

SERVICE MANUAL
MOYNO® 500 PUMPS
300 SERIES
30100, 30102, 30104, AND 30105 MODELS

DESIGN FEATURES

Housing: Phenolic
 Pump Rotor: Phenolic
 Elastomers: NBR, EPDM, FPM
 Shaft: Carbon steel
 Bearings: Prelubricated, fully sealed ball bearings mounted on shaft and integrally cast in pump body.
 Seal: Mechanical (carbon/ceramic)
 Mounting: Resilient mountings for quiet operation
 Port Size: 1" OD for hose connections

INSTALLATION

Mounting Position. Pump may be mounted in any position. When mounting vertically, it is necessary to keep bearings above seals to prevent possible seal leakage into bearings.

Pre-Wetting. Prior to connecting pump, wet pump elements and mechanical seal by adding fluid to be pumped into suction and discharge ports. Turn shaft over several times in a counterclockwise direction to work fluid into elements.

Piping. Install 1" ID hose using adjustable hose clamps. If hose is lengthy, it should be supported to avoid excessive strain on pump housings.

Drive. On belt driven units, adjust belt tension to point of non-slip. Do not overtighten.

On direct drive units, coupling components should be aligned and spaced at least $\frac{1}{16}$ " apart.

Note: Pump shaft diameter is .6267". Pulley or coupling may have to be hand reamed for proper fit.

Check rotation before startup. Rotation must be counterclockwise when facing shaft to prevent rotor unscrewing from shaft.

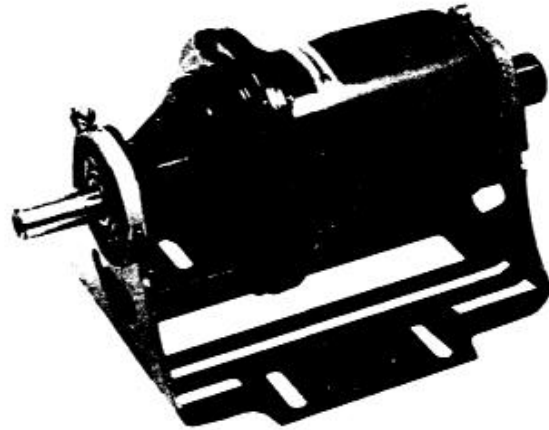
Maximum speed is 1750 rpm.

OPERATION

Self-Priming. With wetted pumping elements, the pump is capable of 25 feet of suction lift when operating at 1750 rpm with hose size equal to port size. Be sure suction lines are air tight or pump will not prime.

DO NOT RUN DRY. Unit depends on liquid pumped for lubrication. For proper lubrication, flow rate should be at least 10% of rated capacity at a given rpm.

Pressure and Temperature Limits. Maximum discharge pressure is 25 psig. Unit is suitable for service at temperatures shown in Table 1.



Storage. Always drain pump for extended storage periods by removing suction and discharge lines, loosening resilient mount clamps and turning discharge port to drain position.

Table 1. Temperature Limits

| Elastomer | Temperature Limits |
|-----------|--------------------|
| *NBR | 10°-160°F |
| *EPDM | 10°-210°F |
| *FPM | 10°-240°F |

*NBR = Nitrile

*EPDM = Ethylene-Propylene-Diene Terpolymer

*FPM = Fluoroelastomer

TROUBLE SHOOTING

WARNING: Before making adjustments, disconnect power source and thoroughly bleed pressure from system. Failure to do so could result in electric shock or serious bodily harm. Replace belt or coupling guards before re-connecting power.

Failure To Pump.

1. Belt or coupling slip: Adjust belt tension or tighten set screw on coupling.
2. Stator torn; possibly excessive pressure: Replace stator, check pressure at discharge port.
3. Wrong rotation: Rotation must be counterclockwise when facing shaft.
4. Threads in rotor or on shaft stripped: Replace part. Check for proper rotation.
5. Excessive suction lift or vacuum.

Pump Overloads.

1. Excessive discharge pressure: Check discharge pressure for 25 psig maximum or obstruction in discharge line.
2. Fluid viscosity too high: Limit fluid viscosity to 20,000 CP or 100,000 SSU.

| Viscosity CP | Limit RPM |
|---------------|-----------|
| 1-300 | 1750 |
| 300-1,000 | 1200 |
| 1,000-2,000 | 700 |
| 2,000-5,000 | 350 |
| 5,000-10,000 | 180 |
| 10,000-20,000 | 100 |

3. Insufficient motor HP: Check HP requirement.

Noisy Operation.

1. Starved suction: Check fluid level, size of piping, and obstructions in pipe.
2. Bearings worn: Replace pump body.
3. Insufficient mounting: Check base for rigidity. Add support if necessary.

Seal Leakage.

1. Leakage at startup: If leakage is slight, allow pump to run several hours to let faces run in.
2. Persistent seal leakage: Faces may be cracked from freezing or thermal shock. Replace seal.

Pump Will Not Prime.

1. Air leak on suction side: Check hose connections.

PUMP DISASSEMBLY

WARNING: Before disassembling pump, disconnect power source and thoroughly bleed pressure from system. Failure to do so could result in electric shock or serious bodily harm.

1. Disconnect power source.
2. Disconnect suction and discharge hoses. Loosen support clamps (146) and remove pump from base (142).

3. Remove screws (112) which secure suction housing (2) to pump body (1). Remove suction housing (2) and stator (21).
4. Rotor (22) can be removed from shaft by turning in a clockwise direction (LH thread).
5. Remove rubber washer and ceramic seal face from shaft. Lift seal body out of seal bore in pump body. If any parts of the mechanical seal (69) are worn or broken, the complete seal assembly should be replaced. Seal components are matched parts and are not interchangeable.
6. The bearings and shaft assembly is molded into the pump body and should not be removed. Pump body and shaft are a complete part.

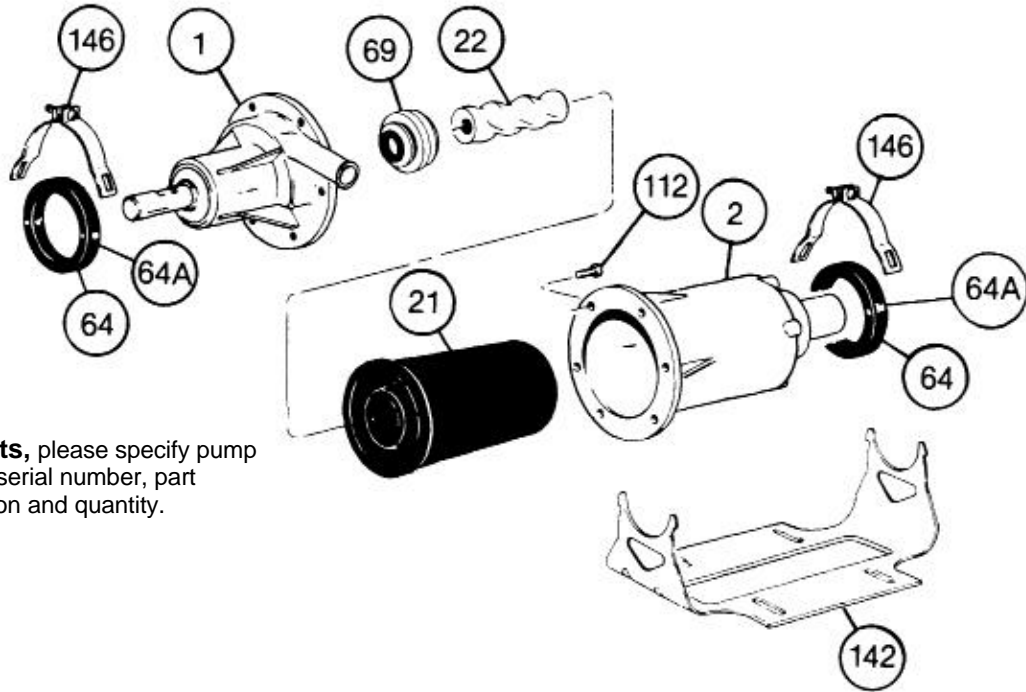
PUMP ASSEMBLY

1. Install mechanical seal (69) by oiling edge of seal body and pressing into seal bore squarely and firmly. Apply light oil to seal faces and slide ceramic face with rubber washer onto shaft. Be sure rubber washer is completely on shaft.

Caution: Do not use oil on EPDM parts. Substitute glycerin or soap and water.

2. Screw rotor (22) onto shaft in a counterclockwise direction (LH thread).
3. Install stator (21) on rotor, seating stator flange in groove on pump body (1).
4. Assemble suction housing (2) to pump body (1). Do not overtighten screws, and apply even pressure on all screws so as not to strip threads in plastic housing.
5. Connect hoses and follow installation instructions.

WARNING: Replace belt or coupling guards before reconnecting power.



When ordering parts, please specify pump model number, pump serial number, part number, part description and quantity.

PARTS LIST

| Item No. | Description | Pump Model Number | | | |
|----------|--|-------------------------|--------------|----------------------|---------------------|
| | | 30100 | 30102 | 30104 | 30105 |
| 1 | Pump Body (Includes Bearing and Drive Shaft) | 330-5311-000 (Phenolic) | | | |
| 2 | Suction Housing | 330-0945-000 | | | |
| *21 | Stator | NBR 340-3500-120 | | EPDM 340-3500-320 | FPM 340-3500-520 |
| *22 | Rotor | 320-1486-000 (Phenolic) | | | |
| 64 | Cushion Ring (2 req.) | ** | 320-1733-000 | | |
| 64 A | Outer Ring (2 req.) | ** | 320-1734-000 | | |
| *69 | Mechanical Seal | 320-6976-000 | | 320-6977-000 | 320-6978-000 |
| 112 | Screws (6 req.) | 320-6936-000 | | | |
| 142 | Pump Support | ** | 330-1697-000 | | |
| 146 | Clamp (2 req.) | ** | 320-4277-000 | | |

*Recommended spare parts.

**30100 pump is the same as 30102, less base.

NBR = Nitrile
 EPDM = Ethylene-Propylene-Diene Terpolymer
 FPM = Fluoroelastomer

