



## **3" Cast Iron Wet Seal 301 Series Pump Instruction Manual**

301PIH13W, 301PBIW,  
301POIW

Read these instructions and the instructions covering the operation of the pump drive unit. Do not operate the gas engine (if so equipped) until you have put oil in the engine. Do not operate the wet seal pump until you have filled the wet seal reservoir  $\frac{3}{4}$  full (the seal assembly should be submerged) with a 50% ethylene glycol (anti-freeze) and 50% water mixture.

Check the coolant mixture level in the wet seal reservoir after every 5 hours of use, fill reservoir as necessary. Check oil level in the gas engine (if so equipped) after every 5 hours of use, fill reservoir as necessary. Change coolant mixture in reservoir after every 100 hours of use or annually, whichever comes first.

Always fill the pump body with the liquid to be pumped before starting pump. It is not necessary to drain the pump body after use, unless there is a danger of freezing.

Make certain that all hose and pipe connections are air tight. An air leak in the suction line may prevent priming and will reduce the capacity of the pump.

Always place the pump as close to the liquid to be pumped as possible. Keep the suction line short and with few bends. Keep the pump and engine on a level foundation. A poor foundation and a heavy suction hose (made heavier when "primed" full of liquid) could result in a pump "down the hole".

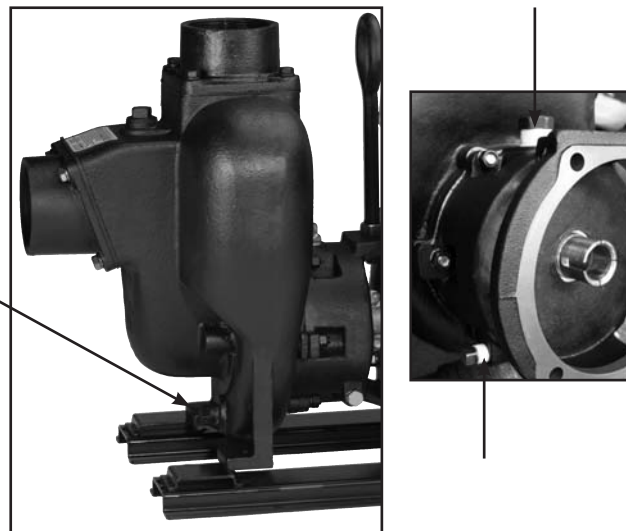
There are important instructions regarding preparing the engine for long periods without use. (Read the engine instruction manual). Under these conditions, drain the pump and wet seal. Refill wet seal with fresh coolant mixture and reinstall fill and drain plugs. Leave all plugs (filter and drain) out of the pump. Always try to store the unit in a heated and dry building.

When pumping dirty water or other liquids containing solids, always use a pump strainer on the end of the suction line. There are no points on the pump which need lubrication. The wet seal assembly is cooled and lubricated by the ethylene glycol/water mixture.



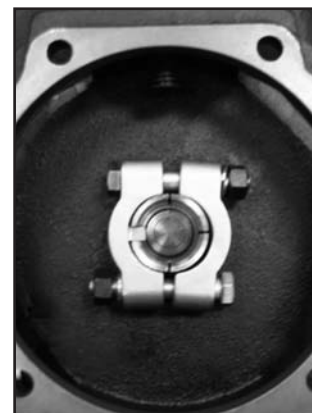
# Disassembly Instructions:

1. Drain all fluids from the pump. Remove the drain plug (18003) from the lower front of the pump housing to drain the pump. Remove fill plug (18205) from top of reservoir. Remove drain plug (17032) from lower side of reservoir.

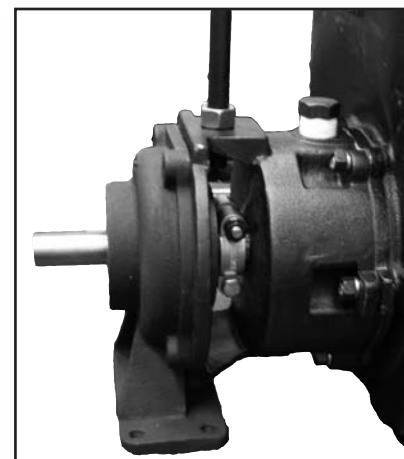


2. Using a 9/16" socket or wrench, remove the impeller clamp assembly (18129) from the pump.

3. Remove drive unit from the pump. This is done by using a 9/16" wrench to remove the four 3/8" bolts (17704) that hold the drive unit to the wet seal reservoir adapter (18203A). Once the bolts are removed, separate the drive unit from the pump.



4. Remove wet seal assembly from pump housing. This is done by removing the six 3/8" nuts (V20019) and 3/8" lock washers (V20018) from the wet seal reservoir adapter (18203A). The wet seal assembly can then be pried away from the pump housing and removed. Remove the handle (18033) from the wet seal adapter.



# Disassembly Instructions:

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5. Remove impeller (18206) from the wet seal assembly by pushing the wet seal shaft (18206) from the back of the assembly.



6. Remove cover plate (18202A) from the wet seal assembly. It may be necessary to pry the cover plate away from the reservoir by using the pry tabs located on the cover plate.

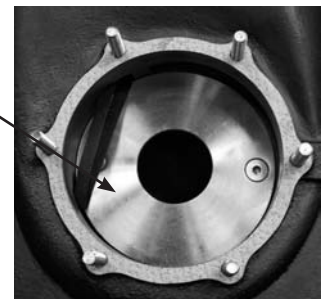


7. Remove the seal assembly (15035) from the wet seal assembly at this time.

8. Inspect the wear plate (18004) and replace or repair as necessary.



9. The inlet (18012) and outlet (18008) flanges and gaskets (18013, 18009) can be inspected and replaced as necessary.



# Assembly Instructions:

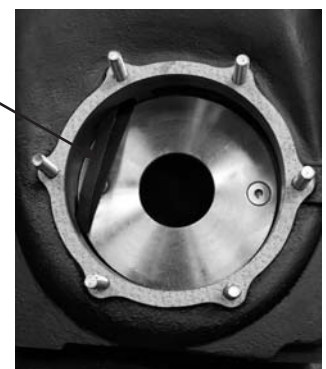
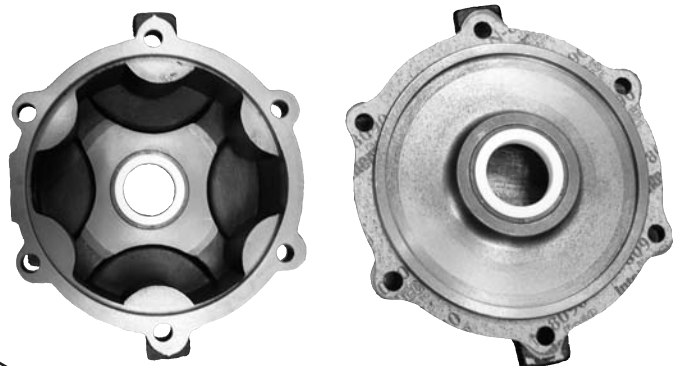
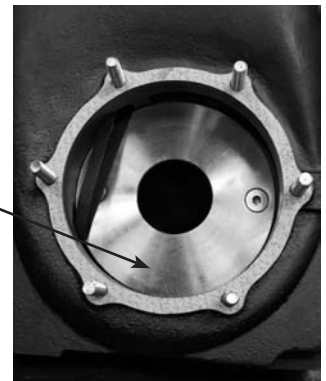
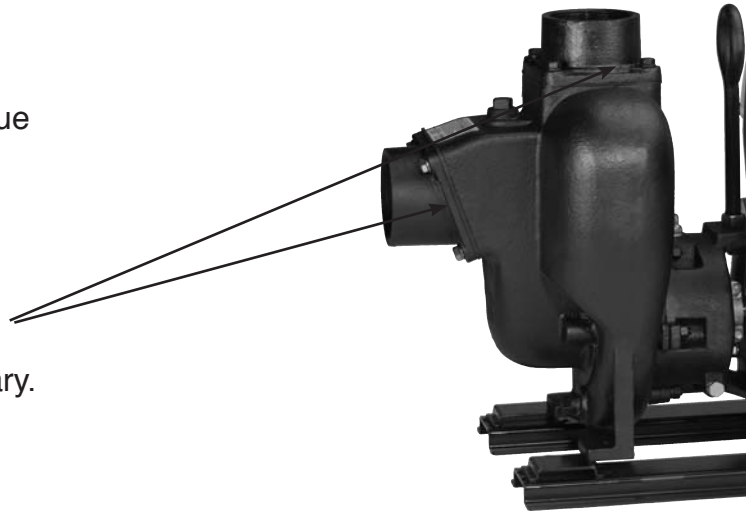
Clean all parts being reused in parts washing solvent before reassembly. Remove all remnants of old gaskets. Rinse and clean pump of all residue from liquids previously pumped. It may also be necessary to sandblast corroded components to remove rust from mating surfaces.

1. Install inlet (18012) and outlet (18008) flanges with new gaskets (18009 & 18013) as necessary.

2. Replace wear plate (18004) as necessary. It is highly recommended that the wear plate bolts be secured with Loctite 241 (blue). Securing the bolts in this fashion will not allow the bolts to vibrate loose during pump operation.

3. Install the ceramic/viton seal halves (15035) into the reservoir (18203A) and cover plate (18202A). Lubricate the O. D. of the viton seal with petroleum jelly and install the seal halves into the bores of the respective components by using a slight pressure with your thumbs. DO NOT STRIKE THE SEAL HALVES AT ANY TIME, OTHERWISE SEAL FAILURE WILL OCCUR.

4. A shim is used to set the clearance between the impeller and wear plate. Any shim with a thickness of .030/.040 can be used. An ideal shim is 1/2" wide piece of No. 21 gauge sheet metal.



# Assembly Instructions:

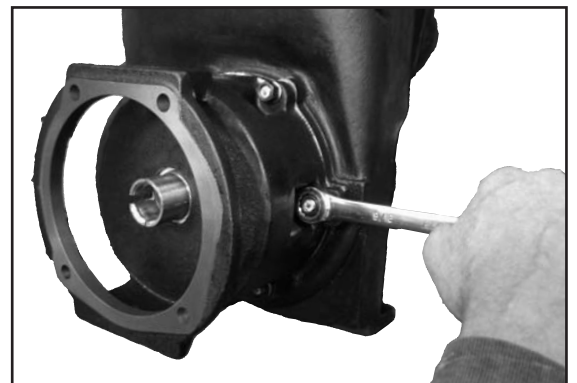
5. Install gaskets to front and back of cover plate and install cover plate on the pump housing.



6. Install seal spring assembly on the impeller shaft. Lubricate the shaft and viton portion of the seal with petroleum jelly. Slide onto shaft using your thumbs.

7. Mate the reservoir adapter (18203A) with the cover plate (18202A). This is done by sliding the reservoir over the shaft and onto the cover plate. Align the bolt patterns of the two parts, also align the components such that the fill plug hole of the reservoir is facing up.

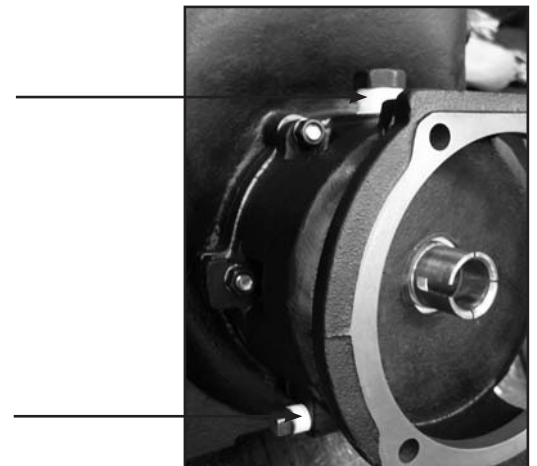
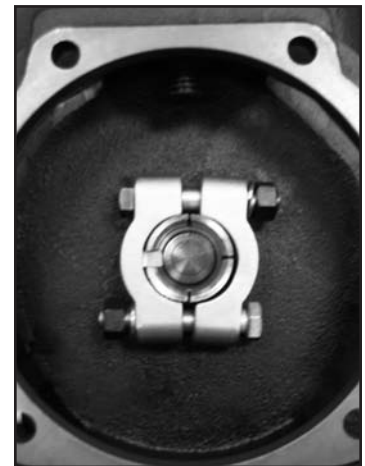
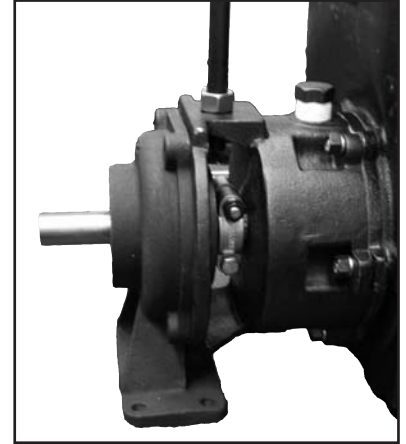
8. Install six 3/8 lock washers (V20018) and 3/8" nuts (V20019) onto the six wet seal housing studs and tighten.

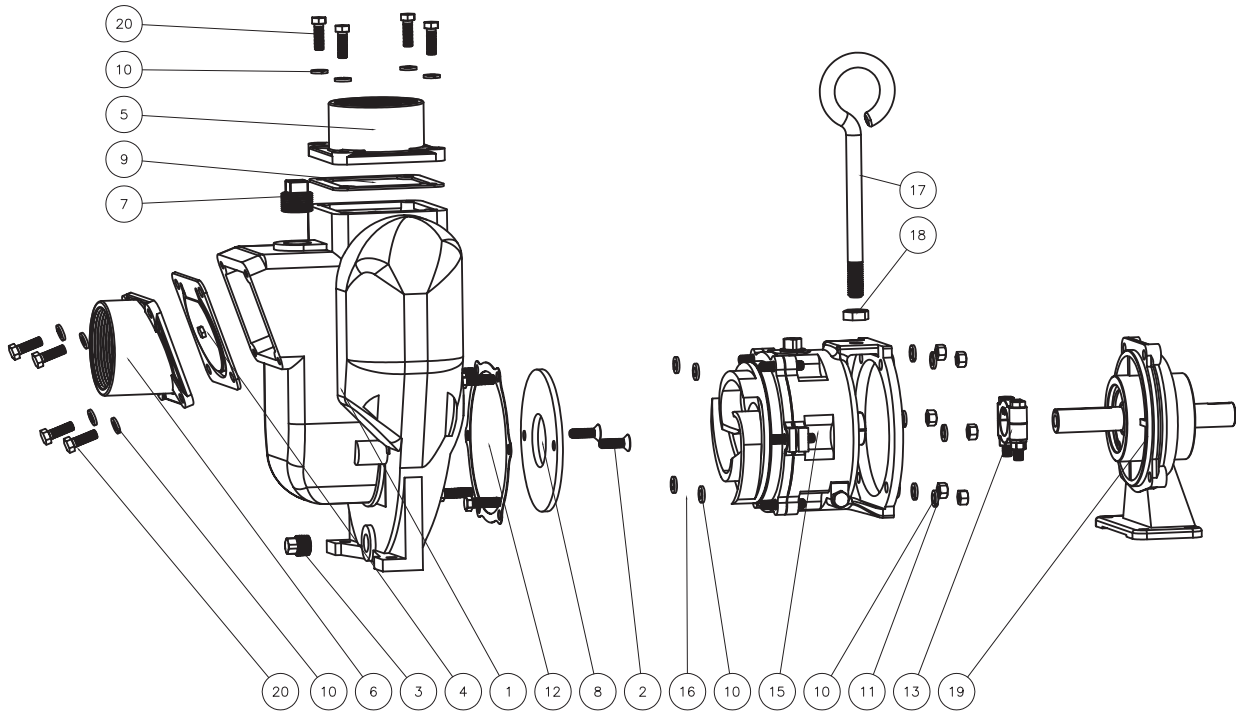


# Assembly Instructions:

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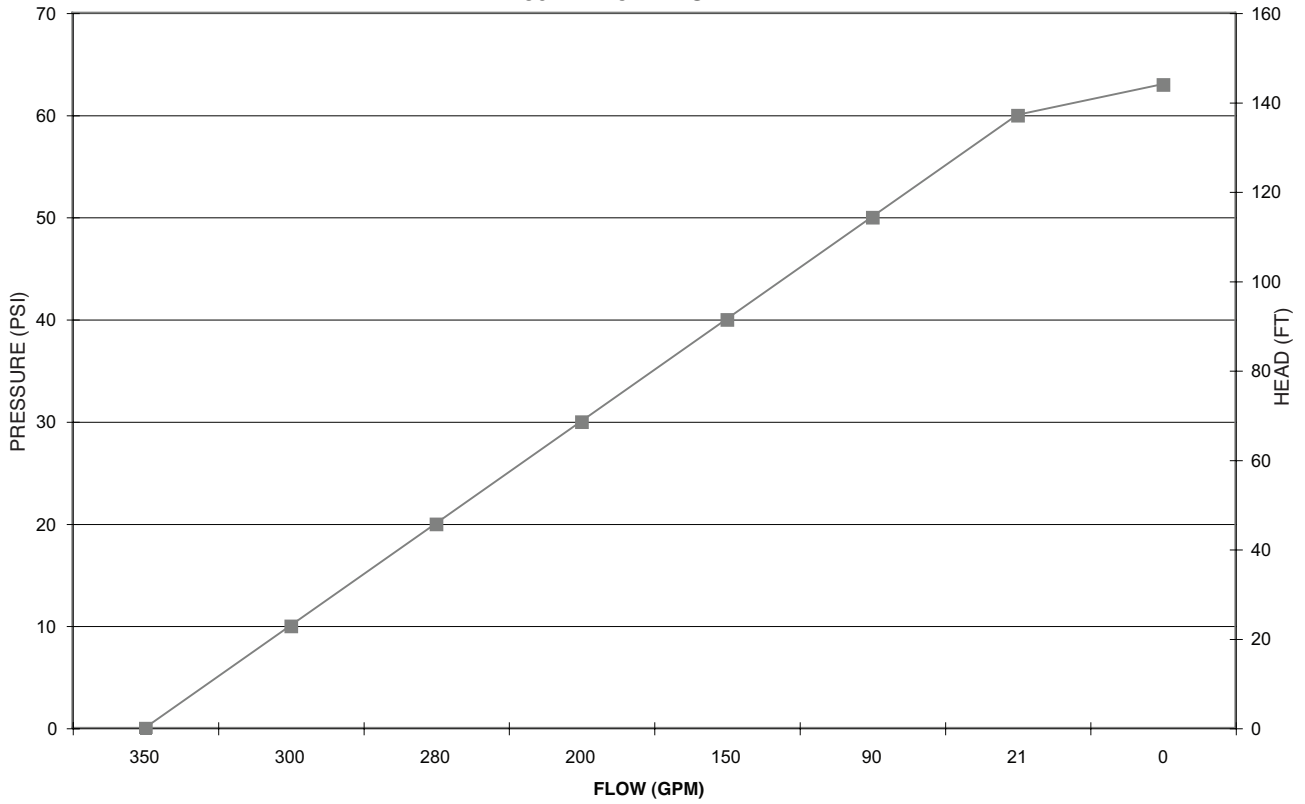
9. Mate the wet seal and pump assembly to the drive unit. Insert the shaft of the drive unit into the wet seal shaft. Install four 3/8" bolts (17704) with lock washers (V20018) through the wet seal adapter and into the drive unit.
10. Install the impeller shaft clamp (18129) over the serrated tines of the wet seal shaft. Lubricate the clamp bolts with anti-seize thread lubricant and tighten to 40 ft.lb. minimum. It may be necessary to further tighten the clamp depending upon drive unit size and pump load during operation.
11. Fill the reservoir  $\frac{3}{4}$  full with a 50% water & 50% ethylene glycol (anti-freeze) mix. The fluid level should cover the top of the seal assembly. Install the  $\frac{3}{4}$ " fill plug (18205) using a thread sealant.
12. Remove the shim from the pump.





ITEM	PART NO.	DESCRIPTION
1	18001	3" Pump Housing
2	18106	$\frac{3}{8}$ " - 16 x 1 $\frac{1}{4}$ FHSCS
3	18003	Drain Plug
4	18013	Check Valve Gasket
5	18008	Flange-Outlet 3"
6	18012	Flange-Inlet 3"
7	18002	1" NPT Plug
8	18004	Plate-Wear
9	18009	Gasket-Outlet
10	V20018	$\frac{3}{8}$ " Lockwasher
11	V20019	$\frac{3}{8}$ " Hex Nut
12	18021	Adapter Gasket
13	18129	Keyed Clamp
14	12910	Pump Decal
15	18200A	Wet Seal Reservoir
16	17704	$\frac{3}{8}$ " - 16 x 1 $\frac{1}{4}$ HHCS
17	18033	Handle
18	18034	Handle Nut
19	18500	Bearing Pedestal
20	18010SS	$\frac{3}{8}$ " - 16 x 1 $\frac{1}{8}$ " HHCS

### 301PIH13W FLOW DATA



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