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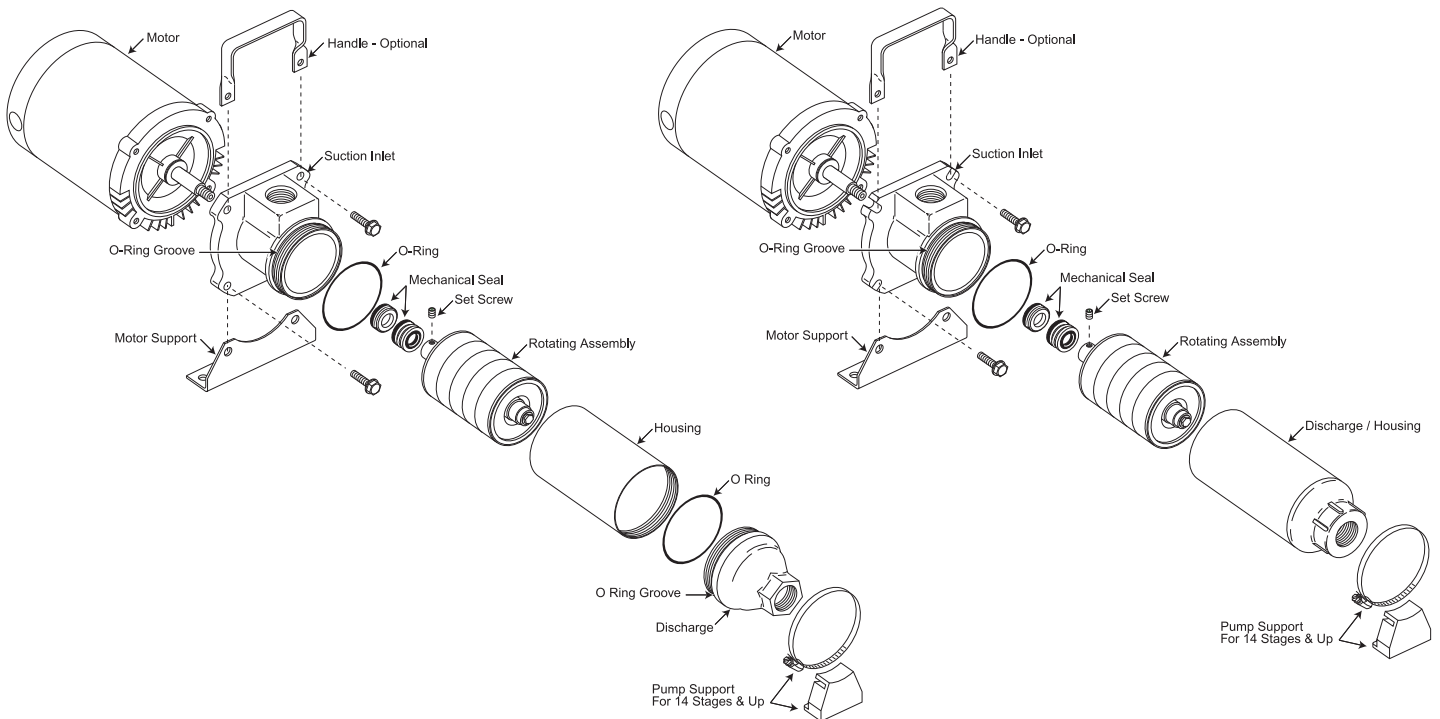
EZ Series

Cast Iron and Stainless Steel Booster Pump

Maintenance & Repair Manual

Cast Iron

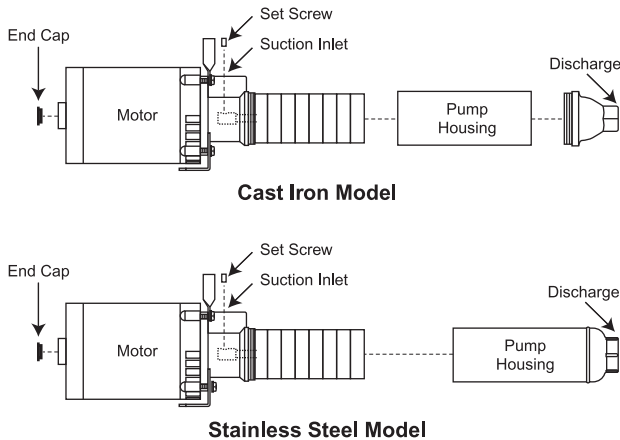
Stainless Steel



The following information applies to both cast iron and stainless steel models 1/2 - 3 HP.

Warning: Always disconnect the electrical supply prior to servicing the pump.

Removal Of Rotating Assembly (RA)



Proceed as follows:

1. Date code: 7-93 to present -

Cast iron - Rotate discharge clockwise (left hand threads) while holding pump housing with a strap wrench. Then, remove the pump housing by rotating it clockwise with a strap wrench.

Stainless steel - Rotate welded discharge/pump housing clockwise (left hand threads) with a strap wrench.

Date code: Prior to 7/93 - Rotate discharge counter - clockwise (right hand threads)

2. Loosen set screw in pump shaft coupling.

3. Remove motor end cap located at the rear of the motor to expose the motor shaft.

4. Remove the hex head screw located at the end of the pump shaft by rotating it counter - clockwise. Hold the end of the exposed motor shaft with a screwdriver or 7/16" open end wrench to prevent rotation.

5. Remove the top diffuser (brass or rulon bearing) and SS shaft bearing.

6. To remove the rotating assembly rotate the hex pump shaft with a 7/16" open end wrench in a counter - clockwise direction while preventing the exposed motor shaft at the rear of the motor from rotating.

Note: The bottom plate must be removed prior to installing the new rotating assembly.

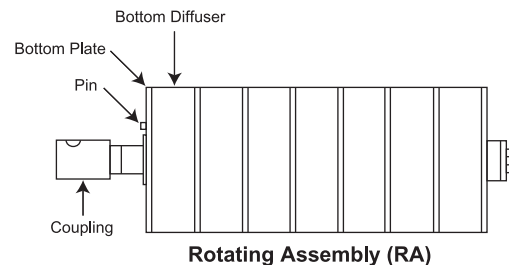
Warning: A 316 SS spacer was installed on pumps with date codes of 4/96 - 6/98. This spacer must be removed when replacing the rotating assembly, otherwise the pump will go into upthrust and fail immediately!

Installation Of Rotating Assembly (RA)

1. A) Cast iron models - Slide a new o-ring over the threads on the suction inlet and discharge. Position it in the groove up against the shoulder and lubricate the o-ring with a FDA approved lubricant. Lubricate the threads on the suction inlet and discharge with Anti-Seize Lubricating Compound (Part # 41003) or equivalent.

B) Stainless steel models - Repeat item 1.A for the suction inlet.

2. Position the bottom plate of the rotating assembly against the bottom diffuser. When properly installed, you will be able to feel a raised hub and a 1/8" diameter pin on the surface opposite the part number.



Note: If improperly installed, a 1/8" gap will exist between the bottom plate and diffuser.

3. Screw the pump shaft coupling onto the motor shaft (clockwise direction) until the shaft coupling has bottomed out against the shoulder on the motor shaft. To do this, hold the exposed motor shaft at the rear of the motor and rotate the hex head screw located at the end of the pump shaft in a clockwise direction with a 7/16" socket.

4. Cast iron models, Rotate the pump housing counter clockwise (left hand threads) onto the suction inlet until the pump housing contacts the shoulder on the suction inlet. Tighten with a strap wrench.

Screw the discharge counter clockwise (left hand threads) into the pump housing until the discharge bottoms out against the pump housing.

Stainless steel models - Rotate the discharge / pump housing counter clockwise direction (left hand threads) onto the suction inlet until the discharge / pump housing bottom out against the suction inlet. Tighten with a wrench.

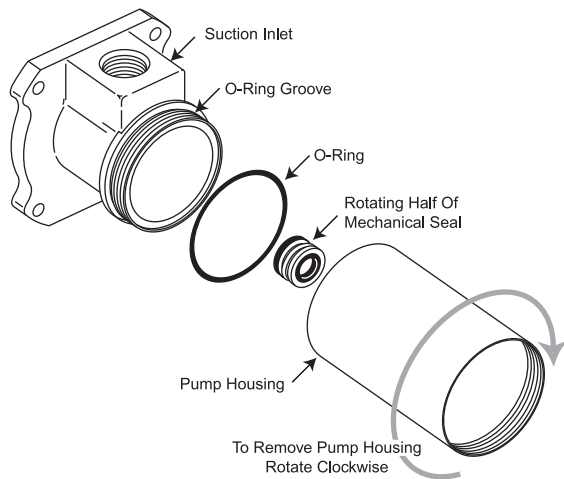
5. Tighten set screw in the pump shaft coupling.

6. Insert a 7/16" socket into the discharge and rotate the hex head cap screw (clockwise direction) to make sure that the rotating assembly rotates freely. If the rotating assembly is hard to turn, repeat the removal and installation procedures until the rotating assembly rotates freely.

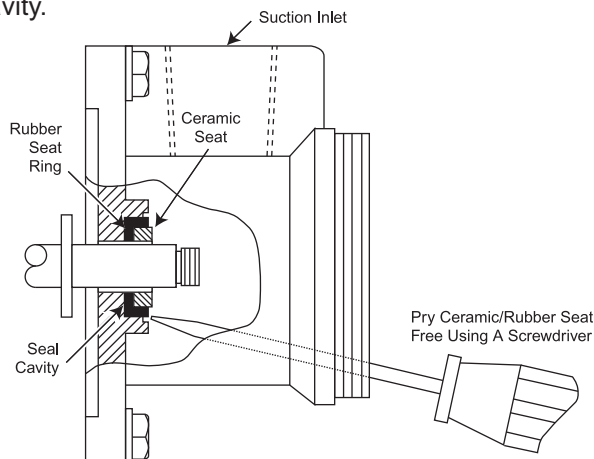
Mechanical Seal Replacement

1. Follow instructions under "Removal of Rotating Assembly."

2. Remove the rotating element of the seal (carbon ring, seal, and spring) by grasping the element and pulling/twisting it off the motor shaft.



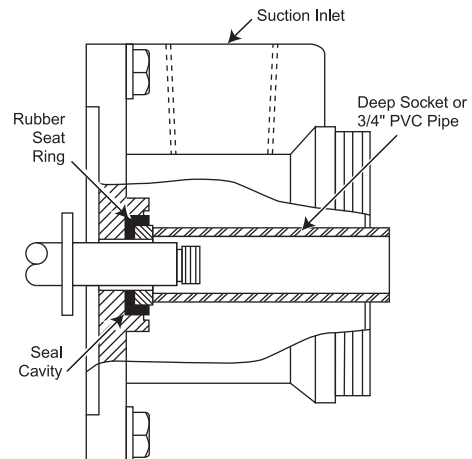
3. Use a screwdriver to remove the ceramic seat and rubber seat ring from the seal cavity as shown. Be careful not to damage sealing surfaces on the seal cavity.



Mechanical Seal Installation

1. Clean seal cavity, removing all rust and scale.

2. **A)** Lightly lubricate the rubber seat ring with mineral oil. Using a 3/4" socket or piece of 3/4" PVC pipe, press ceramic seat firmly and squarely into the seal cavity. Be sure the seal face is not damaged during assembly (cracked, scratched, or chipped) or the seal will leak.

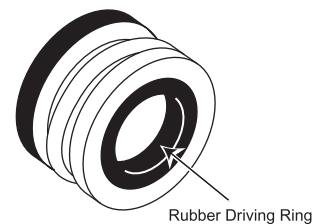


B) Clean polished surface of ceramic seat with a soft cloth or tissue to remove all dust and grit.

C) Inspect motor shaft to make sure it is clean.

D) To prevent slip-stick lightly lubricate both the ceramic and carbon seal face with mineral oil. Do not let oil get on to the motor shaft or the rubber driving ring of the mechanical seal.

E) For ease of assembly lubricate the driving ring on the mechanical seal with water. By hand carefully press the rotating seal assembly onto the motor shaft. The carbon seal face must contact the ceramic seal face. The driving ring must seal against the motor shaft.

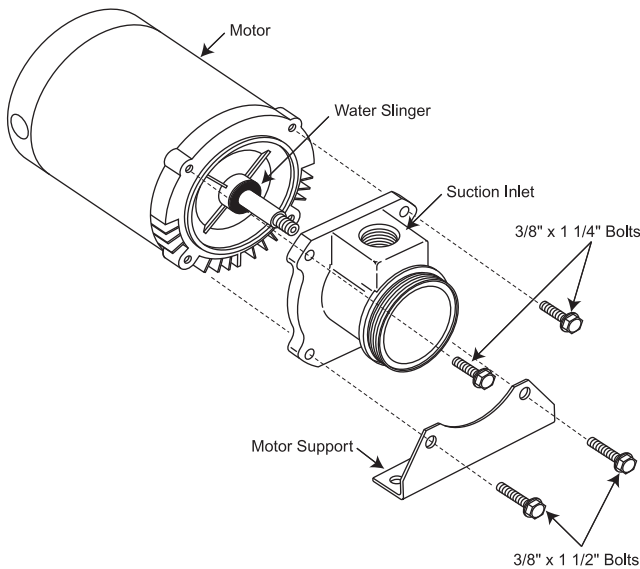


3. To reassemble the rotating assembly refer to Installation of Rotating Assembly (RA)

Removal Of Motor

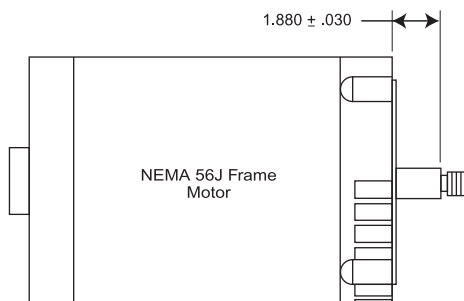
Warning: Always disconnect the electrical supply prior to servicing the pump.

1. Refer to "Removal of Rotating Assembly" (RA)
2. Refer to "Mechanical Seal Replacement" instruction 2.
3. Remove the (4) 3/8" bolts that attach the suction inlet and motor support to the motor.
4. Pull the suction inlet and motor support away from the motor.



Installation Of Motor

1. Measure the length of the motor shaft from the mounting surface of the motor to the shoulder of the motor shaft that butts up against the pump shaft coupling. This dimension should be $1.880 \pm .030$.

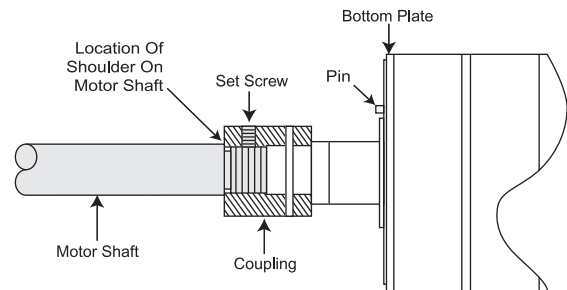


2. Inspect shaft to make sure it is clean.
3. Slide the water slinger over the shaft, as far back as possible.
4. Make sure the motor vents are on the bottom, before fastening the suction inlet and motor support to the motor with (4) 3/8" bolts. The two 3/8" x 1 1/2" bolts are used for fastening the motor support.
5. Refer to "Mechanical Seal Installation" and "Installation Of Rotating Assembly" instructions 1-6.

Final Inspection

1. After reassembly, rotate the pump shaft. It should be free enough to be turned by hand. To do this, insert a 7/16" socket into the discharge and rotate the hex head cap screw clockwise.
2. If you can turn the shaft with minimum effort, the booster pump is operable. If you cannot rotate the pump shaft or feel a drag as you turn the pump shaft, check the following for improper installation.

A) The coupling on the pump shaft must be screwed tightly against the shoulder on the motor shaft.



Rotating Assembly (RA)

B) The bottom plate must be installed properly. See Installation of Rotating Assembly, instruction 2.

C) The pump housing must be firmly tightened against the shoulder of the suction inlet and discharge.

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