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HYPRO Centrifugal Pump Seal Repair Kit

Form L-0374C 12/10

Kit No. 3430-0589
Seal kit for Series 9200, 9300 and 9400 cast iron and stainless steel centrifugal pumps. Silicon carbide seal.

Kit No. 3430-0590
Seal kit for Series 9000P polypropylene centrifugal pump. Silicon carbide seal.

Kit No. 3430-0591
Seal kit for Series 9000 cast iron centrifugal pump. Silicon carbide seal.

Kit No. 3430-0593
Seal kit for Series 9300P, 9400P and 9500P polypropylene centrifugal pumps. Silicon carbide seal.

GENERAL SAFETY INFORMATION

1. **WARNING: DO NOT PUMP FLAMMABLE OR EXPLOSIVE FLUIDS SUCH AS GASOLINE, FUEL OIL, KEROSENE, ETC. DO NOT USE IN EXPLOSIVE ATMOSPHERES. COMPONENTS NOT RATED FOR USE WITH ANHYDROUS AMMONIA. THE PUMP SHOULD BE USED ONLY WITH LIQUIDS COMPATIBLE WITH THE PUMP COMPONENT MATERIALS. FAILURE TO FOLLOW THIS WARNING CAN RESULT IN PERSONAL INJURY AND/OR PROPERTY DAMAGE AND WILL VOID THE PRODUCT WARRANTY.**
2. Be sure all exposed moving parts, such as PTO shafts and adapters, are properly shielded or guarded and that all coupling devices are securely attached before applying power.
3. Pumps mounted directly onto PTO shaft or other power shaft must be prevented from rotating with the power shaft. Pump must float freely on the power shaft and must not be tied rigidly to equipment on which it is mounted.
4. **DO NOT EXCEED** recommended speed, pressure and temperature for pump and equipment being used.
5. **BEFORE SERVICING**, disconnect all power. Make sure all pressure in the system is relieved. Drain all liquids from the system and flush.
6. Secure the discharge lines before starting the pump. An unsecured line may whip, causing personal injury and/or property damage.
7. Check hose for weak or worn condition before each use. Make certain that all connections are tight and secure.
8. Periodically inspect the pump and the system components. Perform routine maintenance as required.
9. Protect pump from freezing conditions by draining liquid and pumping rust inhibiting antifreeze solution through the system, coating the pump interior.
10. Use only pipe, hose and fittings rated for the maximum PSI rating of the pump.

For more detailed information on the repair procedures for Hypro Centrifugal Pumps, please refer to Hypro Form Nos. L-0300AG, L-0310C, or L-1526 that was shipped with your pump. If you do not have a copy of these forms and would like to get one, please call your local dealer or Hypro at (651) 766-6300 and ask for the Customer Service Representative for your area.

DISASSEMBLY AND ASSEMBLY INSTRUCTIONS

Always flush pump with water or neutralizing agent before servicing.

Disassembly

In most cases, seal replacement requires disassembly of only the pump half of the unit.

NOTE: Instructions following in *[italics]* describe procedures for the polypropylene centrifugal pumps when different than the cast iron pumps.

1. Remove the four casing cap screws with 9/16" box end wrench. Tap pump casing on discharge port with rubber hammer, if necessary, to break loose from mounting flange. Check inside of pump casing including suction port. If badly eroded [or damaged], pump casing should be replaced. Remove o-ring and discard. O-ring should always be replaced. *[Using a 1/2" wrench, remove the six bolts from the front. Also remove the 5/16" screw from the rear near the outlet port].*
2. To remove the impeller nut, clamp the flange in a vise and insert a large screwdriver or file (at least 10" long) into impeller vanes to prevent impeller from turning when loosening nut. Use a socket wrench (3/4" for Series 9000C or 5/8" for Series 9200C and 9400C) to remove the impeller nut by turning it counterclockwise. *[Use 7/8" deep socket wrench to remove plastic seal nut, then 9/16" deep socket to remove metal jam nut, rubber gasket and washer].*
3. Once nut *[and washer]* is removed, place a screwdriver on each side behind the impeller and pry away from the mounting flange. Remove key from the shaft. Remove o-ring from the mounting flange.
4. Using two screwdrivers positioned opposite each other, pry the rotary portion of the seal from the shaft.
5. *[Remove plastic back cover flange. Knock seal out from back with a hammer and screwdriver].*
6. Remove stationary seat and boot by prying out with two small screwdrivers in manner similar to impeller removal. If the pump is equipped with a silicon carbide seal, it may be

necessary to destroy the stationary seal seat with a punch or chisel for removal. Silicon carbide material is very brittle and will crack easily. **(Caution: The seal will be damaged from removal. A new seal MUST be used when pump is reassembled).**

7. Use a circular bottle-type wire brush to clean the pump ports and seal areas. It is also recommended that the pump casing and mounting flange be further cleaned in a solvent tank to remove rust and corrosion particles. *[Do not wire brush seal bore and ports on poly models].*

Assembly

Be extremely careful with the new seal. Silicon carbide material is very hard, but also very brittle. If the seal is accidentally dropped and hits a hard surface, the seal's primary ring (rotary part) and mating ring (stationary seal seat) can be damaged. Also take precautions not to introduce dirt or grit to the seal surfaces.

1. Inspect seal seat cavity to be sure it is clean and without debris. Foreign material at the bottom of the seal seat bore can cause the mating ring to be slightly cocked. The primary ring running on a cocked mating ring at 4500 RPM will chatter and shorten its seal life.

IMPORTANT: Make sure seal cavity is clean and lubricated.

2. Lubricate mating ring and seal seat cavity in mounting flange with detergent or lubricant for rubber to aid in smooth installation of mating ring.

   Install mating ring in casting with o-ring face down.

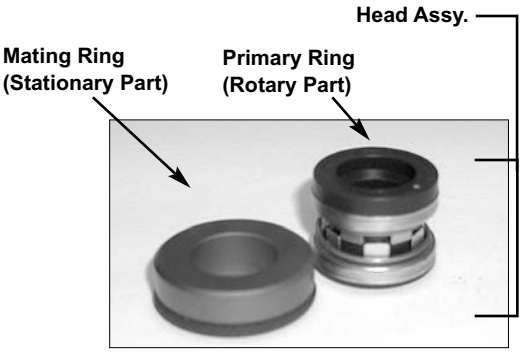
3. Press mating ring into seal cavity using a nylon or soft tool using uniform hand force. Seal will pop into place and bottom out once o-ring has slipped inside the leading edge of the seal seat cavity.
4. Next, place head assembly on shaft with primary ring (rotary part) positioned toward the mating ring. Slide the head assembly towards the mating ring until it bottoms out against the mating ring.

IMPORTANT: Do not lubricate shaft prior to installation of the rotary seal.

5. Do not re-install the rubber gasket (P/N 1700-0100) that was used with the 2120-0009 and 2120-0032 seal if your pump was originally equipped with one. The silicon carbide seal in this kit does not require a gasket. Re-installing the gasket will over compress the new seal causing damage.

IMPORTANT: Observe lettering on back side of the seal head and a green dot indicating viton material. This surface is seated against the impeller and provides positive engagement with the shaft. Reversing the seal head assembly will result in seal failure.

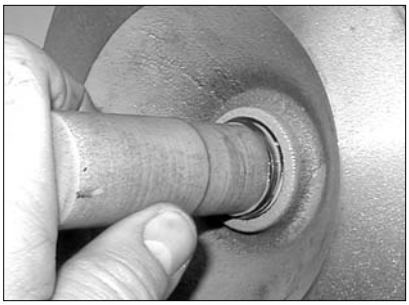
6. Insert key into shaft slot. Place impeller on shaft. Put impeller acorn nut *[washer, jam nut and gasket on poly pumps]* on shaft end, and using a screwdriver or file inserted into impeller vanes for support, tighten impeller nut securely.
7. Install o-ring on mounting flange. Replace o-ring if worn or damaged.
8. Place pump casing cover on mounting flange, insert and tighten bolts evenly.



Silicon Carbide Mechanical Seal: Viton, 5/8" Diameter



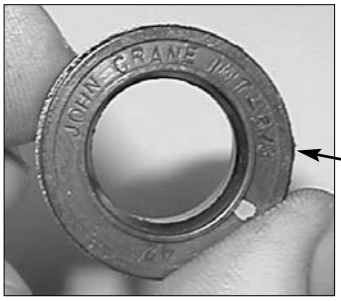
Step 2



Step 3



Step 4



This side mates against the impeller.

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