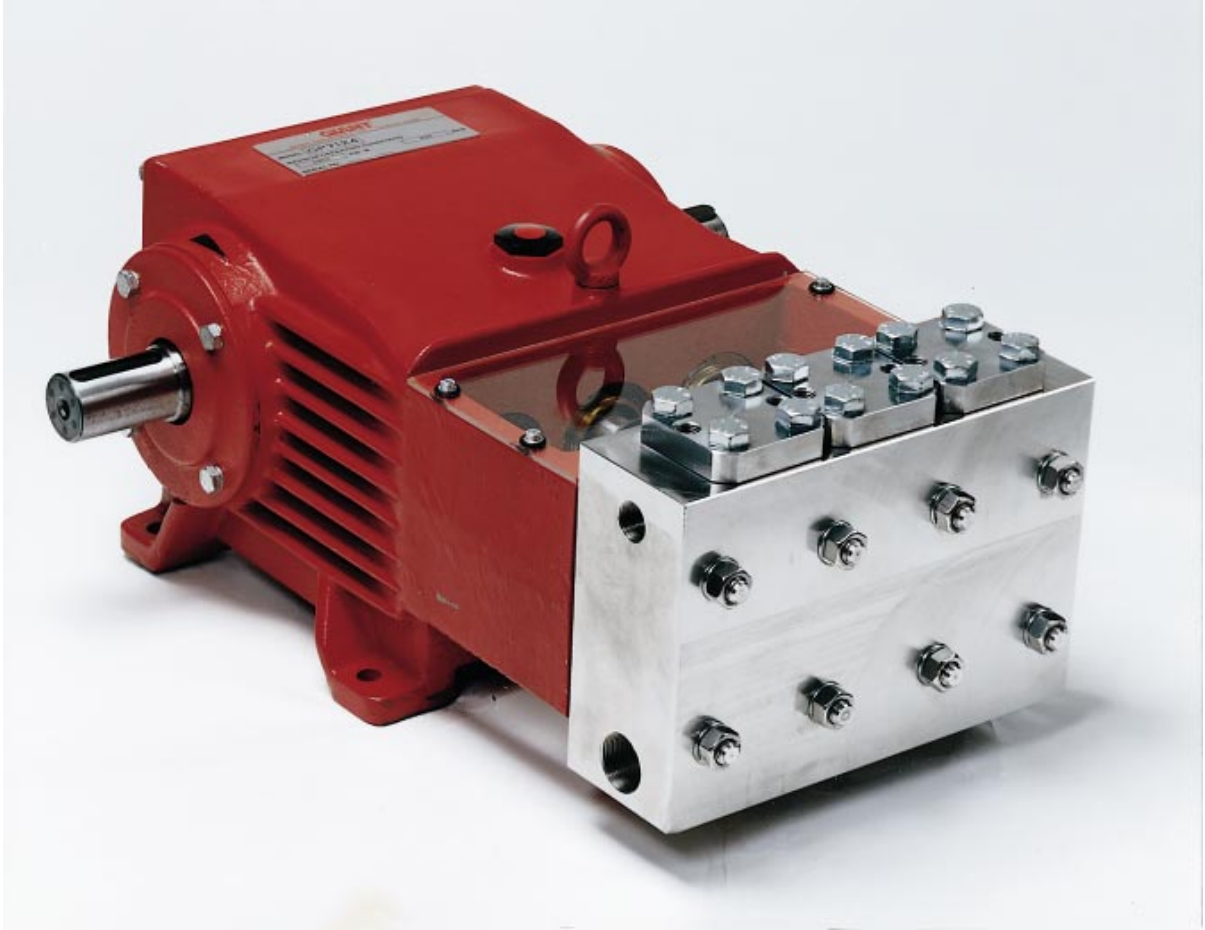


Triplex Ceramic
Plunger Pump
Operating Instructions/
Manual

Model GP6124 & GP6128



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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.
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 charts on pages 3 and 6.

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.

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 the crankcase so that oil level is between the two lines on the oil dipstick. **DO NOT OVERFILL.**

SAE 80 Industrial Gear oil may be used.

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 GP6124

Volume	Up to 12.8 GPM
Discharge Pressure	Up to 5800 PSI
Speed	Up to 800 RPM
Inlet Pressure	Up to 90 PSI ¹
Plunger Diameter	24mm
Plunger Stroke	48mm
Crankshaft Diameter	42mm
Key Width	12mm
Crankshaft Mounting	Either side
Shaft Rotation	Top of pulley towards manifold
Temperature of Pumped Fluids	Up to 140 °F
Inlet Ports	(2) 1 1/2" NPT
Discharge Ports	(2) 1" NPT
Weight	309 lbs.
Crankcase Oil Capacity	1.9 Gal.
Fluid End Material	Stainless Steel

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.

NOTES: ¹ Positive inlet pressures are recommended!

HORSEPOWER RATINGS:

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:

$$HP = (GPM \times PSI) / 1400$$

GP6124 HORSEPOWER REQUIRMENTS					
RPM	GPM	1000 PSI	2500 PSI	4000 PSI	5800 PSI
400	6.4	4.6	11.4	18.3	26.5
500	8.0	5.7	14.3	22.9	33.2
600	9.6	6.9	17.2	27.5	39.8
700	11.2	8.0	20.0	32.0	46.4
800	12.8	9.2	22.9	36.6	53.1

GP6124 & GP6128 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	13200	Crankcase	1	40	13398	Seal Sleeve (GP6124)	3
2	13000	Oil Filler Plug Assembly	1	40	13221	Seal Sleeve (GP6128)	3
4	13201	Crankcase Cover	1	41	13399	Seal Case (GP6124)	3
5	13202	O-Ring, Crankcase Cover	1	41	13222	Seal Case (GP6128)	3
8	13203	Oil Dip Stick	1	41A	12055	O-Ring (GP6124)	6
9	01009	O-Ring, Dip Stick	1	41A	07721	O-Ring (GP6128)	3
10	13133	Hexagon Screw	12	41B	07693	Support Ring (GP6124)	6
11	13134	Spring Washer	12	41B	13223	Support Ring (GP6128)	3
12	07109	Drain Plug	5	41C	12055	O-Ring (GP6128)	3
13	07182	Gasket, Drain Plug	2	41D	07693	Support Ring (GP6128)	3
14	13204	Bearing Cover	2	42	13400	Grooved Ring (GP6124)	3
15	13205	Radial Shaft Seal	2	42	07173	Tension Spring (GP6128)	3
16	08055	O-Ring	2	43	07685	Packing (GP6124)	3
20	13206	Taper Roller Bearing	2	43	13368	Support Ring (GP6128)	3
20A	13207	Fitting Disc (Shim)	1-5	43A	07718	Support Ring (GP6124)	6
21	13208	Shaft Protector	1	44	13401	Guide Ring (GP6124)	3
22	13209	Crankshaft	1	44	13369	V-Sleeve (GP6128)	6
23	08213	Key	1	44A	13370	Pressure Ring (GP6128)	3
24	13211	Connecting Rod Assy.	3	45	13238	Leakage Seal (GP6124)	3
25	13212	Crosshead Assy.	3	45	13228	Leakage Seal (GP6128)	3
28	13213	Crosshead Pin	3	46	07644	Threaded Pipe	3
30	13214	Cover Plate	1	49	13159	Stud Bolt	8
30A	07225-0100	Hexagon Screw	4	49A	13160	Nut	8
30B	13136	Grommet	4	49C	13162	Centering Stud	2
30C	07622	Washer	4	50	13229	Valve Casing	1
31	07623	Eye Bolt	1	51A	07064	Valve Seat	6
32	06118	Radial Shaft Seal	3	51B	13130	Valve Plate (GP6124)	6
32A	13215	Grooved Ring	3	51B	07063	Valve Plate (GP6128)	6
33	13216	Seal Retainer	3	51C	07062	Valve Spring	6
33A	07721	O-Ring	3	51D	07066	Spacer Pipe	6
33B	13217	Circlip	3	56	06077	Tensioning Plug	3
34	13218	Flinger	3	56A	07150	O-Ring	12
36	13219	Plunger Connection (GP6128)	3	56B	06266	Support Ring	3
36A	07125	Centering Sleeve (GP6128)	3	56C	06078	Spring	3
37	13397	Plunger Pipe (GP6124)	3	57	13230	Spacer Ring	3
37	13220	Plunger Pipe (GP6128)	3	59	07661	Copper Ring	3
38	07131	Tensioning Screw (GP6128)	3	60	13044	Plug	1
39	07755	Copper Ring (GP6128)	3	61	13045	Plug	1
				66	13362	Disc, Crankshaft	1
				67	13358	Inner Hexagon Screw	1

GP6124 & GP6128 REPAIR KITS

Plunger Packing Kits

GP 6124		# 09311
<u>Qty.</u>	<u>Part #</u>	<u>Description</u>
3	07721	O-Ring
6	07693	Support Ring
6	12055	O-Ring
3	07685	Packing
3	13400	Grooved Ring
3	13238	Leakage Seal
6	07718	Support Ring

GP 6128		# 09302
<u>Qty.</u>	<u>Part #</u>	<u>Description</u>
3	07721	O-Ring
3	13223	Support Ring
3	12055	O-Ring
3	07693	Support Ring
6	13369	V-Sleeve
3	13228	Leakage Seal

Valve Assembly Kits

GP6124		# 09312
<u>Qty.</u>	<u>Part #</u>	<u>Description</u>
6	07064	Valve Seat
6	13130	Valve Plate
6	07062	Valve Spring
12	07150	O-Ring
3	06266	Support Ring

GP6128		# 09303
<u>Qty.</u>	<u>Part #</u>	<u>Description</u>
6	07064	Valve Seat
6	07063	Valve Plate
12	07150	O-Ring
3	06266	Support Ring

Oil Seal Kit

# 09304		
<u>Qty.</u>	<u>Part #</u>	<u>Description</u>
3	06118	Radial Shaft Seal
3	13215	Grooved Ring
3	07721	O-Ring

Specifications Model GP6128

Volume	Up to 18.0 GPM
Discharge Pressure	Up to 4000 PSI
Speed	Up to 800 RPM
Inlet Pressure	Up to 90 PSI ¹
Plunger Diameter	28mm
Plunger Stroke	48mm
Crankshaft Diameter	42mm
Key Width	12mm
Crankshaft Mounting	Either side
Shaft Rotation	Top of pulley towards manifold
Temperature of Pumped Fluids	Up to 140 °F
Inlet Ports	(2) 1 1/2" NPT
Discharge Ports	(2) 1" NPT
Weight	309 lbs.
Crankcase Oil Capacity	1.9 Gal.
Fluid End Material	Stainless Steel

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.

NOTES: ¹ Positive inlet pressures are recommended!

HORSEPOWER RATINGS:

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:

$$HP = (GPM \times PSI) / 1400$$

GP6128 HORSEPOWER REQUIREMENTS					
RPM	GPM	1000 PSI	2000 PSI	3000 PSI	4000 PSI
400	18.0	6.2	12.4	18.6	24.8
500	15.8	7.8	15.6	24.2	31.1
600	13.5	9.3	18.6	27.9	37.2
700	11.3	10.9	21.8	32.7	43.5
800	9.0	12.4	24.9	37.2	49.6

REPAIR INSTRUCTION - GP6124 & GP6128

To Check Valves

Loosen plugs (56) and take out complete valve (51) with a slide hammer (provided with pump). With a bent piece of wire, take out o-rings (56A) located between the suction and discharge valves. To dismantle the valves, carefully tap the valve plate (51B) with a bolt until the valve seat (51A) is pushed out of the spacer pipe (51D). Check the sealing surfaces and replace all worn parts. Check the o-rings. When reinstalling the valve, particular care must be taken so that the o-rings sit properly in their fittings in the valve casing. Tighten the plugs (56) to 160 ft.-lbs..

To Check Seals and Plunger Pipe

Loosen nuts (49A) and remove the pump head. Separate the plunger connection (36) from the crosshead assembly (25) by means of two open-end wrenches (size 22mm and 27mm). Pull seal sleeves (40) out of their fittings in the crankcase (1). Take seal case (41) out of seal sleeve (40). Examine plunger (37), guide ring/v-sleeve (44) and seals (42, 43, 45). Check o-rings (41A and 41C) and support rings (41B and 41D). Replace worn parts. Grease seals with Silicone before reinstalling. Replace plunger (37) and tighten to 355 in.-lbs.

IMPORTANT: Do not loosen the three plunger screws (36) before the valve casing (50) has been removed; otherwise, the tension screw (38 for GP6128) or plunger (37 for GP6124) could hit against the spacer pipe (51D) when the pump is being turned.

For the GP6128, the seal unit (43, 44, 44A) is loaded by spring (42). Seal life can be increased if the loading allows for a little leakage. This assists lubrication and keeps the seals cool. It is therefore not necessary to replace the seals before the leakage becomes too heavy and causes output and operating pressure to drop. When reassembling, tighten plunger (37) to 33 ft.-lbs.

Check o-rings on seal case (41). Clean surfaces of seal sleeves in gear box and sealing surfaces of valve casing. Push valve casing carefully onto o-rings of seal case and centering studs (49C). Tighten nuts (49A) to 103 ft.-lbs.

To Disassemble Gear End

Take out plunger and seal sleeves as described above. Drain oil. After removing the circlip ring (33B), pry out seal retainer (33) with a screw driver. Check seals (32, 32A, 33A) and surfaces of crosshead. Remove crankcase cover (4). Loosen inner hexagon screws on the connecting rods (24) and push connecting rod halves as far into the crosshead guide as possible.

IMPORTANT: Connecting rods are marked for identification. Do not twist con rod halves. Con rod is to be reinstalled in the same position on shaft journals. Check surfaces of connecting rod and crankshaft (22). Take out bearing cover to one side and push out crankshaft taking particular care that the connecting rod does not get bent.

IMPORTANT: Seal (32A) must always be installed so that the seal lip on the inside diameter faces the oil.

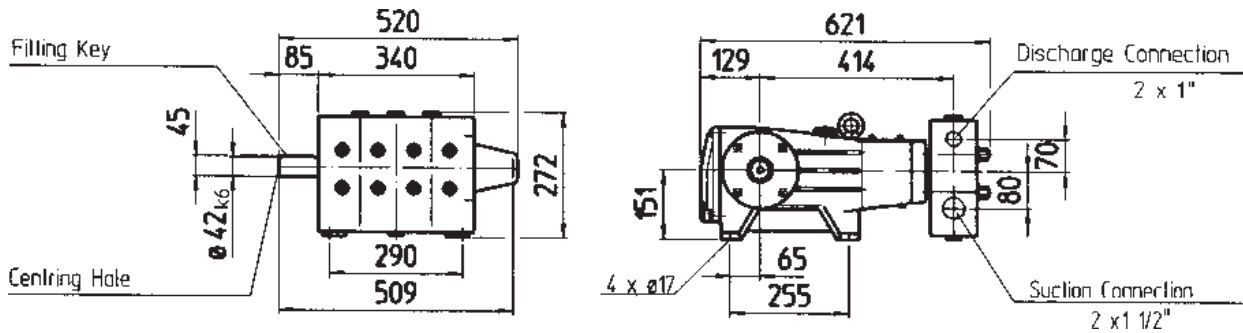
Reassemble in reverse order: Regulate axial bearing clearance - minimum 0.1mm, maximum 0.15mm - by means of fitting disc (20A). Shaft should turn easily with little clearance. Tighten inner hexagon screws (10) to 355 in.-lbs.

IMPORTANT: Connecting rod has to be able to be slightly moved sidewise at the stroke journals.

GP6124 & GP6128 TORQUE SPECIFICATIONS

<u>Position</u>	<u>Item#</u>	<u>Description</u>	<u>Torque Amount</u>
10	13133	Inner Hexagon Screw	355 in.-lbs.
36	13219	Plunger Connection	33 ft.-lbs.
38	07131	Tensioning Screw	355 in.-lbs.
49A	13160	Nut, Valve Casing	103 ft.-lbs.
56	13371	Tensioning Plug	160 ft.-lbs.

GP6124 & GP6128 DIMENSIONS



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.