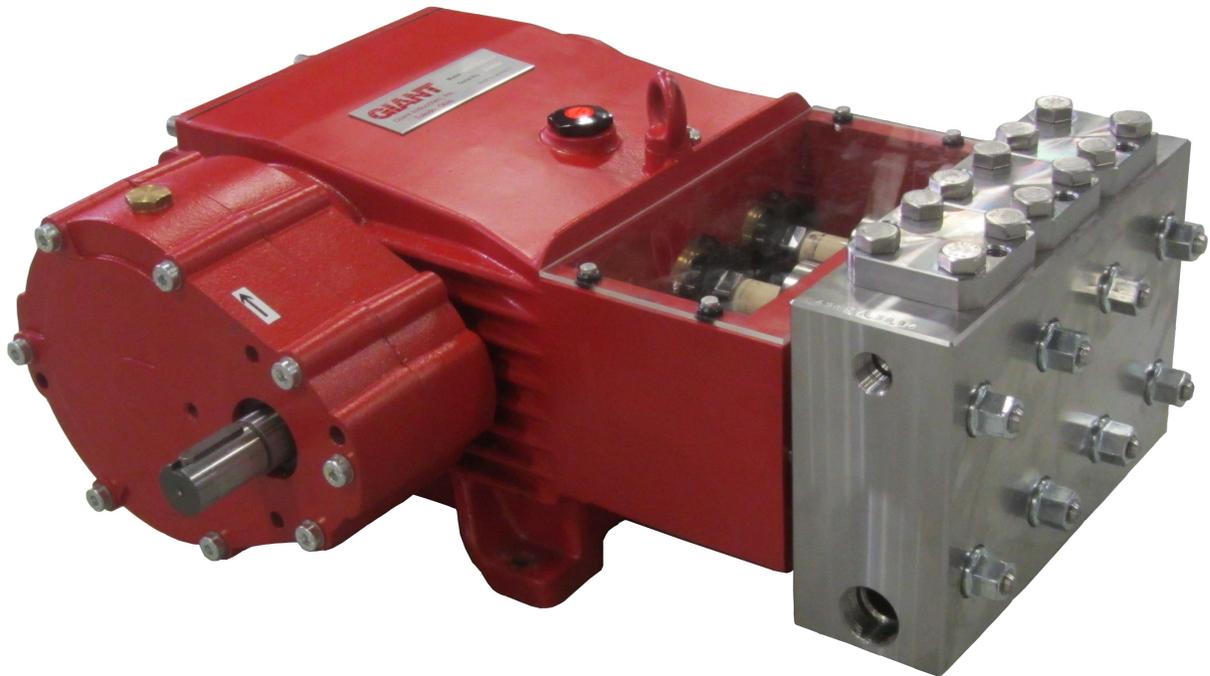


Models

GP7532GB

Triplex Ceramic
Plunger Pump
Operating Instructions/
Repair and Service Manual

Gearbox Versions for Pinion Shaft Drives



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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 ro-

tation 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 pages 3 & 6. When the pump is operating, the exposed shaft side, the driven shaft side, and its coupling must be covered by a protective guard. The plunger area must also be covered by the protective plate (30) Do not step on the protective plate (30) or put weight on it.

6. 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 page 3.

7. 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.

8. The service life of the seals is maximized if there is a minimal amount of leakage. A few drops of water can drip from each plunger every minute. Leakage must be examined every day. If the leakage becomes excessive (constant dripping), the plunger seals must be changed.

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 the oil level is between the two lines on the oil dipstick. DO NOT OVERFILL. **SAE 80W-90 Industrial Gear Lube Oil may be used (Giant's p/n 01154).** 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.

Note: When operating in areas with high humidity or large temperature fluctuations, the oil must be

changed immediately if condensate or frothing oil occurs in the crankcase.

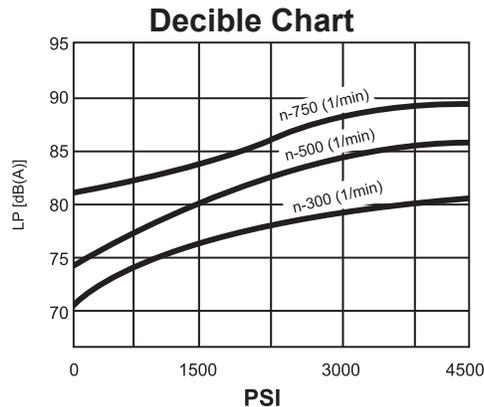
2. Pump operation must not exceed rated pressure, volume, or RPM. A pressure relief device must be installed in the discharge of the system.
3. Acids, alkalines, or abrasive fluids cannot be pumped unless approval in writing is obtained before operation from Giant Industries, Inc.
4. **Important!** If 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.

GP7532GB Pump Specifications

	U.S.	Metric
Maximum Volume**	23.4 GPM	88.5 L/min
Maximum Discharge Pressure**	4350 PSI	300 Bar
Maximum Speed**	750 RPM	750 RPM
Inlet Pressure	-4.35 to 145 PSI	-0.3 to 10 Bar
Plunger Diameter	1.3"	32 mm
Plunger Stroke	2.0"	52 mm
Pinion Shaft Diameter	1.36"	35 mm
Key Width	A10x8x50 mm	
Crankshaft Mounting	Either side	
Shaft Rotation	Pinion shaft towards back of pump	
Temperature of Pumped Fluids	140 °F	60 °C
Inlet Ports	(2) 1 1/4" NPT	
Discharge Ports	(2) 3/4" NPT	
Weight	470 lbs.	213 kg.
Crankcase Oil Capacity	2.1 gallons	8.0 L
Fluid End Material	Stainless Steel	
Volumetric Efficiency @ 700 RPM	94%	
Mechanical Efficiency @ 700 RPM	83%	

**This figure is the maximum amount for this pump. For continuous duty and/or with water warmer than 140 °F (60 °C), these values should be reduced by 10%.

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.



GP7532GB	
Gear Ratios and Input Speeds	
Gear Ratio	Input Speed
1.67:1	1500
2.0:1	1800
2.44:1	2200

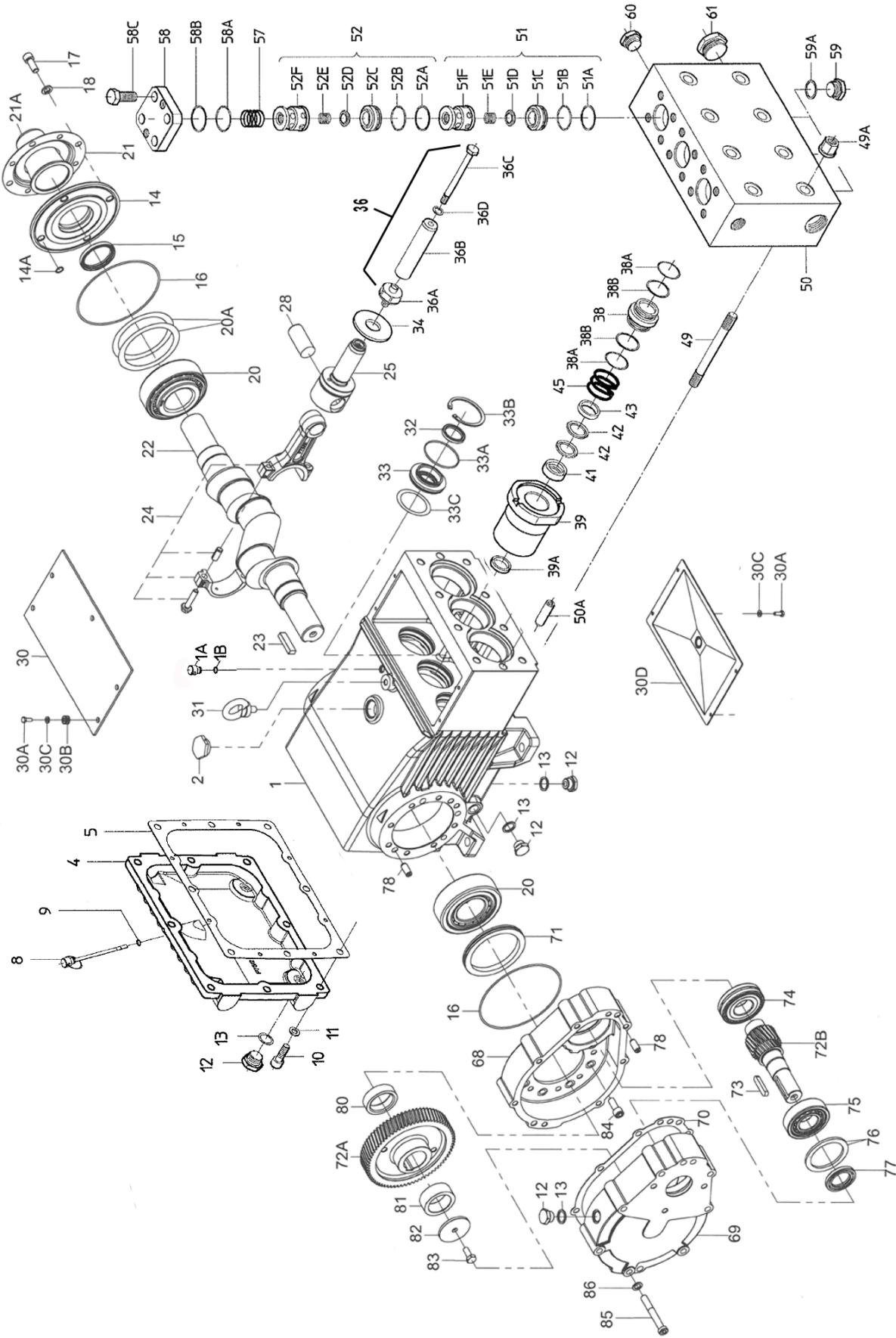
HORSEPOWER RATINGS:

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:

$$\frac{\text{GPM} \times \text{PSI}}{1450} = \text{hp}$$

Exploded View - GP7532GB



GP7532GB 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	05769	Crankcase	1	45	06098	Tension Spring	3
1A	05525	Head for Oil Dipstick	1	49	13159	Stud Bolt	8
1B	01009	O-Ring	1	49A	13160	Nut	8
2	13000	Oil Filler Plug Assembly	1	50	06798	Valve Casing	1
4	07601	Crankcase Cover	1	50A	13162	Cylinder Stud	2
5	05798	Seal for Cover	1	51	13146	Inlet Valve Assy.	3
8	07603	Oil Dip Stick	1	51A	12056	Support Ring	3
9	01009	O-Ring, Dip Stick	1	51B	07354	O-Ring	3
10	22706	Hexagon Screw	8	51C	13131	Inlet Valve Seat	3
11	06725	Spring Washer	8	51D	13130	Valve Plate	3
12	07109	Drain Plug	5	51E	07062-0100	Valve Spring	3
13	06272	Copper Seal for 12	5	51F	13147	Spacer Pipe	3
14	05770	Bearing Cover	1	52	13148	Discharge Valve Assy.	3
14A	12204	O-Ring	4	52A	12056	Support Ring	3
15	05771	Radial Shaft Seal	1	52B	07354	O-Ring	3
16	05772	O-Ring	2	52C	13149	Discharge Valve Seat	3
17	05642	Inner Hexagon Screw	4	52D	13130	Valve Plate	3
18	05039	Spring Ring	4	52E	07062-0100	Valve Spring	3
20	05773	Taper Roller Bearing	2	52F	13147	Spacer Pipe	3
20A	05774	Fitting Disc (Shim)	1-5	57	06078	Compression Spring	3
21	05645	Shaft Guard Holder	1	58	07699	Plug	3
21A	05646	Shaft Guard	1	58A	07700	O-Ring	3
22	05775	Crankshaft	1	58B	07693	Support Ring	3
23	05776	Key	1	58C	07702	Hexagon Screw	12
24	05777	Connecting Rod Assy.	3	59	07703	Plug, 3/4"	3
25	05778	Crosshead Assy.	3	59A	07704	Copper Ring for 59	3
28	05779	Crosshead Pin	3	60	04366	Plug, 3/4" NPT	1
30	07619	Cover Plate	1	61	12251	Plug, 1-1/4" NPT	1
30A	07225-0100	Hexagon Screw	9	68	05782	Bottom Casing for Gear	1
30B	13136	Grommet	4	69	05783	Top Casing for Gear	1
30C	08280	Disc	8	70	05784	Gear Seal	1
30D	13154	Cover	1	71	05785	Centering Ring	1
31	07623	Eye Bolt	1	72A/B	04156	Gear Wheel Set, i=2.44	1
32	07624	Radial Shaft Seal	3	73	13243	Fitting Key	1
33	07626	Seal Retainer	3	74	05787	Self-Aligning Roller Bearing	1
33A	07627	O-Ring for Seal Retainer	3	75	05700	Cylinder Roller Bearing	1
33B	07628	Circlip for 33	3	76	07117	Fitting Disc	5
33C	07249	Fitting Disc	3	77	05701	Radial Shaft Ring	1
34	13137	Flinger	3	78	05665	Cylindrical Pin	4
36	06091	Plunger Assembly (36A-36D)	3	80	05790	Spacer Ring 1 for Gear	1
36A	07667	Plunger Connection	3	81	05791	Spacer Ring 2 for Gear	1
36B	06092	Plunger Pipe	3	82	05802	Fixing Plate for Gear	1
36C	07664	Tensioning Screw	3	83	13358	Hexagon Screw	1
36D	07665	Copper Ring	3	84	05792	Hexagon Socket Screw	7
38	06093	Seal Case	3	85	05702	Hexagon Socket Screw	8
38A	13141	O-Ring, Seal Case	6	86	07159	Washer	8
38B	13142	Support Ring	6		07662	Tool for valve assembly (not shown)	1
39	06094	Seal Sleeve	3				
39A	13360	Grooved Ring	3		04367	Manifold Assembly (50-61 [w/o 51A], 3x 51 A-B, 51 D-F and 52C)	1
41	06095	Pressure Ring	3				
42	06096	V-Sleeve	6				
43	06097	Sleeve Support Ring	3				

GP7532GB PUMP REPAIR KITS

Plunger Packing Kit - # 09519

<u>Item</u>	<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
38A	13141	O-Ring, Seal Case	6
38B	13142	Support Ring	6
39A	13360	Grooved Ring	3
42	06096	V-Sleeve	6

Valve Assembly Kit - # 09520

<u>Item</u>	<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
51A	12056	Support Ring	6
51B	07354	O-Ring	6
51C	13131	Inlet Valve Seat	3
51D	13130	Valve Plate	6
51E	07062-0100	Valve Spring	6
52C	13149	Discharge Valve Seat	3
58A	07700	O-Ring	3
58B	07693	Support Ring	3

Oil Seal Kit - # 09221

<u>Item</u>	<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
32	07624	Radial Shaft Seal	3
33A	07627	O-Ring	3

GP7532GB TORQUE SPECIFICATIONS

<u>Position</u>	<u>Item#</u>	<u>Description</u>	<u>Torque Amount</u>
24	05777	Fitting Screw for Connecting Rod	30 ft.-lbs. (40 Nm)
36A	07667	Plunger Base	33 ft.-lbs. (45 Nm)
36C	07664	Tensioning Screw	30 ft.-lbs. (40 Nm)
49A	13160	Nut	103 ft.-lbs. (140 Nm)
58C	07702	Hexagon Screw	155 ft.-lbs. (210 Nm)

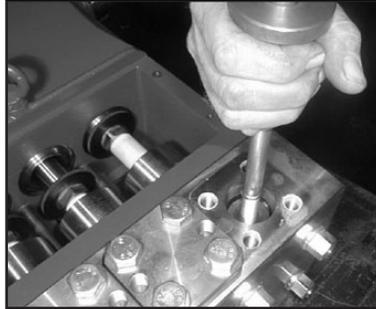
Preventative Maintenance Check-List & Recommended Spare Parts List						
Check	Daily	Weekly	50hrs	Every 500 hrs	Every 1500 hrs	Every 3000 hrs
Oil Level/Quality	X					
Oil Leaks	X					
Water Leaks	X					
Belts, Pulley		X				
Plumbing		X				
Recommended Spare Parts						
Oil Change (1 Gal) p/n 1154			X	X		
Plunger Packing Kits (1 kit/ pump) (See page 5 for kit list)					X	
Valve Assembly Kit (1 kit/ pump) (See page 5 for kit list)						X
Oil Seal Kit (1 kit/pump) (See page 5 for kit list)					X	

GP7532GB REPAIR INSTRUCTIONS

NOTE: Always take time to lubricate all metal and non-metal parts with a light film of oil before reassembling. This step will help ensure proper fit, at the same time protecting the pump non-metal parts (elastomers) from cutting and scoring.



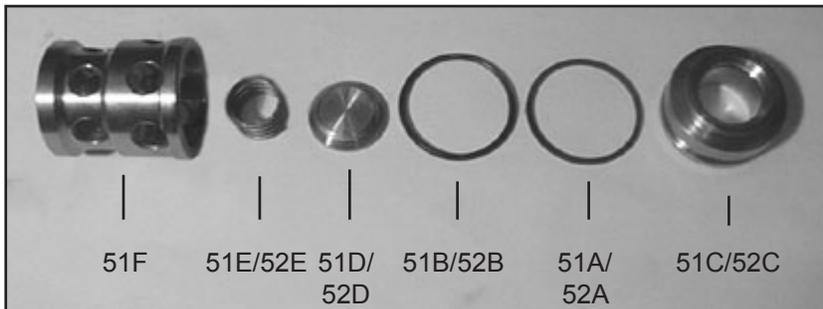
1. Loosen screws (58C), take plugs (58) out of valve casing with two screws.



2. Take out tension spring (57) and complete valve (51) using either valve tool (part #07662) or stud bolt M16.



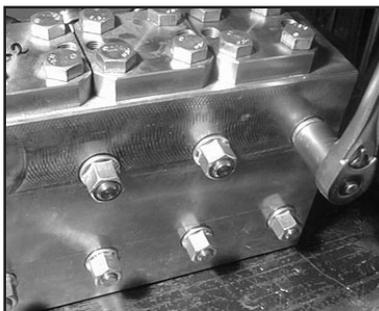
3. Valve seats (51C and 52C) are pressed out of spacer pipe (51F) by hitting the valve plate (51D/52D) with a bolt.



4. Check surfaces of valve plate (51D/52D), valve seat (51C/52C), O-rings (51B, 58A), and support rings (51A, 58B) and replace worn parts.



5. When reassembling: The suction valve seat (51C) is 1mm smaller in diameter than the discharge valve seat (52C). Suction valve seats are marked "S" and always have to be installed first. Discharge valve seats are marked "P" and are always to be installed on top of suction valve. Plugs (58) are to be tensioned down evenly with screws (58C) in a crosswise pattern at 155 ft-lbs. (210 Nm).

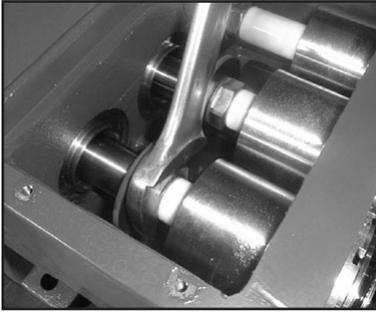


6. Loosen nuts (49A)



7. Remove pump head.

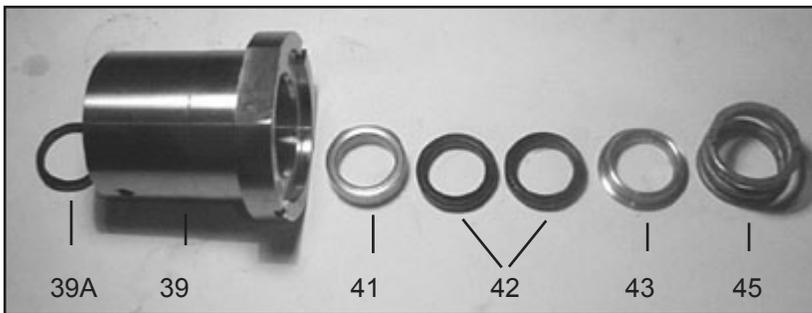
GP7532GB REPAIR INSTRUCTIONS



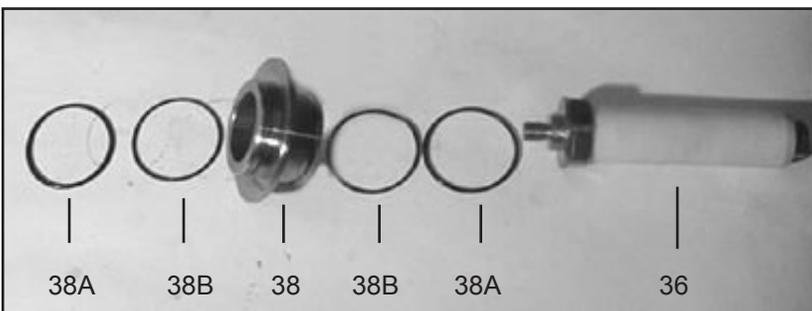
8. Separate plunger (36A) from crosshead (25) by means of one open-end wrench (M36).



9. Pull seal sleeves (39) out of their fittings in the crankcase. Take seal case (38) out of seal sleeve (39).



10. Take tension spring (45) and seal pack (41, 42, 43) out of seal sleeve. Take a thin screw driver and pry out the grooved ring (39A). **Note: This seal (39A) will not be reusable, so replace with a new part.** For the seal-pack (41-43), remove with either a socket wrench or use a screw driver to push against the rear lip of the pressure ring (41) or v-sleeves (42). You will need to remove seals evenly out of the seal sleeve (39). **Be careful not to score the sleeve or metal parts (41 & 43).**



11. Check plunger pipe (36B) and seals (39A, 42) for wear. When replacing plunger pipe (36B), tighten tensioning screw (36C) to 30 ft-lbs (40 NM). If o-rings (38A) or support rings (38B) are damaged, replace with new parts.

GP7532GB REPAIR INSTRUCTIONS

CAUTION: Don't loosen the 3 plunger (36) before the valve casing has been removed otherwise the plunger (36) could hit against the spacer pipe (51F) when the pump is being turned. Seal life can be increased if the pretensioning allows for a little leakage. This assists lubrication and keeps the seals cool. It is therefore not necessary to replace seals before the leakage becomes too heavy and causes output and operating pressure to drop.

MOUNTING VALVE CASING

NOTE: Replace worn parts; grease seals with silicone before installing.

12. Check O-rings (38A) and support rings (38B) on seal case (38). Clean surfaces of seal sleeves in gear box and sealing surfaces of valve casing. Reassemble seal sleeve (39) by placing plunger (36) in seal sleeve; place pressure ring (41), v-sleeves (42), sleeve support ring (43), and tension spring (45) over plunger (36). Place the seal case onto the seal sleeve and press into the crankcase, making sure that the weep hole on the seal sleeve is facing down. Tighten tensioning screw (36C) to 30 ft.-lbs. (40 Nm). Tighten plunger connection (36A) onto crosshead (25) with an open end wrench (M36) to 33 ft.-lbs. (45 Nm).
13. Push valve casing carefully onto O-rings of seal case and centering studs (50A). Tighten nuts (49A) to 103 ft.-lbs. (140 Nm).

TO DISASSEMBLE GEAR

14. Take out plunger (36) and seal sleeves (39) as described above. Drain oil.
15. After removing the circlip ring (33B), lever out seal retainer (33) with a screw driver. Check seals (32,32A,33A) and surfaces of crosshead.
16. Remove crankcase cover (4). Loosen inner hexagon screws on the connecting rods (24) and push con 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.

17. Check surfaces of connecting rod and crankshaft (22). Take out bearing cover (14) to one side and push out crankshaft taking particular care that the connecting rod (24) doesn't bend.

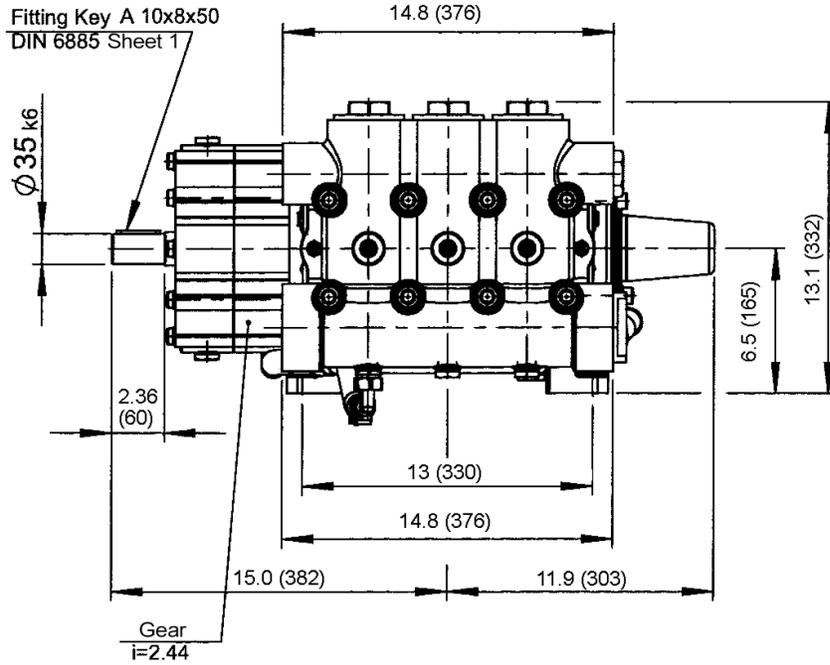
CAUTION: Seal (32A) must always be installed so that the seal-lip on the inside diameter faces the oil. Reassemble in reverse order: Regulate axial bearing clearance - minimum 0.1mm, maximum 0.15mm-by means of fitting disc (20A). The crankshaft (22) should turn easily with little clearance. Tighten fitting screws (24A) to 30 ft.-lbs. (40 Nm).

CAUTION: Connecting rod (24) must have some sidewise movement at the stroke journals.

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 pump for restrictions 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 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
Pump Pressure as Drop at gun Rated, Pressure	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

GP7532GB Pump 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.



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