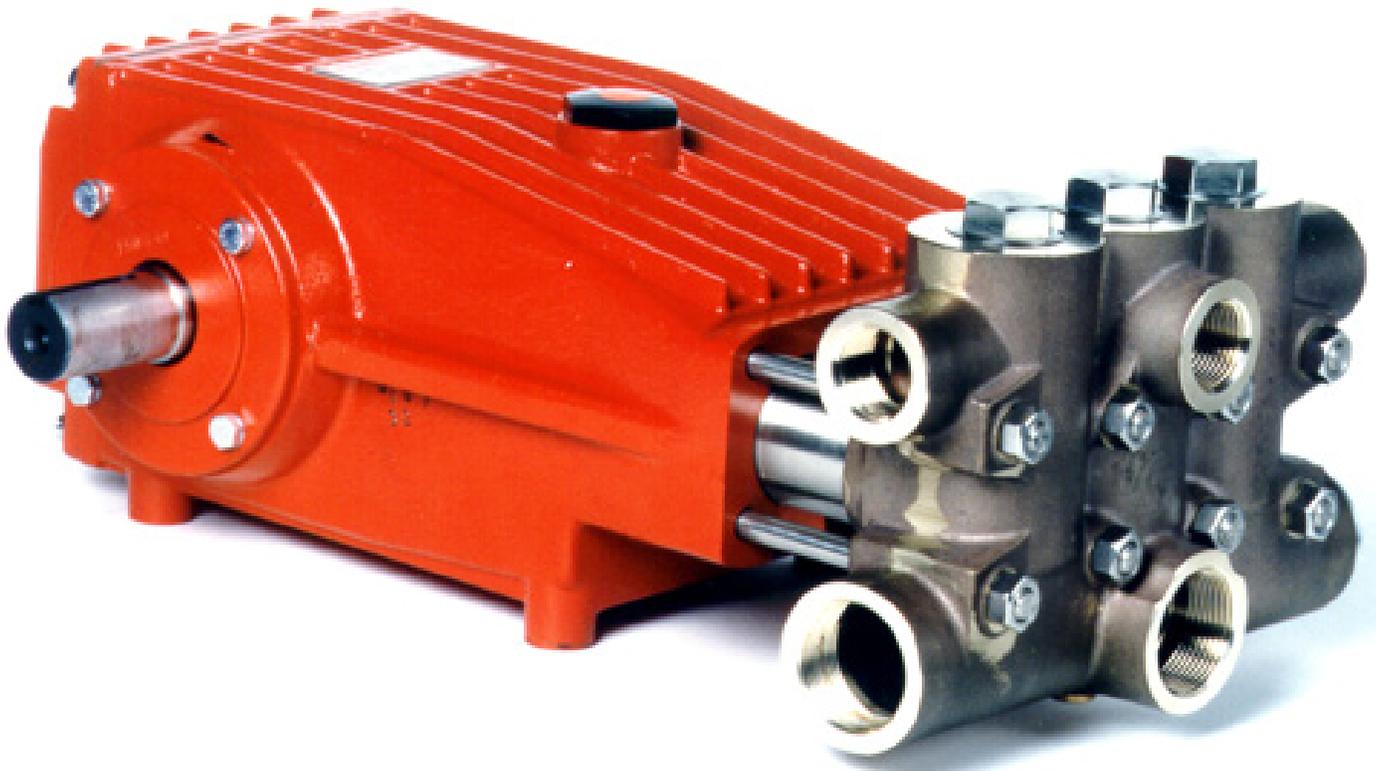


Models

LP121A/LP121A-0011/

LP200/LP250/LP250W-MT



Contents:

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Updated 12/23

INSTALLATION INSTRUCTIONS

Operation and Maintenance

Check oil level prior to starting and ensure trouble free water supply.

IMPORTANT! If there is a **danger of frost**, the water in the pump and in the pump fittings (particularly the unloader valve) must be emptied. The second discharge port can also be used and the pump run "dry" for 1-2 minutes for this purpose.

Oil: Use only 118 fluid ounces (3.5 L) of SAE 90 Industrial gear lube oil. (Giant's p/n 01154)

Initial change after 50 operating hours and then every 1000 operating hours, or after one year if used less.

Caution! When operating in damp places or with high temperature fluctuations, condensate (frothy oil) might occur in the gear box. In this situation, change the oil immediately.
Keep NPSH under control.

Maximum input pressure is 145 PSI (10 bar), the maximum suction head is -4.35 PSI (-0.3 bar). Make sure that suction pulsation is sufficiently dampened. Water column resonance must be avoided.

Safety Rules

Pump operation without safety valve as well as any excess in temperature or speed limits automatically voids the warranty. The safety valve must be regulated in accordance with the guidelines for liquid spraying units so that the admissible operating pressure can not be exceeded by more than 10%.

When the pump is in operation, the open shaft end must be covered up by a shaft protector (21). For direct drive operations, the driven shaft side and coupling must have a guard over the connected area.

Pressure in discharge line and in pump must be at zero before any maintenance to the pump takes place. Close the fluid supply to the inlet port(s). Disconnect fuses to ensure that the driving motor does not accidentally get switched on. Make sure that all parts on the pressure side of the unit are vented and re-filled, with pressure at zero, before starting the pump.

In order to prevent air, or air/water mixture being absorbed and to prevent cavitation occurring, the pump-npshr, positive suction head and water temperature must be kept under control.

Required NPSH refers to water: Specific weight 0.0624 lb/ft³ (1kg/dm³), viscosity 1°E at maximum permissible revolutions.

Cavitation and/or compression of gases lead to uncontrollable pressure kicks which can ruin pump and unit parts and also be dangerous to the operator or anyone standing nearby.

Giant pumps are suitable for pumping clean water and other non-aggressive or abrasive media with a specific weight similar to water.

Before pumping other liquids - especially inflammable, explosive and toxic media - the pump manufacturer must under all circumstances be consulted with regard to the resistance of the pump material. It is the responsibility of the equipment manufacturer and/or operator to ensure that all pertinent safety regulations are adhered to.

NOTE: Contact Giant Industries for Service School Information. Phone: (419)-531-4600

Specifications

| | Max. Flow | Max. Flow | Pressure | Pressure | Max. Speed | Max. Inlet Pressure | Max. Inlet Pressure | Plunger Diameter | Plunger Diameter | Power Req'd | Power Req'd |
|-------------|-----------|-----------|----------|----------|------------|---------------------|---------------------|------------------|------------------|-------------|-------------|
| Model | GPM | l/min | PSI | bar | RPM | PSI | bar | in | mm | BHP | kW |
| LP200 | 19.0 | 72.1 | 2900 | 200 | 1000 | 90 | 6.2 | 1.10 | 28 | 38.3 | 28.6 |
| LP250 | 26.0 | 98.3 | 2200 | 150 | 1000 | 90 | 6.2 | 1.26 | 32 | 39.7 | 29.6 |
| LP250W-MT | 26.0 | 98.3 | 2200 | 150 | 1000 | 90 | 6.2 | 1.26 | 32 | 39.7 | 29.6 |
| LP121A | 32.5 | 123.1 | 1740 | 120 | 1000 | 90 | 6.2 | 1.42 | 36 | 39.3 | 29.3 |
| LP121A-0011 | 32.5 | 123.1 | 1740 | 120 | 1000 | 90 | 6.2 | 1.42 | 36 | 39.3 | 29.3 |

| | <u>U.S.</u> | <u>Metric</u> |
|------------------------------------|-------------|---------------------------------|
| Stroke | 1.65" | 42 mm |
| Crankcase Oil Capacity | 118 fl.oz. | 3.5 L |
| Temperature of Pumped Fluids | 140 °F | 60 °C |
| Inlet Port | | 3 x 1-1/2" BSP |
| Discharge Port | | 3 x 1" BSP |
| Crankshaft Mounting | | Either Side |
| Shaft Rotation | | Top of Pulley Towards Fluid End |
| Weight | 119 lbs. | 54 kg |
| Crankshaft Diameter | | 35 mm |

| LP200 HORSEPOWER REQUIREMENTS | | | | | |
|-------------------------------|------|----------|----------|----------|----------|
| RPM | GPM | 1000 PSI | 1500 PSI | 2000 PSI | 2900 PSI |
| 500 | 9.5 | 6.6 | 9.9 | 13.2 | 19.1 |
| 640 | 12.2 | 8.4 | 12.7 | 16.9 | 24.5 |
| 750 | 14.3 | 9.9 | 14.8 | 19.8 | 28.7 |
| 805 | 15.3 | 10.6 | 15.9 | 21.2 | 30.8 |
| 865 | 16.4 | 11.4 | 17.1 | 22.8 | 33.1 |
| 920 | 17.5 | 12.1 | 18.2 | 24.3 | 35.2 |
| 1000 | 19.0 | 13.2 | 19.8 | 26.4 | 38.3 |

| LP121A HORSEPOWER REQUIREMENTS | | | | | |
|--------------------------------|------|---------|----------|----------|----------|
| RPM | GPM | 500 PSI | 1000 PSI | 1500 PSI | 1740 PSI |
| 500 | 16.3 | 5.6 | 11.3 | 16.9 | 19.6 |
| 640 | 20.8 | 7.2 | 14.4 | 21.7 | 25.1 |
| 750 | 24.4 | 8.5 | 16.9 | 25.4 | 29.5 |
| 805 | 26.2 | 9.1 | 18.2 | 27.3 | 31.6 |
| 865 | 28.1 | 9.8 | 19.5 | 29.3 | 34.0 |
| 920 | 29.9 | 10.4 | 20.8 | 31.1 | 36.1 |
| 1000 | 32.5 | 11.3 | 22.6 | 33.9 | 39.3 |

| LP250 HORSEPOWER REQUIREMENTS | | | | | |
|-------------------------------|------|----------|----------|----------|----------|
| RPM | GPM | 1000 PSI | 1500 PSI | 2000 PSI | 2200 PSI |
| 500 | 13.0 | 9.0 | 13.5 | 18.0 | 19.8 |
| 640 | 16.6 | 11.5 | 17.3 | 23.1 | 25.4 |
| 750 | 19.5 | 13.5 | 20.3 | 27.1 | 29.8 |
| 805 | 20.9 | 14.5 | 21.8 | 29.0 | 31.9 |
| 865 | 22.5 | 15.6 | 23.4 | 31.2 | 34.3 |
| 920 | 23.9 | 16.6 | 24.9 | 33.2 | 36.5 |
| 1000 | 26.0 | 18.0 | 27.1 | 36.1 | 39.7 |

PULLEY INFORMATION

Pulley selection and pump speed are based on a 1725 RPM motor and "B" section belts. When selecting desired GPM, allow for a ±5% tolerance on pumps output due to variations in pulleys, belts and motors among manufacturers.

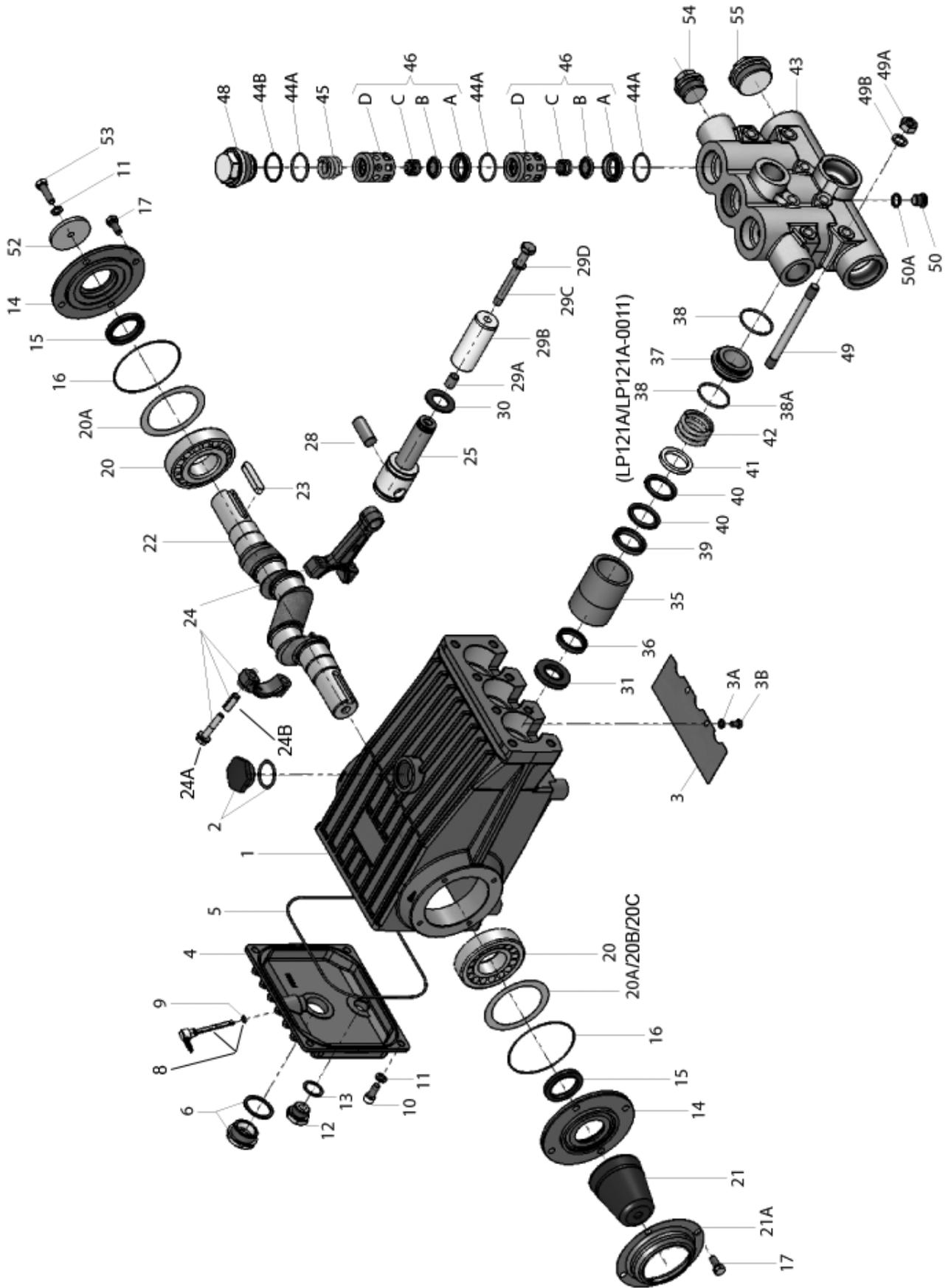
1. Select GPM required, then select appropriate motor and pump pulley from the same line.
2. The desired pressure is achieved by selecting the correct nozzle size that corresponds with the pump GPM.

HORSEPOWER INFORMATION

We recommend that a 1.1 service factor be specified when selecting an electric motor as the power source. To compute specific pump horsepower requirements, use the following formula:

$$HP = (GPM \times PSI) / 1440$$

Exploded View - LP121A, LP121A-0011, LP200, LP250, and LP250W-MT



LP121A, LP121A-0011, LP200, LP250, and LP250W-MT Parts List

| ITEM | PART | DESCRIPTION | QTY | ITEM | PART | DESCRIPTION | QTY |
|------|------------|---------------------------------------|-----|------|------------|---|-----|
| 1 | 07759 | Crankcase | 1 | 38 | 07140 | O-Ring (LP121A only) | 6 |
| 2 | 13000 | Oil filler Plug Assembly | 1 | 38 | 07140-0001 | O-Ring, Viton (LP121A-0011 only) | 6 |
| 3 | 05940 | Cover Plate | 1 | 38A | 12055 | O-Ring (except LP121A) | 3 |
| 3A | 07223-0100 | Spring Ring | 2 | 39 | 13197 | Pressure Ring (LP200) | 3 |
| 3B | 05051 | Hexagon Screw | 2 | 39 | 13026 | Pressure Ring (LP250, LP250W-MT) | 3 |
| 4 | 06085 | Crankcase Cover | 1 | 39 | 07142 | Pressure Ring (LP121A) | 3 |
| 5 | 07104 | O-ring, Crankcase Cover | 1 | 40 | 07144 | V-Sleeve (LP121A) | 6 |
| 6 | 05943 | Oil Sight Glass Assembly | 1 | 40 | 07144-0010 | V-Sleeve (LP121A-0011) | 6 |
| 8 | 06086 | Oil Dipstick Assembly | 1 | 40 | 13115 | V-Sleeve (LP200) | 6 |
| 9 | 01009 | O-Ring, Dipstick | 1 | 40 | 13027 | V-Sleeve (LP250, LP250W-MT) | 6 |
| 10 | 01010 | Cylinder Screw | 4 | 41 | 13198 | Support Ring (LP200) | 3 |
| 11 | 01011-0400 | Spring Ring | 5 | 41 | 13028 | Support Ring (LP250, LP250W-MT) | 3 |
| 12 | 07109 | Plug, 1/2" BSP | 1 | 41 | 07146 | Support Ring (LP121A) | 3 |
| 13 | 06015 | O-Ring | 1 | 42 | 07173 | Tension Spring | 3 |
| 14 | 07111 | Bearing Cover | 2 | 42 | 07147 | Tension Spring (LP121A/LP121A-0011 only) | 3 |
| 15 | 07112 | Radial Shaft Seal | 2 | 43 | 13029 | Valve Casing | 1 |
| 16 | 07113 | O-Ring | 2 | 44A | 07150 | O-Ring (except LP121A-0011) | 9 |
| 17 | 07114 | Hexagon Screw | 8 | 44A | 07150-0001 | O-Ring, Viton (LP121A-0011 only) | 9 |
| 20 | 07116 | Taper Roller Bearing | 2 | 44B | 06266 | Support Ring for O-Ring | 3 |
| 20A | 07117 | Fitting Disc, 0.1 mm | 1-3 | 45 | 06078 | Compression Spring | 3 |
| 20B | 13001 | Fitting Disc, 0.15 mm | 1-3 | 46 | 07060 | Valve Assembly (46A-D) | 6 |
| 20C | 04091 | Shim, 0.2 mm (may not be present) | 1-3 | 46A | 07064 | Valve Seat | 6 |
| 21 | 05376 | Shaft Protector | 1 | 46B | 07063 | Valve Plate | 6 |
| 21A | 05377 | Shaft Guard Holder | 1 | 46C | 07062-0100 | Valve Spring | 6 |
| 22 | 13242 | Crankshaft | 1 | 46D | 07066 | Spacer Pipe | 6 |
| 23 | 13243 | Fitting Key | 1 | 48 | 06077 | Plug | 3 |
| 24 | 13340 | Connecting Rod Assembly | 3 | 49 | 07157 | Stud Bolt | 8 |
| 24A | 13227 | Hex Screw | 3 | 49A | 07158 | Hexagon Nut | 8 |
| 24B | 13278 | Spring Washer | 3 | 49B | 07159 | Disc | 8 |
| 25 | 13341 | Crosshead / Plunger Assembly | 3 | 50 | 07423 | Plug | 1 |
| 28 | 13232 | Crosshead Pin | 3 | 50A | 07161 | Copper Ring | 1 |
| 29A | 07125 | Centering Sleeve | 3 | 52 | 13020 | Disc for Crankshaft | 1 |
| 29B | 13220 | Plunger Pipe (LP200) | 3 | 53 | 04561 | Hexagon Screw | 1 |
| 29B | 13022 | Plunger Pipe (LP250, LP250W-MT) | 3 | 54 | 13321 | Plug, 1" BSP* | 2 |
| 29B | 07130 | Plunger Pipe (LP121A) | 3 | 55 | 13322 | Plug 1-1/2" BSP* | 2 |
| 29C | 13031 | Tension Screw | 3 | | 05930 | Manifold Assembly (43-48/50/50A/54/55) | |
| 29D | 07755 | Copper Ring | 3 | | 05445 | Gear End Assembly (1-29A/30/31/49/29A-B/52/53) | |
| 30 | 07779 | Drip Shield | 3 | | 03055 | Plunger Conversion Kit, LP200 (29B-D/35-42) | |
| 31 | 07133 | Radial Shaft Seal | 3 | | 03116 | Plunger Conversion Kit, LP250 (29B-D/35-42) | |
| 35 | 13196 | Seal Sleeve (LP200) | 3 | | 03117 | Plunger Conversion Kit, LP121A (29B-D/35-42) | |
| 35 | 13024 | Seal Sleeve (LP250, LP250W-MT) | 3 | | | | |
| 35 | 07135 | Seal Sleeve (LP121A) | 3 | | | | |
| 36 | 13291 | Leakage Seal (LP121A) | 3 | | | | |
| 36 | 13228 | Leakage Seal (LP200) | 3 | | | | |
| 36 | 13360 | Leakage Seal (LP250) | 3 | | | | |
| 36 | 13025 | Leakage Seal (LP250W-MT) | 3 | | | | |
| 37 | 07170 | Seal Case (except LP121A) | 3 | | | | |
| 37 | 07139 | Seal Case (LP121A only) | 3 | | | | |
| 38 | 07140 | O-Ring (except LP121A/LP121A-0011) | 3 | | | | |

| |
|---|
| <p>*BSP to NPT Adapters/Seals (sold separately) Inlet = 13375 (Adapter) / 13374 (Seal) Discharge = 13373 (Adapter) / 13372 (Seal)</p> |
|---|

LP121A, LP121A-0011, LP200, LP250 SERIES & LP250W-MT Repair Kits

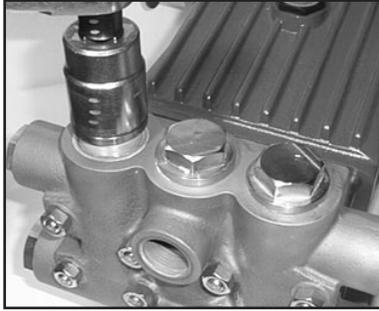
Plunger Packing Kits

| <p>LP121A - #09720</p> <table border="1"> <thead> <tr> <th><u>Item</u></th> <th><u>Part#</u></th> <th><u>Description</u></th> <th><u>Qty.</u></th> </tr> </thead> <tbody> <tr> <td>36</td> <td>13291</td> <td>Leakage Seal</td> <td>3</td> </tr> <tr> <td>38</td> <td>07140</td> <td>O-Ring</td> <td>6</td> </tr> <tr> <td>40</td> <td>07144</td> <td>V-Sleeve</td> <td>6</td> </tr> </tbody> </table> <p>LP121A-0011 - #09720-0010</p> <table border="1"> <thead> <tr> <th><u>Item</u></th> <th><u>Part#</u></th> <th><u>Description</u></th> <th><u>Qty.</u></th> </tr> </thead> <tbody> <tr> <td>36</td> <td>13291</td> <td>Leakage Seal</td> <td>3</td> </tr> <tr> <td>38</td> <td>07140-0001</td> <td>O-Ring</td> <td>6</td> </tr> <tr> <td>40</td> <td>07144-0010</td> <td>V-Sleeve</td> <td>6</td> </tr> </tbody> </table> <p>LP200 - #09307</p> <table border="1"> <thead> <tr> <th><u>Item</u></th> <th><u>Part#</u></th> <th><u>Description</u></th> <th><u>Qty.</u></th> </tr> </thead> <tbody> <tr> <td>36</td> <td>13228</td> <td>Leakage Seal</td> <td>3</td> </tr> <tr> <td>38</td> <td>07140</td> <td>O-Ring</td> <td>3</td> </tr> <tr> <td>38A</td> <td>12055</td> <td>O-Ring</td> <td>3</td> </tr> <tr> <td>40</td> <td>13115</td> <td>V-Sleeve</td> <td>6</td> </tr> </tbody> </table> | <u>Item</u> | <u>Part#</u> | <u>Description</u> | <u>Qty.</u> | 36 | 13291 | Leakage Seal | 3 | 38 | 07140 | O-Ring | 6 | 40 | 07144 | V-Sleeve | 6 | <u>Item</u> | <u>Part#</u> | <u>Description</u> | <u>Qty.</u> | 36 | 13291 | Leakage Seal | 3 | 38 | 07140-0001 | O-Ring | 6 | 40 | 07144-0010 | V-Sleeve | 6 | <u>Item</u> | <u>Part#</u> | <u>Description</u> | <u>Qty.</u> | 36 | 13228 | Leakage Seal | 3 | 38 | 07140 | O-Ring | 3 | 38A | 12055 | O-Ring | 3 | 40 | 13115 | V-Sleeve | 6 | <p>LP250 Series - #09308</p> <table border="1"> <thead> <tr> <th><u>Item</u></th> <th><u>Part#</u></th> <th><u>Description</u></th> <th><u>Qty.</u></th> </tr> </thead> <tbody> <tr> <td>36</td> <td>13360</td> <td>Grooved Ring</td> <td>3</td> </tr> <tr> <td>38</td> <td>07140</td> <td>O-Ring</td> <td>3</td> </tr> <tr> <td>38A</td> <td>12055</td> <td>O-Ring</td> <td>3</td> </tr> <tr> <td>40</td> <td>13027</td> <td>V-Sleeve</td> <td>6</td> </tr> </tbody> </table> <p>LP250W-MT - #09308-MT</p> <table border="1"> <thead> <tr> <th><u>Item</u></th> <th><u>Part#</u></th> <th><u>Description</u></th> <th><u>Qty.</u></th> </tr> </thead> <tbody> <tr> <td>36</td> <td>13025</td> <td>Leakage Seal</td> <td>3</td> </tr> <tr> <td>38</td> <td>07140</td> <td>O-Ring</td> <td>6</td> </tr> <tr> <td>38A</td> <td>12055</td> <td>O-Ring</td> <td>3</td> </tr> <tr> <td>40</td> <td>13027</td> <td>V-Sleeve</td> <td>6</td> </tr> </tbody> </table> | <u>Item</u> | <u>Part#</u> | <u>Description</u> | <u>Qty.</u> | 36 | 13360 | Grooved Ring | 3 | 38 | 07140 | O-Ring | 3 | 38A | 12055 | O-Ring | 3 | 40 | 13027 | V-Sleeve | 6 | <u>Item</u> | <u>Part#</u> | <u>Description</u> | <u>Qty.</u> | 36 | 13025 | Leakage Seal | 3 | 38 | 07140 | O-Ring | 6 | 38A | 12055 | O-Ring | 3 | 40 | 13027 | V-Sleeve | 6 |
|--|--------------|--------------------|--------------------|-------------|----|-------|--------------|---|---|-------------|--------------|--------------------|-------------|-------|----------|--------|-------------|--------------|--------------------|--------------|----|-------|--------------|------------|----|------------|--------|-------------|----|------------|------------|--------------|-------------|--------------|--------------------|-------------|----|-------|--------------|---|----|-------|--------|---|-----|-------|--------|---|----|-------|----------|---|---|-------------|--------------|--------------------|-------------|----|-------|--------------|---|----|-------|--------|---|-----|-------|--------|---|----|-------|----------|---|-------------|--------------|--------------------|-------------|----|-------|--------------|---|----|-------|--------|---|-----|-------|--------|---|----|-------|----------|---|
| <u>Item</u> | <u>Part#</u> | <u>Description</u> | <u>Qty.</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 36 | 13291 | Leakage Seal | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 38 | 07140 | O-Ring | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 40 | 07144 | V-Sleeve | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <u>Item</u> | <u>Part#</u> | <u>Description</u> | <u>Qty.</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 36 | 13291 | Leakage Seal | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 38 | 07140-0001 | O-Ring | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 40 | 07144-0010 | V-Sleeve | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <u>Item</u> | <u>Part#</u> | <u>Description</u> | <u>Qty.</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 36 | 13228 | Leakage Seal | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 38 | 07140 | O-Ring | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 38A | 12055 | O-Ring | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 40 | 13115 | V-Sleeve | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <u>Item</u> | <u>Part#</u> | <u>Description</u> | <u>Qty.</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 36 | 13360 | Grooved Ring | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 38 | 07140 | O-Ring | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 38A | 12055 | O-Ring | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 40 | 13027 | V-Sleeve | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <u>Item</u> | <u>Part#</u> | <u>Description</u> | <u>Qty.</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 36 | 13025 | Leakage Seal | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 38 | 07140 | O-Ring | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 38A | 12055 | O-Ring | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 40 | 13027 | V-Sleeve | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Oil Seal Kit - #09577</p> <table border="1"> <thead> <tr> <th><u>Item</u></th> <th><u>Part#</u></th> <th><u>Description</u></th> <th><u>Qty.</u></th> </tr> </thead> <tbody> <tr> <td>31</td> <td>07133</td> <td>Oil Seal Kit</td> <td>3</td> </tr> </tbody> </table> | <u>Item</u> | <u>Part#</u> | <u>Description</u> | <u>Qty.</u> | 31 | 07133 | Oil Seal Kit | 3 | <p>Valve Kit - #09196</p> <table border="1"> <thead> <tr> <th><u>Item</u></th> <th><u>Part#</u></th> <th><u>Description</u></th> <th><u>Qty.</u></th> </tr> </thead> <tbody> <tr> <td>44A</td> <td>07150</td> <td>O-Ring</td> <td>9</td> </tr> <tr> <td>44B</td> <td>06266</td> <td>Support Ring</td> <td>3</td> </tr> <tr> <td>46A</td> <td>07064</td> <td>Valve Seat</td> <td>3</td> </tr> <tr> <td>46B</td> <td>07063</td> <td>Valve Plate</td> <td>3</td> </tr> <tr> <td>46C</td> <td>07062-0100</td> <td>Valve Spring</td> <td>3</td> </tr> </tbody> </table> | <u>Item</u> | <u>Part#</u> | <u>Description</u> | <u>Qty.</u> | 44A | 07150 | O-Ring | 9 | 44B | 06266 | Support Ring | 3 | 46A | 07064 | Valve Seat | 3 | 46B | 07063 | Valve Plate | 3 | 46C | 07062-0100 | Valve Spring | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <u>Item</u> | <u>Part#</u> | <u>Description</u> | <u>Qty.</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 31 | 07133 | Oil Seal Kit | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <u>Item</u> | <u>Part#</u> | <u>Description</u> | <u>Qty.</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 44A | 07150 | O-Ring | 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 44B | 06266 | Support Ring | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 46A | 07064 | Valve Seat | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 46B | 07063 | Valve Plate | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 46C | 07062-0100 | Valve Spring | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

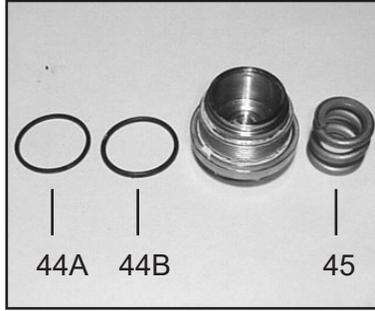
Pump Mounting Selection Guide

| |
|--|
| <p>Bushings 06496 - 35mm H Bushing</p> |
| <p>Pulley & Sheaves 07165 - 12.75" Cast Iron - 4 gr. - AB Section</p> |
| <p>Rails 07357 - Plated Steel Channel Rails (L=11.75" x W=1.88" x H=3.00")</p> |

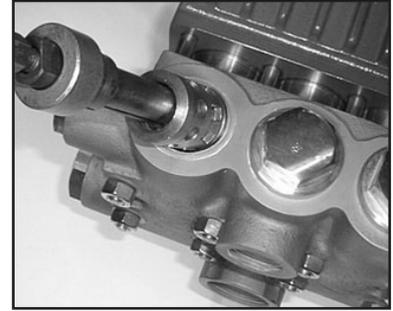
LP121A, LP121A-0011, LP200, LP250, and LP250W-MT - Repair Instructions



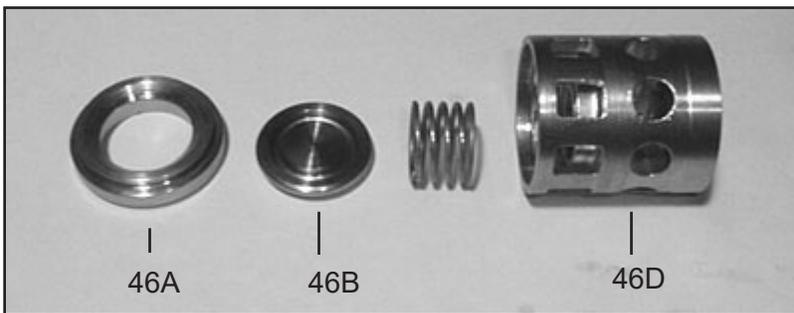
1. With a 30mm wrench, remove the 3 plugs (48).



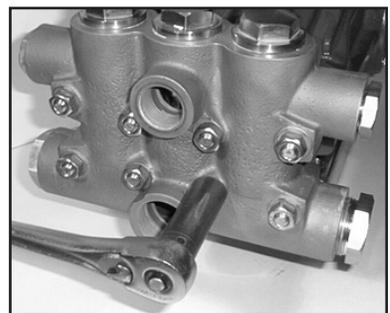
2. Remove the compression spring (45), O-rings and support rings (44A & 44B).



3. Remove the complete valve assembly (46A-46D) with valve pullers.



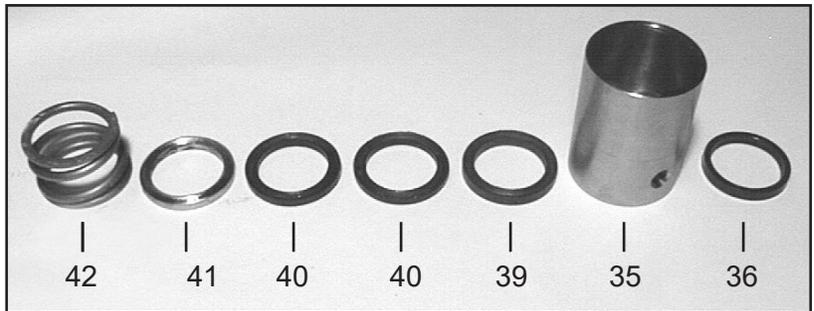
4. Loosen valve seats (46A) from spacer pipe (46D) by lightly hitting the valve plate (46B) with a plastic stick. Check sealing surface and replace worn parts. Reassemble with new O-rings (44A) and oil them before installing. Tighten up tension plugs (48) to 107 ft.-lbs. (145 NM).



5. Loosen the 8 nuts (49A) with a 19mm wrench. Tap the back of the manifold (43) with a rubber mallet to dislodge and slide off the studs (49).

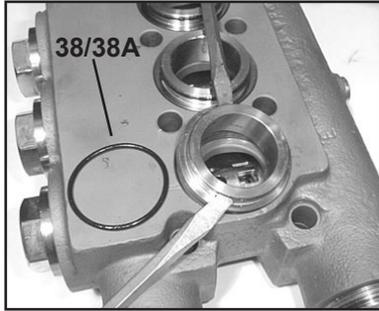


6. Pull seal sleeves (35) out of guides in crankcase (1).

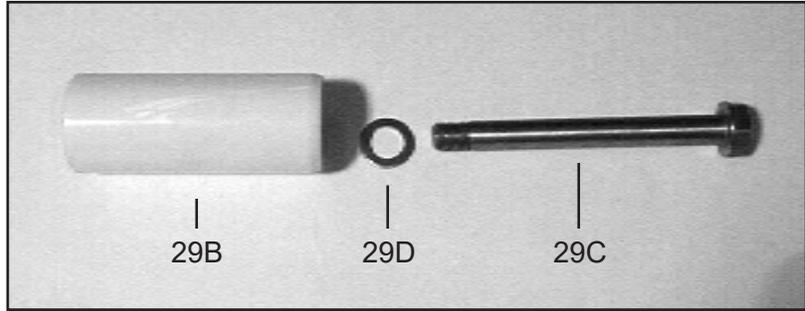


7. Remove the tension spring (42), support ring (41), v-sleeves (40), pressure ring (39), from the seal sleeve (35). Examine seals (36) carefully and replace if worn. Clean all parts.

LP121A, LP121A-0011, LP200, LP250, and LP250W-MT - Repair Instructions



8. Remove seal case (37) from valve casing (43) and inspect O-rings (38/38A).



9. Check plunger surface (29B). If plunger pipe is worn, loosen tension screws (29C) and pull off plunger pipe to the front. Clean front surface of plunger (25) thoroughly. Apply a thin coat of Loctite to the tension screw threads (29C). **Note: Care must be taken that no glue gets between the plunger pipe (29B) and the centering sleeve (29A).** Add new copper ring (29D).



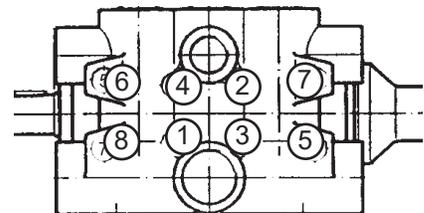
10. Place new plunger pipe (29B) carefully through the oiled seals and push seal sleeve (35) with plunger pipe into the crankcase guide. **Note: Make sure weep hole is facing down.**



11. Tighten the tension screws (29C) to 310 in.-lbs. (35NM). The plunger pipe (29B) should not be strained by over tightening of the tension screw (29C) or through damage to the front surface of the plunger; otherwise, it will probably break.



12. Place valve vasing (43) over studs and push firmly until seated against the crankcase (1). Tighten the hexagon nuts (49A) in a crosswise pattern (shown below) to 59 ft.-lbs. (80 NM)



LP121A, LP121A-0011, LP200, LP250, and LP250W-MT - Repair Instructions To Dismantle Gear End

After removing valve casing (43) and plunger pipe (29B), drain oil. Remove crankcase cover (4) and bearing cover (14). Loosen connecting rod screws (24A) and push the front of the connecting rod (24) forward as far as possible into the crosshead guide.

IMPORTANT! Connecting rods (24) are marked for identification. Do not twist connecting rod halves. Connecting rod is to be reinstalled in the same position on shaft journals.

Turning the crankshaft (22) slightly, hit it out carefully to the side with a rubber hammer.

IMPORTANT! Do not bend the connecting rod (24) shanks. Check crankshaft (22) and connecting rod (24) surfaces, radial shaft seals (15) and taper roller bearings (20).

To Reassemble

Using a soft tool, press in the outer bearing ring until the outer edge lines up with the outer edge of the bearing hole. Remove bearing cover (14) together with radial shaft seal (15) and o-ring (16). Fit crankshaft (22) through bearing hole on the opposite side. Press in outer bearing and tighten it inwards with the bearing cover, keeping the crankshaft in vertical position and turning slowly so that the taper rollers of the bearings touch the edge of the outer bearing ring. Adjust axial bearing clearance to at least 0.1mm and maximum 0.15mm by placing fitting discs (20A and 20B) under the bearing cover.

IMPORTANT! After assembly has been completed, the crankshaft should turn easily with very little clearance. Tighten connecting rod screws (24A) to 310 in.-lbs. (35 NM).

LP121A, LP121A-0011, LP200, LP250, and LP250W-MT Torque Specifications

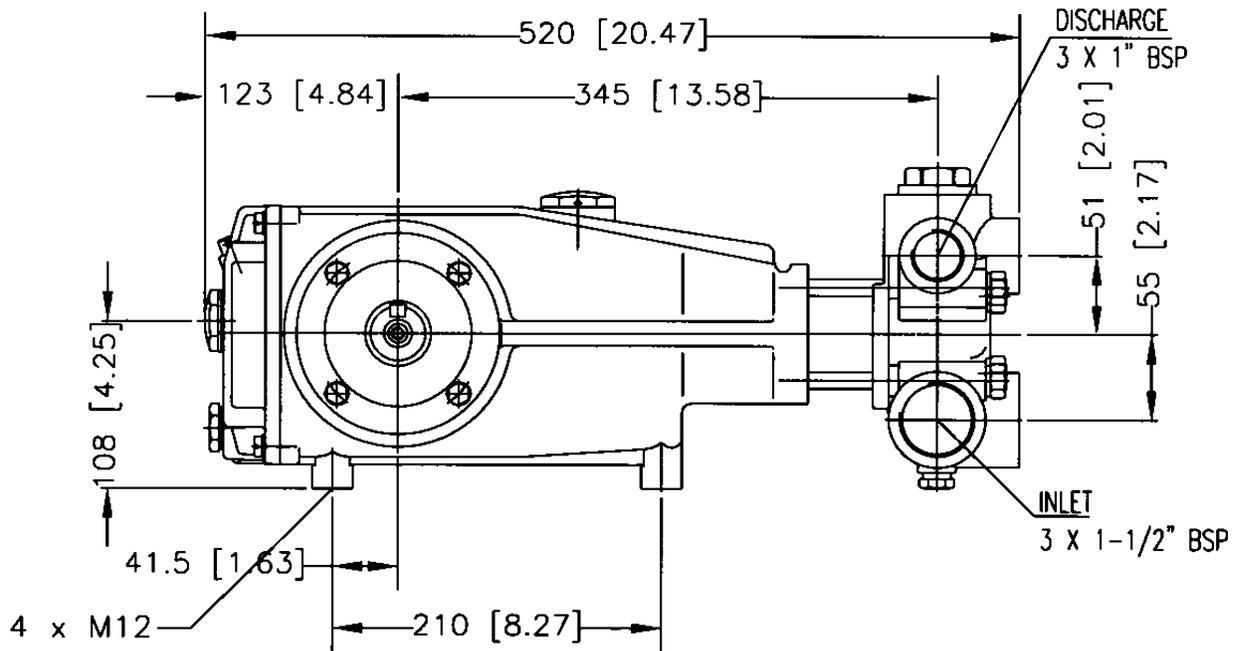
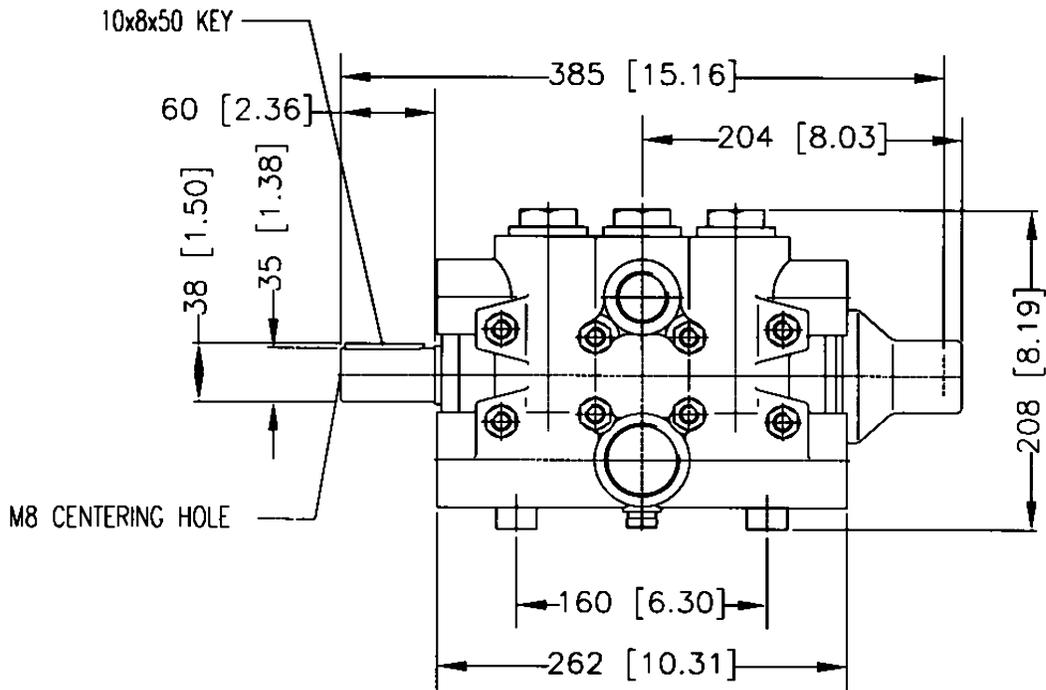
| Pos. | Item # | Description | Lubrication Info | Torque Amount |
|------|--------|-------------------------|-------------------|-----------------------|
| 1 | 07759 | Crankcase | Molycote Cu-Paste | |
| 6 | 05943 | Oil Sight Glass | Loctite 572 | 29 ft.-lbs. (40 Nm) |
| 10 | 01010 | Cylinder Screw | | 221 in.-lbs. (25 Nm) |
| 12 | 07109 | Plug | | 29 ft.-lbs. (40 Nm) |
| 17 | 07114 | Hexagon Screw | | 221 in.-lbs. (25 Nm) |
| 24 | 13340 | Connecting Rod Assembly | | 22 ft.-lbs. (30 Nm) |
| 29C | 13031 | Tension Screw | Loctite 243 | 26 ft.-lbs. (35 Nm) |
| 31 | 07133 | Radial Shaft Seal | Loctite 403 | |
| 48 | 06077 | Plug | | 107 ft.-lbs. (145 Nm) |
| 49 | 07157 | Stud Bolt | Loctite 270 | |
| 49A | 07158 | Hexagon Nut | | 59 ft.-lbs. (80 Nm) |

Pump System Malfunction

| <u>MALFUNCTION</u> | <u>CAUSE</u> | <u>REMEDY</u> |
|--|---|---|
| The Pressure and/ or the Delivery Drops | Worn packing seals Broken valve spring Belt slippage Worn or Damaged nozzle Fouled discharge valve Fouled inlet strainer Worn or Damaged hose Worn or Plugged relief valve on pump Cavitation Unloader | Replace packing seals Replace spring Tighten or Replace belt Replace nozzle Clean valve assembly Clean strainer Repair/Replace hose Clean, Reset, and Replace worn parts Check suction lines on inlet of pump for restrictions Check for proper operation |
| Water in crankcase | High humidity Worn seals | Reduce oil change interval Replace seals |
| Noisy Operation | Worn bearings Cavitation | Replace bearings, Refill crankcase oil with recommended lubricant Check inlet lines for restrictions and/or proper sizing |
| Rough/Pulsating Operation with Pressure Drop | Worn packing Inlet restriction Accumulator pressure Unloader Cavitation | Replace packing Check system for stoppage, air leaks, correctly sized inlet plumbing to pump Recharge/Replace accumulator Check for proper operation Check inlet lines for restrictions and/or proper size |
| Pressure Drop at Gun | Restricted discharge plumbing | Re-size discharge plumbing to flow rate of pump |
| Excessive Leakage | Worn plungers Worn packing/seals Excessive vacuum Cracked plungers Inlet pressure too high | Replace plungers Adjust or Replace packing seals Reduce suction vacuum Replace plungers Reduce inlet pressure |
| High Crankcase Temperature | Wrong Grade of oil Improper amount of oil in crankcase | Giant oil is recommended Adjust oil level to proper amount |

| Preventative Maintenance Check List & Recommended Spare Parts List | | | | | | |
|---|--------------|---------------|----------------|---------------------------|----------------------------|----------------------------|
| Check | Daily | Weekly | 50 Hrs. | Every 500 Hrs. | Every 1500 Hrs. | Every 3000 Hrs. |
| Oil Level/Quality | X | | | | | |
| Oil Leaks | X | | | | | |
| Water Leaks | X | | | | | |
| Belts, Pulley | | X | | | | |
| Plumbing | | X | | | | |
| Recommended Spare Parts | | | | | | |
| Oil Change (1 Gallon) p/n 01154 | | | X | X | | |
| Plunger Seal Kit (1 kit/pump) See page 5 | | | | | X | |
| Valve Repair Kit (2 kits/pump) See page 5 | | | | | | X |

LP121A, LP121A-0011, LP200, LP250 & LP250W-MT Dimensions - mm (in)



GIANT INDUSTRIES LIMITED WARRANTY

Giant Industries, Inc. pumps and accessories are warranted by the manufacturer to be free from defects in workmanship and material as follows:

1. Five (5) years from the date of shipment for all pumps used in portable pressure washers with NON-SALINE, clean water applications.
2. Two (2) years from the date of shipment for Giant pumps used in car wash applications.
3. One (1) year from the date of shipment for all other Giant industrial and consumer pumps.
4. Six (6) months from the date of shipment for all rebuilt pumps
5. Ninety (90) days from the date of shipment for all Giant accessories.

This warranty is limited to repair or replacement of pumps and accessories of which the manufacturer's evaluation shows were defective at the time of shipment by the manufacturer. The following items are NOT covered or will void the warranty:

1. Defects caused by negligence or fault of the buyer or third party.
2. Normal wear and tear to standard wear parts.
3. Use of repair parts other than those manufactured or authorized by Giant.
4. Improper use of the product as a component part.
5. Changes or modifications made by the customer or third party.
6. The operation of pumps and or accessories exceeding the specifications set forth in the Operations Manuals provided by Giant Industries, Inc.

Liability under this warranty is on all non-wear parts and limited to the replacement or repair of those products returned freight prepaid to Giant Industries which are deemed to be defective due to workmanship or failure of material. A Returned Goods Authorization (R.G.A.) number and completed warranty evaluation form is required prior to the return to Giant Industries of all products under warranty consideration. Call (419)-531-4600 or fax (419)-531-6836 to obtain an R.G.A. number.

Repair or replacement of defective products as provided is the sole and exclusive remedy provided hereunder and the MANUFACTURER SHALL NOT BE LIABLE FOR FURTHER LOSS, DAMAGES, OR EXPENSES, INCLUDING INCIDENTAL AND CONSEQUENTIAL DAMAGES DIRECTLY OR INDIRECTLY ARISING FROM THE SALE OR USE OF THIS PRODUCT.

THE LIMITED WARRANTY SET FORTH HEREIN IS IN LIEU OF ALL OTHER WARRANTIES OR REPRESENTATION, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND ALL SUCH WARRANTIES ARE HEREBY DISCLAIMED AND EXCLUDED BY THE MANUFACTURER.



WARNING: This product might contain a chemical known to the State of California to cause cancer, and birth defects or other reproductive harm.

For more information go to www.P65Warnings.ca.gov



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