmly against the lapped face of the stationary seat. Install seal spring on head and seal spring retainer on spring. Do not chip or scratch faces during installation. Take extra care to make sure the lapped faces are clean.
- e. Hold shaft against rotation as described in paragraph (h) of disassembly procedure, then thread impeller on shaft until it is tight against the shaft shoulder. The impeller will compress the seal spring to the proper length assuring correct pressure on lapped faces.
- f. Replace D-washer (Ref 30) and impeller nut (Ref 24) holding impeller against rotation as indicated in paragraph (g) of disassembly procedure (2 & 3 hp 1 ph, and all 3 ph motors only).
- g. Remove any burrs caused by screwdriver on the vane of impeller in waterway passages.
- h. Replace motor and rotating element in casing. Be sure that any damaged O-rings are replaced.

-or-

- i. If whole assembly was removed install O-ring on cover. Be sure that any damaged O-ring is replaced.

4.2.2 SEAL REPLACEMENT / MAINTENANCE CONT.

2. Reassembly Cont.

- j.** Position case (Ref 1), cover (Ref 11), and motor disc (Ref 71) so the holes line up. Install socket head cap screws through the case and cover and thread into motor disc. Tighten all cap screws alternately and evenly until finger tight.

-or-

When whole assembly is removed place pump casing against pump cover. Ensure that impeller eye is centered in pump case and position case, cover and motor disc so that the holes line up. Install socket head cap screws through the case and cover, thread into motor disc. Tighten all cap screws alternately and evenly until finger tight.

- k.** Finish tightening the cap screws alternately and evenly to approximately 6 ft. lbs. torque. Note: It is imperative that screws be tightened alternately and evenly, as this action centers the cover in the casing, assuring proper alignment. Binding of the impeller in the case and adaptor may occur if the cap screws are not tightened as listed above.
- l.** Replace hold-down bolts.
- m.** Check for free rotation after assembly is completed.
- n.** Replace motor shaft end cap.
- o.** Seal all drain openings using pipe sealant on threads.
- p.** Re-prime before starting. Do not start until pump is completely filled with water.