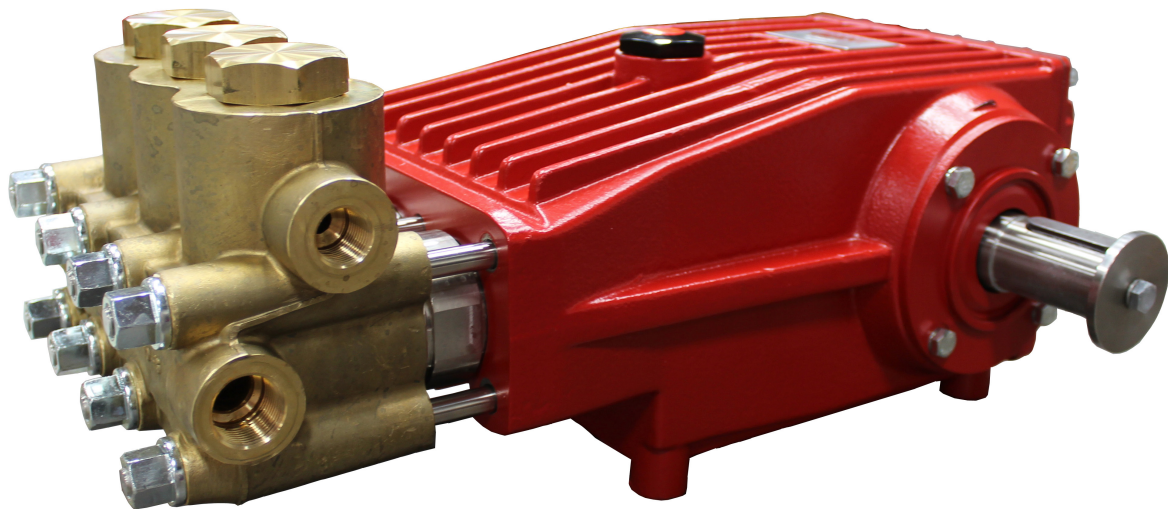


Model LP750

Triplex Ceramic
Plunger Pump
Operating Instructions/
Repair and Service
Manual



GIANT
Performance Under Pressure

Updated 09/19

Contents:

Installation Instructions:	page 2
Pump Specifications:	page 3
Exploded View:	page 4
Parts, Kits, Torque:	page 5
Repair Instructions:	page 6
Dimensions:	page 7
Warranty Information:	back page

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 101 fluid ounces (3.0 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 MODEL LP750

	<u>U.S.</u>	<u>Metric</u>
Volume.....	7.9 GPM	30.0 L/min
Maximum Discharge Pressure	7250 PSI	500 Bar
Maximum Inlet Pressure.....	-4.35 to 87 PSI	-0.3 to 6 Bar
Power Consumption	39.5 BHP	29.5 kW
RPM.....		1000 RPM
Plunger Diameter.....	0.71"	18mm
Stroke	1.65"	42mm
Crankcase Oil Capacity	101 fl. oz.	3 Liters
Temperature of Pumped Fluids	Up to 104 °F	40 °C
Inlet Port		2 x 3/4" BSP
Discharge Ports		2 x 1/2" BSP
Shaft Rotation.....		Top of Pulley Toward Manifold
NPSHR.....	26.2 ft. of Head.	8 Meters of Water
Manifold Material		Forged Brass

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 RATINGS:

LP700 HORSEPOWER CHART					
RPM	GPM	3000 PSI	5000 PSI	6000 PSI	7250 PSI
500	3.9	8.1	13.5	16.3	19.6
600	4.7	9.8	16.3	19.6	23.7
700	5.3	11.0	18.4	22.1	26.7
800	6.3	13.1	21.9	26.3	31.7
900	7.1	14.8	24.7	29.6	35.7
1000	7.9	16.5	27.4	32.9	39.8

The rating shown are the power requirements for the pump. Gas engine power outputs must be approximately twice the pump power requirements shown above.

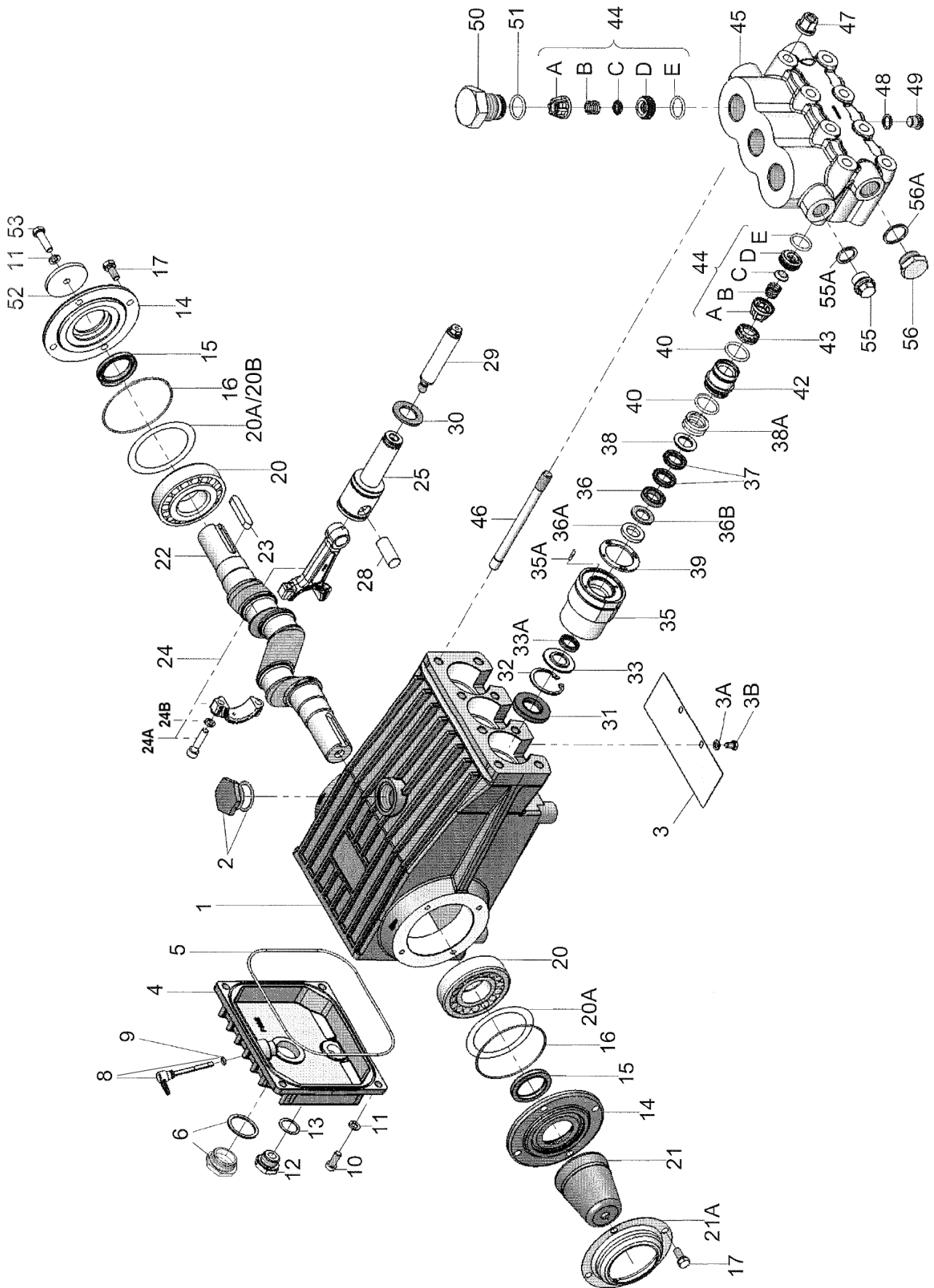
We recommend a 1.15 service factor be specified when selecting an electric motor as the power source. To compute specific pump horsepower requirements, use the Following formula:

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

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)
29	06366	Plunger	Loctite 243	22 ft.-lbs. (30 Nm)
31	07133	Radial Shaft Seal	Loctite 403	
46	13429	Stud Bolt	Loctite 270	
47	13430	Hexagon Nut		59 ft.-lbs. (80 Nm)
50	04122	Plug		107 ft.-lbs. (145 Nm)

LP750 EXPLODED VIEW



LP750 PARTS LIST

<u>Item</u>	<u>Part #</u>	<u>Description</u>	<u>Qty.</u>	<u>Item</u>	<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
1	07759	Crankcase	1	33	13419	Support Disc	3
2	13000	Oil Filler Plug Assembly	1	33A	08087	Grooved Ring	3
3	05940	Cover Plate	1	35	13420	Seal Sleeve	3
3A	07223-0100	Spring Ring	2	35A	22764	Lock Pin	3
3B	05051	Hexagon Screw	2	36	06359A	Pressure Ring	3
4	06085	Crankcase Cover	1	36A	04117	Guide Ring	3
5	07104	O-Ring	1	36B	05263	Support Ring	3
6	05943	Oil Sight Glass Assembly	1	37	06360	Sleeve	6
8	06086	Oil Dipstick Assembly	1	38	13422	Sleeve Support Ring	3
9	01009	O-Ring	1	38A	13423	Spring	3
10	01010	Cylinder Screw	4	39	13424	Leakage Seal	3
11	01011-0400	Spring Ring	5	40	04118	O-Ring	6
12	07109	Plug, 1/2" BSP	1	42	05824	Seal Case	3
13	06015	O-Ring	1	43	13426	Valve Retainer	3
14	07111	Bearing Cover	2	44	04394	Valve Assembly (44A-44E)	6
15	07112	Radial Shaft Seal	2	44A	04395	Valve Retainer	6
16	07113	O-Ring	2	44B	04396	Valve Spring	6
17	07114	Hexagon Screw	8	44C	04147	Valve Plate	6
20	07116	Taper Roller Bearing	2	44D	04121	Valve Seat	6
20A	07117	Fitting Disc	1-3	44E	04123	O-Ring	6
20B	13001	Fitting Disc	1-3	45	04560	Valve Casing	1
21	05376	Shaft Protector	1	46	13429	Stud Bolt	8
21A	05377	Shaft Guard Mount	1	47	13430	Hexagon Nut	8
22	13242	Crankshaft	1	48	07161	Copper Washer	3
23	13243	Fitting Key	1	49	07423	Plug, 1/4" BSP	3
24	13340	Connecting Rod Assembly	3	50	04122	Valve Plug	3
24A	13277	Hexagon Screw	6	51	05972	O-Ring	3
24B	07122	Spring Washer	6	52	13020	Disc for Crankshaft	1
25	13341	Crosshead/Plunger Assembly	3	53	04561	Hexagon Screw	1
28	13232	Crosshead Pin	3	55	13434	Plug, 1/2" BSP	1
29	06366	Plunger	3	55A	06272	Copper Washer	1
30	07779	Oil Scraper	3	56	07703	Plug, 3/4" BSP	1
31	07133	Radial Shaft Seal	3	56A	07704	Copper Washer	1
32	06584	Clip Ring	3				

LP750 REPAIR KITS

Plunger Packing Kit

#09737

<u>Item</u>	<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
33A	08087	Grooved Ring	3
36	06359A	Pressure Ring	3
36A	04117	Guide Ring	3
36B	05263	Support Ring	3
37	06360	Sleeve	6
38	13422	Sleeve Support Ring	3
39	13424	Leakage Seal	3

Valve Assembly Kit

#09738

<u>Item</u>	<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
44	04394	Valve Assembly	6
51	05972	O-Ring	3

Oil Seal Kit

#09577

<u>Item</u>	<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
31	07133	Radial Shaft Seal	3

REPAIR INSTRUCTIONS - Model LP750

VALVE REPLACEMENT

- 1) **Discharge Valves:** Screw out tension plugs (50). take the spring tension cap (44A) out of the exposed discharge valve with flat nose pliers. Remove the valve seat (44D), if necessary with an M12 screw (screwing it into the M12 thread).
- 2) If the valve is extracted as a complete unit, position a screwdriver through the recess in the spring tension cap and press down on the valve plate to gently lever the valve apart.
- 3) Check parts and replace if worn. Tighten plugs (50) at 107 ft.-lbs. (145 Nm).
- 4) **Suction Valves:** Unscrew 8 nuts (47), remove valve casing (45) from seal sleeves (35). Using two screwdrivers, pry out seal case (42) from valve casing. Remove spring tension cap (44A) with flat nose pliers. Remove the valve seat (44D), if necessary with an M12 screw (screwing it into the M12 thread). Check parts, and replace if worn.

NOTE: the leakage seal (39) with its 3mm bores must be positioned on to the notched pins (35A) situated on the seal sleeve. Make sure the cutouts in the leakage seal are placed exactly over the bores of the seal sleeve (35) and that the drip return bores in the valve casing are also free, to ensure trouble-free drip return.

- 6) Secure valve casing by tightening nuts (47) evenly to 59 ft.-lbs. (80 Nm).

SEAL AND PLUNGER REPLACEMENT

- 1) Unscrew the 8 x nut (47), remove valve casing by pulling it out to the front. Remove seal sleeve (35). Remove tension spring (38A) and seal parts (36-38) from seal sleeve. Check plunger surface (29) and seals (37). Replace worn parts.
- 2) After removing clipring (32) and support ring (33), check weep seal (33A) and replace if necessary.
- 3) If the surface of the plunger is worn, screw out the plunger (29) with a 13mm wrench. Clean centring and front surface of crosshead with plunger base (25).
- 4) Thread new plunger (29) carefully through oiled seals in seal sleeve (35). Coat thread of new plunger lightly with suitable bonding agent (locktite).
- 5) Then insert seal sleeve (35) with plunger (29) into crankcase guide. Turn crankshaft until plunger with crosshead (25) pushes against plunger (29). Tighten plunger (29) to 22 ft.-lbs. (30 Nm) using a 13mm torque wrench.

NOTE: The leakage seal (39) has to be installed so that its cut-outs cover the 3 mm dia. bores of the seal sleeves (35) as well as the 3 mm dia. drip-return bores of the valve casing (45).

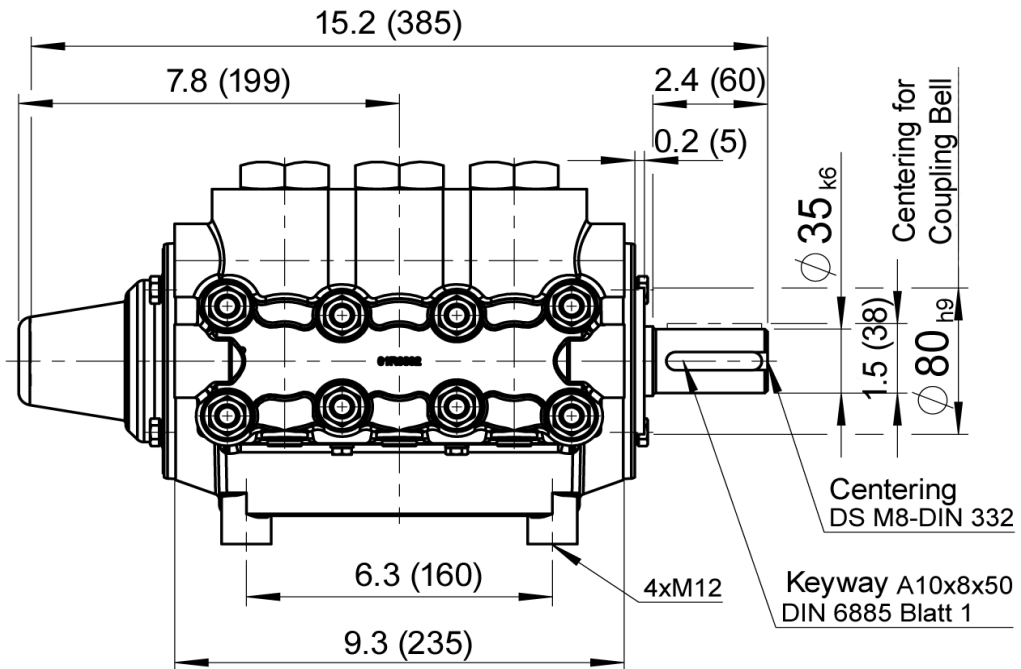
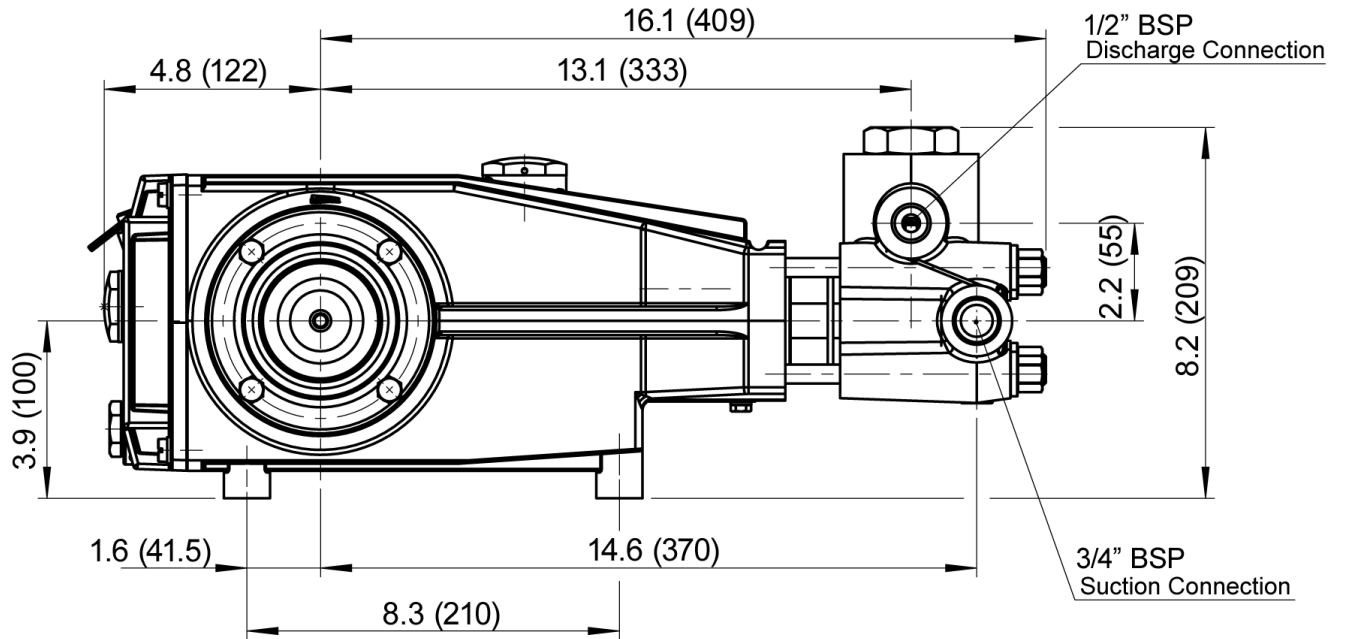
DISASSEMBLY OF CRANKCASE

- 1) Remove valve casing (#43) and plunger pipe (#28B), drain oil.
- 2) Screw off gear cover (#4) and bearing cover (#14).
- 3) Remove connecting rod screws (#24) and push the front of connecting rod forward as far as possible. Remove back halves of connecting rods, note which position from which they came from.
- 4) Turning the crankshaft slightly, carefully hit on side of crankshaft (#22) with a rubber mallet until crankshaft is loose.
- 5) Check crankshaft and bearing for damage, replace if needed.

REASSEMBLY

- 6) Using a soft tool, press in the outer bearing ring until the outer edge lines up with the outer edge of crankcase (#1). Attach bearing cover (#14) with shaft seal and o-ring (#16) in place. Fit crankshaft through bearing hole on the opposite side. Press in bearing with bearing cover, keeping the shaft in a horizontal position and turning it slowly so that taper rollers touch the edge of outer bearing ring.
- 7) Adjust axial bearing clearance to at least .004" (0.1mm) and maximum at .006" (0.15mm) by placing fitting discs (20A & 20B) under the bearing cover.
- 8) After assembly, the shaft should turn easily with very little clearance.
- 9) Bolt connecting rod halves together making sure they are replaced in the same position from which they came from. Tighten connecting rod screws to 22 ft.-lbs. (30 Nm).

Model LP750 Dimensions - Inches (mm)



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. For portable pressure washers and self-serve car wash applications, the discharge manifolds will never fail, period. If they ever fail, we will replace them free of charge. Our other pump parts, used in portable pressure washers and in car wash applications, are warranted for five years from the date of shipment for all pumps used in NON-SALINE, clean water applications.
2. One (1) year from the date of shipment for all other Giant industrial and consumer pumps.
3. Six (6) months from the date of shipment for all rebuilt pumps.
4. 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.

