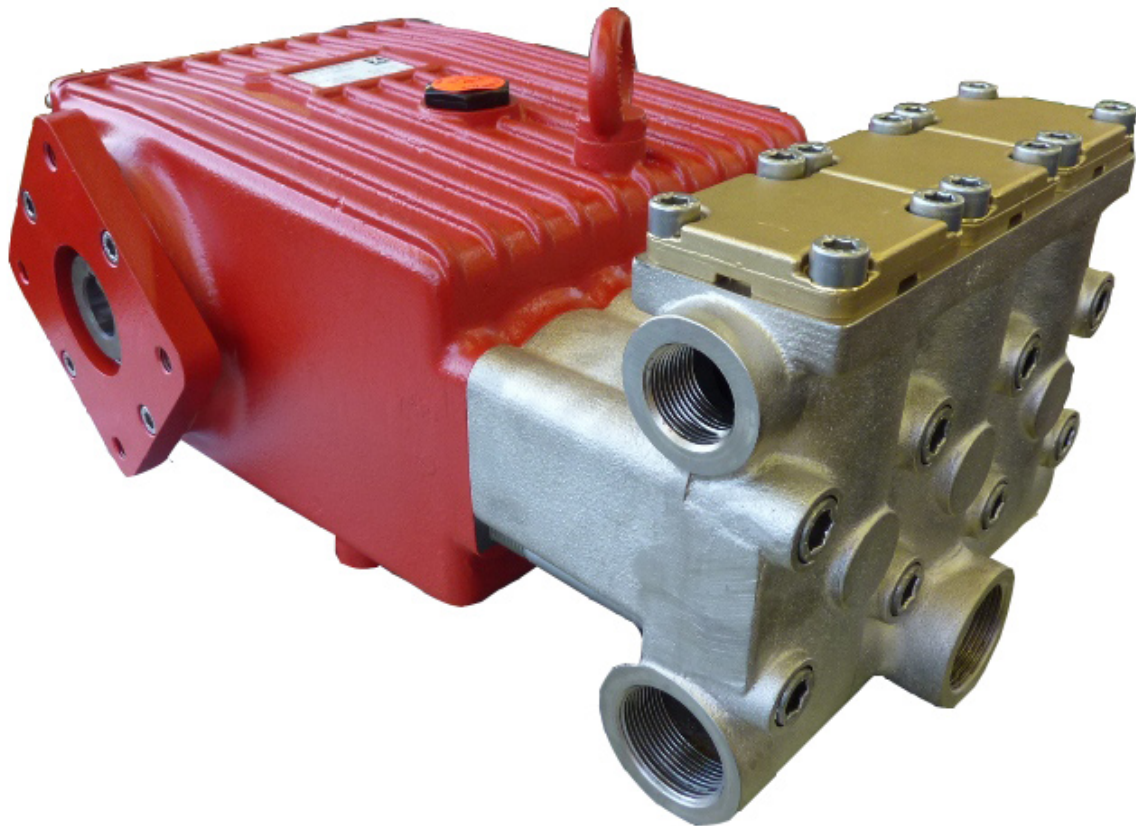


Model GP5128HS

Triplex Ceramic
Plunger Pump
Operating Instructions /
Manual

Hydraulic Drive Pump



GIANT
Performance Under Pressure

Contents:

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

INSTALLATION INSTRUCTIONS

Installation of the Giant Industries, Inc., pump is not a complicated procedure, but there are some basic steps common to all pumps. The following information is to be considered as a general outline for installation. If you have unique requirements, please contact Giant Industries, Inc. or your local distributor for assistance.

1. The pump should be installed flat on a base to a maximum of a 15 degree angle of inclination to ensure optimum lubrication.
2. The inlet to the pump should be sized for the flow rate of the pump with no unnecessary restrictions that can cause cavitation. Teflon tape should be used to seal all joints. If pumps are to be operated at temperatures in excess of 140° F, it is important to insure a positive head to the pump to prevent cavitation. **Keep NPSH must be observed.** Make sure that suction pulsation is sufficiently dampened - water column resonance must be avoided.
3. The discharge plumbing from the pump should be properly sized to the flow rate to prevent line pressure loss to the work area. It is essential to provide a safety bypass valve between the pump and the work area to protect the pump from pressure spikes in the event of a blockage or the use of a shut-off gun.
4. Use of a dampener is necessary to minimize pulsation at drive elements, plumbing, connections, and other system areas.

The use of a dampener with Giant Industries, Inc. pumps is optional, although recommended by Giant Industries, Inc. to further reduce system pulsation.

Dampeners can also reduce the severity of pressure spikes that occur in systems using a shut-off gun. A dampener must be positioned downstream from the unloader.

5. Crankshaft rotation on Giant Industries, Inc. pumps should be made in the direction designated by the arrows on the pump crankcase. Reverse rotation may be safely achieved by following a few guidelines available upon request from Giant Industries, Inc. Required horsepower for system operation can be obtained from the chart on page 3.
6. Before beginning operation of your pumping system, remember: Check that the crankcase and seal areas have been properly lubricated per recommended schedules. Do not run the pump dry for extended periods of time. Cavitation will result in severe damage. Always remember to check that all plumbing valves are open and that pumped media can flow freely to the inlet of the pump.

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.

Finally, remember that high pressure operation in a pump system has many advantages. But, if it is used carelessly and without regard to its potential hazard, it can cause serious injury.

IMPORTANT OPERATING CONDITIONS

Failure to comply with any of these conditions invalidates the warranty

1. Prior to initial operation, add oil to crankcase so that oil level is between the two lines on the oil dipstick. **DO NOT OVERFILL.**

SAE 80 or SAE 90 Industrial Gear Oil may be used. (Giant p/n 01154)

Caution! When operating in damp places or with high temperature fluctuations, the oil must be changed immediately should condensate (frothy oil) occur in the gear box. Crankcase oil should be changed after the first 50 hours of operation, then at regular intervals of 500 hours or less depending on operating conditions.

2. Pump operation must not exceed rated pressure, volume, or RPM. A pressure relief device must be installed in the discharge of the system.
3. Acids, alkalines, or abrasive fluids cannot be pumped unless approval in writing is obtained before operation from Giant Industries, Inc.
4. Run the pump dry approximately 10 seconds to drain the water before exposure to freezing temperatures.

Specifications

Model GP5128HS

	U.S.....	(Metric)
Volume.....	21 GPM	78.0 LPM
Discharge Pressure	4060 PSI	280 bar
Speed (Continuous).....		1000 RPM
Inlet Pressure (maximum)	-4.35 to 145 PSI	-0.3 to 10 bar
Plunger Diameter.....	1.1"	28 mm
Crankshft Stroke.....	1.81"	46 mm
Crankshaft Bore.....		SAE C Flange C32 Shaft (ø31,75)
Crankshaft Mounting		Either side
Shaft Rotation.....		Towards manifold
Temperature of Pumped Fluids	Up to 140°F	(60°C)
Inlet Ports		(3) 1-1/2" BSP
Discharge Ports		(2) 1" BSP
Weight	179 lbs.	(81 kg)
Crankcase Oil Capacity	1.2 Gal.	(4.6 liter)
Fluid End Material.....		Nickel-Plated Spheroidal Cast Iron

Consult the factory for special requirements that must be met if the pump is to operate beyond one or more of the limits specified above.

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

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

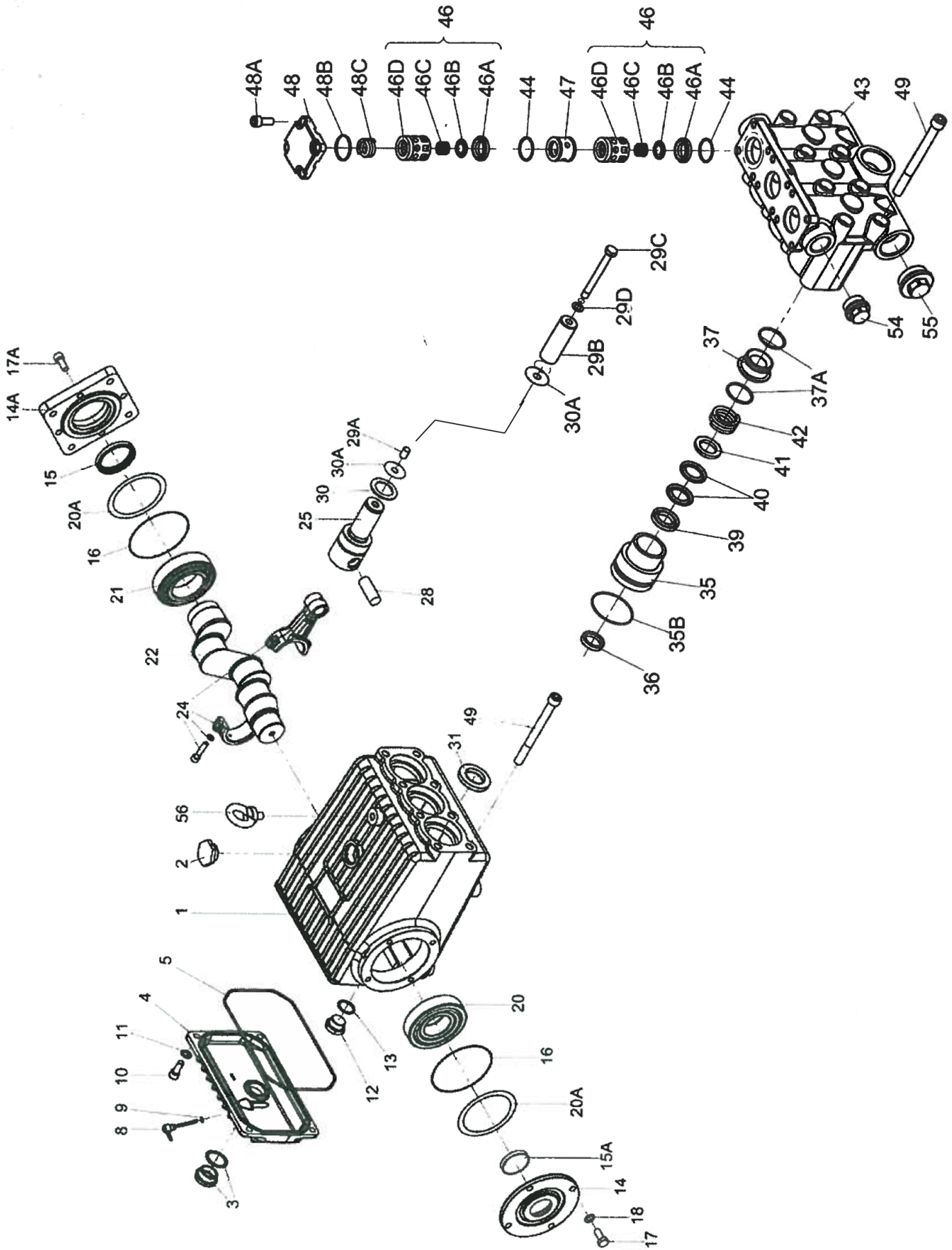
We recommend that a 1.15 service factor be specified when selecting an electric motor as the power source. To compute specific pump horsepower requirements, use the following formula:

$$\text{(GPM X PSI) / 1450 = HP}$$

For the Application of a Hydraulic Motor:

To Determine the Torque of a Hydraulic Motor -- $(\text{GPM} \times \text{PSI} \times 36.77) / \text{RPM} = \text{Torque (in-lbs)}$

GP5128HS Exploded View



GP5128HS Spare 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	13266	Crankcase	1	30	13282	Oil Scraper	3
2	13000	Oil Filler Plug Assembly	1	30A	05889	Washer for Drip Shield	3
3	05943	Oil Sight Glass Assy.	1	31	13284	Radial Shaft Seal	3
4	13267	Crankcase Cover	1	35	04286	Seal Sleeve	3
5	13268	O-Ring	1	35B	08183	O-Ring	3
8	07105	Oil Dip Stick	1	36	13228	Grooved Ring	3
9	01009	O-Ring, Dip Stick	1	37	04287	Seal Case	3
10	07008	Inner Hexagon Screw	4	37A	07700	O-Ring	6
11	06725	Spring Washer	4	39	13197	Pressure Ring	3
12	07703	Drain Plug 3/4" BSP	1	40	13115	V-Sleeve	6
13	07704	Gasket, Drain Plug	1	41	13198	Sleeve Support Ring	3
14	13271	Bearing Cover	1	42	07173	Tension Spring	3
14A	04467	Bearing Cover	1	43	04288	Valve Casing	1
15	05771	Radial Shaft Seal	2	44	07150	O-Ring	6
16	08182	O-Ring	2	46	07060	Valve Assy.	6
17	13358	Hexagon Screw	8	46A	07064	Valve Seat	6
17A	07008	Hexagon Socket Screw	4	46B	07063	Valve Plate	6
18	06725	Spring Washer	8	46C	07062-0100	Valve Spring	6
20	13206	Taper Roller Bearing	2	46D	07066	Spacer Pipe	6
20A	13207	Fitting Disc (Shim)	1-5	47	13311	Spacer Ring	3
21	04468	Tapered Roller Bearing	1	48	04289	Plug	3
22	04469	Crankshaft	1	48A	07008	Inner Hexagon Screw	12
23	13275	Fitting Key	1	48B	13012	O-Ring	3
24	13276	Connecting Rod Assy.	3	48C	06078	Tension Spring	3
25	13279	Crosshead Assy.	3	49	13339	Inner Hexagon Screw	8
28	13281	Crosshead Pin	3	52	13362	Disc for Crankshaft	1
29A	07125	Centering Sleeve	3	53	13358	Hexagon Screw	1
29B	13220	Plunger Pipe	3	54	13321	Plug, 1" BSP	1
29C	13031	Tensioning Screw	3	55	13322	Plug, 1-1/2" BSP	2
29D	07755	Copper Ring	3	56	07623	Eye Bolt	1

GP5128HS Repair Kits

Plunger Packing Kit - #09761

<u>Item</u>	<u>Part#</u>	<u>Description</u>	<u>Qty.</u>
35B	08183	O-Ring	3
36	13228	Grooved Ring	3
37A	07700	O-Ring	6
40	13115	V-Sleeve	6

Valve Assembly Kit - #09762

<u>Item</u>	<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
46	07060	Valve Assembly	6
48B	13012	O-Ring	3

Oil Seal Kit - #09230

<u>Item</u>	<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
31	13284	Oil Seal	3

GP5128HS Torque Specifications

<u>Position</u>	<u>Item#</u>	<u>Description</u>	<u>Torque Amount - Ft.-lbs (NM)</u>
24	13276	Connecting Rod Assy.	26 (35NM)
29C	13031	Tension Screw, Plunger	26 (35NM)
48A	07008	Inner Hexagon Screw, Plug	35 (47)
49	13339	Inner Hexagon Screw, Valve Casing	74-89 (100-120)

GP5128HS Repair Instructions

To Check Valves

Remove inner hexagon screw (48A) and remove plugs (48) with a screwdriver. Check O-rings on plugs (48B). Pull out tension spring (48C). Take spacer pipe (46D) together with the discharge valve out of the valve casing using a clipping pliers or a $\varnothing 22$ extractor tool. Remove the next exposed spacer pipe and suction valve as already described. Remove the valve seats (46A) from the spacer pipes by lightly tapping the valve plate (46B) from above with a plastic rod. Check sealing surfaces and replace worn parts.

When reassembling, use new O-rings if possible and oil them before installing.

Tighten inner hexagon screws (48A) to 35 Ft-Lbs (47NM).

To Check Seals and Plunger Pipe

Loosen the 8 nut and pull off valve casing to the front. Pull seal sleeves (35) out of guides in crankcase and over the plunger pipe (29B). Pull support ring (41), sleeves (40) and pressure ring (39) out of seal sleeve.

Check plunger surfaces, sleeves (40) and grooved rings (36). Replace worn parts.

If the plunger pipe is worn out, loosen tension screw (29C) and pull off plunger pipe to the front. Clean contact surfaces of plunger (25) thoroughly. Then place new plunger pipe carefully through the oiled seals into the seal case. Check O-rings (35A, 35B) on seal sleeves and replace worn O-rings. Then push seal sleeve together with plunger pipe into the crankcase guide. Turn gear carefully until plunger (25) comes up against the plunger pipe. Put a new copper gasket (29D) onto the tension screw (29C). Cover the thread of tension screw and the gasket with glue and tighten to 26 Ft.-lbs. (35NM).

Important! Care must be taken that no glue gets between the plunger pipe (29B) and the centering sleeve (29A). The plunger pipe should not be strained by eccentric tightening of the tension screw or through damage to front of surface of plunger, otherwise it will probably break. Tighten the inner screws (49) for the valve casing evenly to 74-89 Ft.-Lbs. (100-120NM).

To Dismantle Drive

Drain oil after dismantling the valve casing and plunger pipes. Screw off crankcase cover (4) and bearing cover (14, 14A). Remove connecting rod screws (24), push the front connecting rod parts as far as possible into the crosshead guide and carefully push out the radial shaft seals (31).

Important! Do not twist connecting rod halves. The connecting rods are marked for identification and must be remounted onto the shaft journals in the exact original position.

Turn the crankshaft lightly and hit it out preferably in the direction of the hollow shaft bore using a rubber hammer.

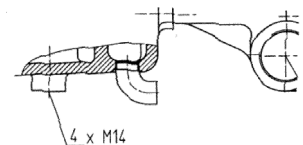
Important! Do not bend connecting rod shanks. Examine the surfaces of the crankshaft, connecting rods, crossheads and plungers (25) as well as radial shaft seals (15, 31) and taper roller bearings (20).

To Reassemble

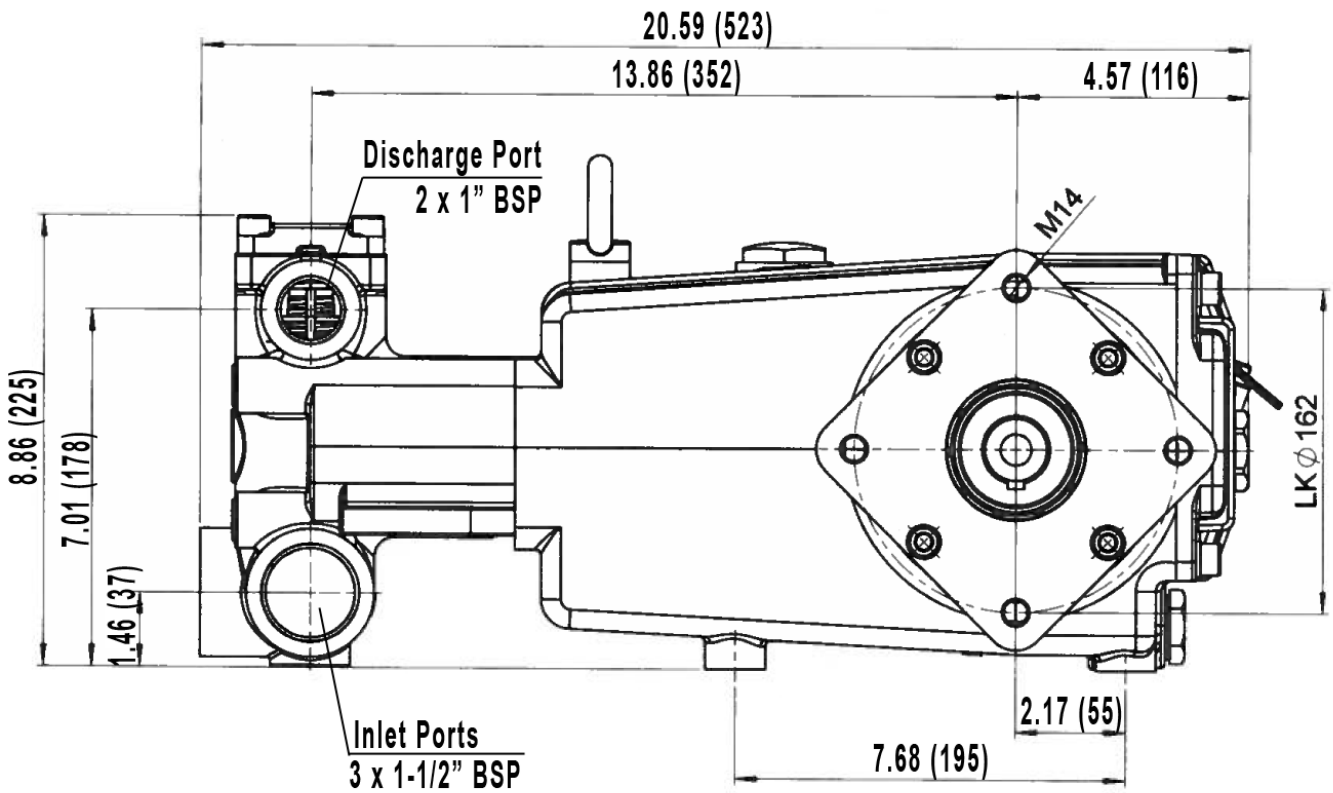
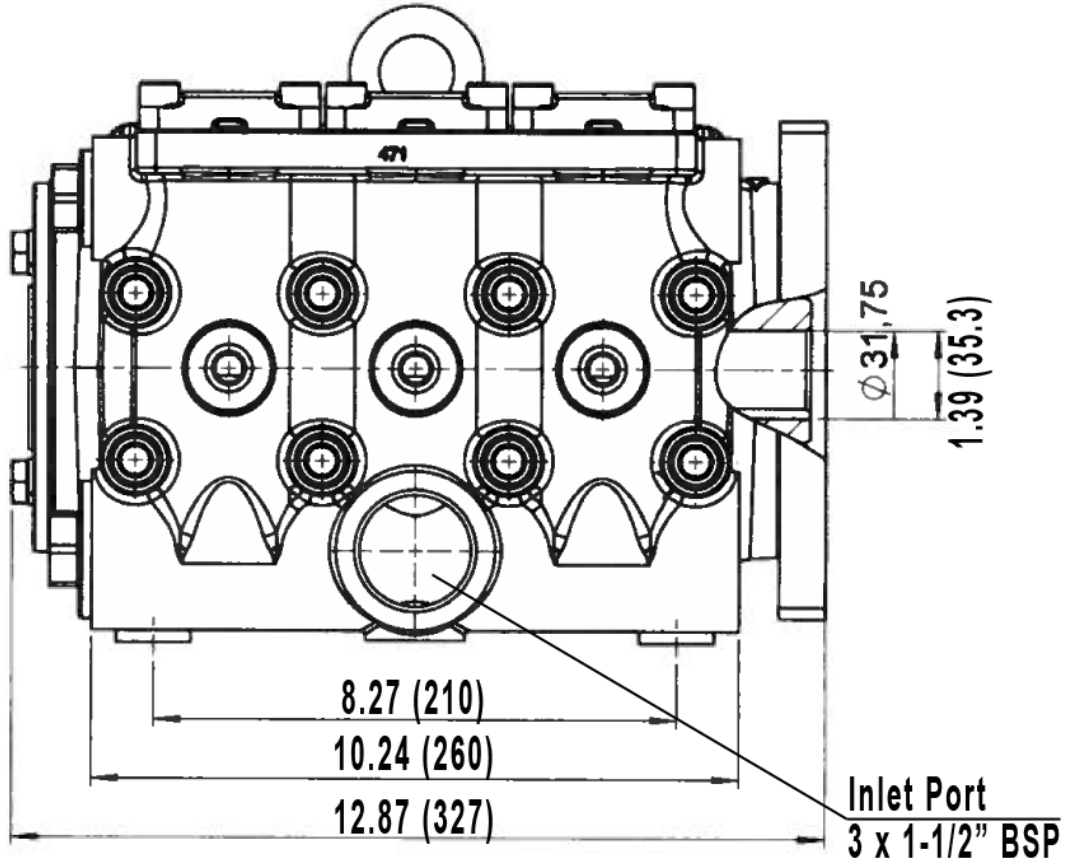
Using a soft tool, press in the outer bearing ring (20) on the non-drive side until it lines up with the outer edge of the bearing hole. Then fit bearing cover (14) together with cap plug (15A) and o-ring (16). Insert shaft with pressed-on bearing parts through the bearing hole on the opposite side. Press in the outer bearing ring (21) and fix this with the bearing cover, keeping the shaft in a vertical position and turning it slowly so that the taper rollers of the bearings lie flat with the outer bearing ring. Check axial bearing clearance and if necessary adjust by placing shims 0.1mm (20A) under (14) and (14A). The shaft should turn easily with very little clearance. Tighten hexagon socket screws on connecting rod (24) to 22 ft.-lbs. (30 Nm).

Important! A little clearance must exist to enable slight sideward movement of the connecting rod on its journal.

Important! The 1/2" BSP connection in the crankcase serves the purpose of draining leakage water. The connection should not be closed (see the drawing to the right).



GP5128HS 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 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.



GIANT INDUSTRIES, INC.,
900 N. Westwood Ave., Toledo, Ohio 43607
Phone (419) 531-4600, FAX (419) 531-6836,
www.giantpumps.com
© Copyright 2015 Giant Industries, Inc.