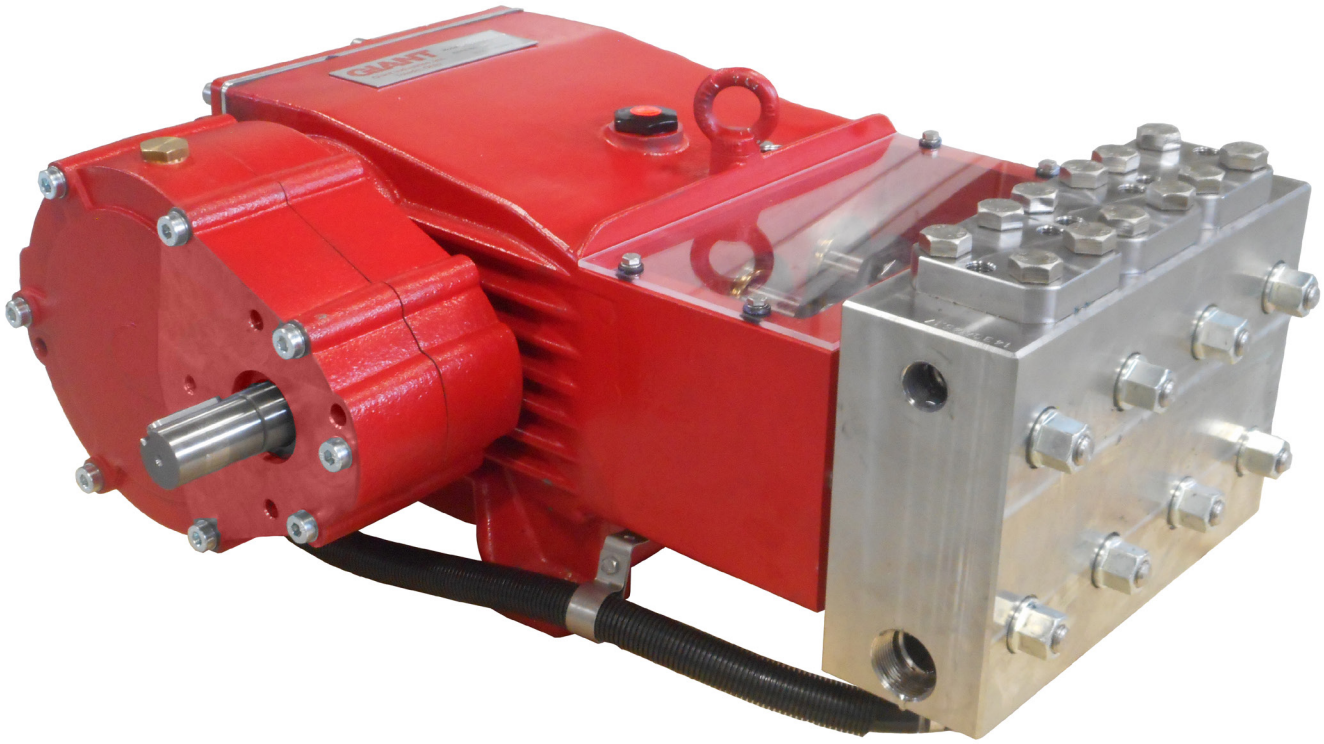
Model GP7636GB

Triplex Ceramic Plunger Pump Operating Instructions/ Repair and Service Manual



GIANT
Performance Under Pressure

Updated 03/25

Contents:

INSTALLATION INSTRUCTIONS

Operation and Maintenance

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

Oil: Use only 1.7 gallons (6.3 liters) of ISO VG-220 synthetic gear oil. Initial change after 50 hours and then after every 200 operating hours. If used less than this, change once per year.

IMPORTANT! When operating in humid areas (or areas with large temperature fluctuations, the oil must be changed immediately (if condensate or frothy oil occurs in the crankcase).

I**MPORTANT!** We recommend that both inlet ports be used in order to ensure cavitation-free operation and optimal suction conditions. If only one connection is use, a safety margin of 3 feet (1 meter) has to be added to the required NPSH.

IMPORTANT! If the pump is mounted on a vehicle with the possibility of unlevelness and/or the pump speed is between 300 & 500 RPM, the volume of oil should be 1.93 gallons (7.3 liters). To check, put the oil dipstick in the bore situated next to the eye bolt.

IMPORTANT! The GP7636GBHS-2.4 pumps has a black arrow on the reduction gear, which shows the preferred direction of rotation. The pump can be delivered either with the gear on the left side or right side (when facing the front of the pump), which eases planning assembled units with regard to the desired direction or rotation. **In either case, the larger gear wheel must rotate towards the front-end of the pump.**

The preferred/optimal direction of rotation ensures that the oil is correctly splashed on the crosshead guides via the motion of the connecting rods, which is a particular advantage where continuous operation is involved.

The pump can also be run against the recommended direction of the rotation if operated periodically or at reduced pressure. If this is the case, the pump has to be run in this direction to smoothen the bearing areas. This is done by a one-time operation at zero pressure for at least 30 minutes; thereafter, the pressure must be slowly increased over the next hour to the desired maximum operating pressure. This should run-in the pump, but you should also check the oil temperature, which should not exceed 140 °F (60 °C).

The torque tension on the valve casing nuts (49A) is to be checked after approximately 200 hours. Please see page 7 for torque values.

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

Safety Rules

The operating instructions must be read and adhered to before performing any work on the pump or complete assembled unit. No responsibility will be carried by us for damage to materials or persons caused by improper handling of our pumps.

Access to the pump is not allowed by unauthorized personnel. As safety valve is to be installed in accordance with the guidelines for liquid spraying units, so that the admissible operating pressure cannot be exceeded by more than 10%. Pumps operating without a safety valve as well as any excess in temperature or speed limits automatically voids the warranty. When the pump is in 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 onto the protective plate (30) or put weight on it.

Before carrying out any maintenance work to the pump or pump unit, the pressure in the discharge line and pump must be at zero. Close off the suction line. Disconnect fuses to ensure that the driving motor cannot accidently get switched on. Before starting the pump, make sure that the pump, the cooling system and all parts on the pressure side of the unit are vented and refilled with pressure at zero.

In order to prevent air or air/water-mixture being absorbed and cavitation occurring, the pump NPSHR (Net Positive Suction Head Required) and water temperature must be adhered to.

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

Giant plunger pumps are only suitable for pumping fresh clean water.

GP7636GB Pump Specifications

	U.S.	Metric
Maximum Volume*	36.4 GPM	137.7 L/min
Maximum Discharge Pressure*	3800 PSI	262 Bar
Maximum Speed*		900 RPM
Inlet Pressure	-4.35 to 145 PSI	-0.3 to 10 Bar
Plunger Diameter	1.4”	36 mm
Plunger Stroke	2.28”	58 mm
Pinion Shaft Bore	1.38”	35 mm
Pinion Shaft Rotation		Towards back of the pump
Temperature of Pumped Fluids	140 °F	60 °C
Inlet Ports		(2) 1 1/4” NPT
Discharge Ports		(2) 3/4” NPT
Weight	476 lbs.	216 kg
Crankcase Oil Capacity	2.1 gallons	8.0 L
Fluid End Material		Stainless Steel

*Intermittent duty only

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.

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:

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

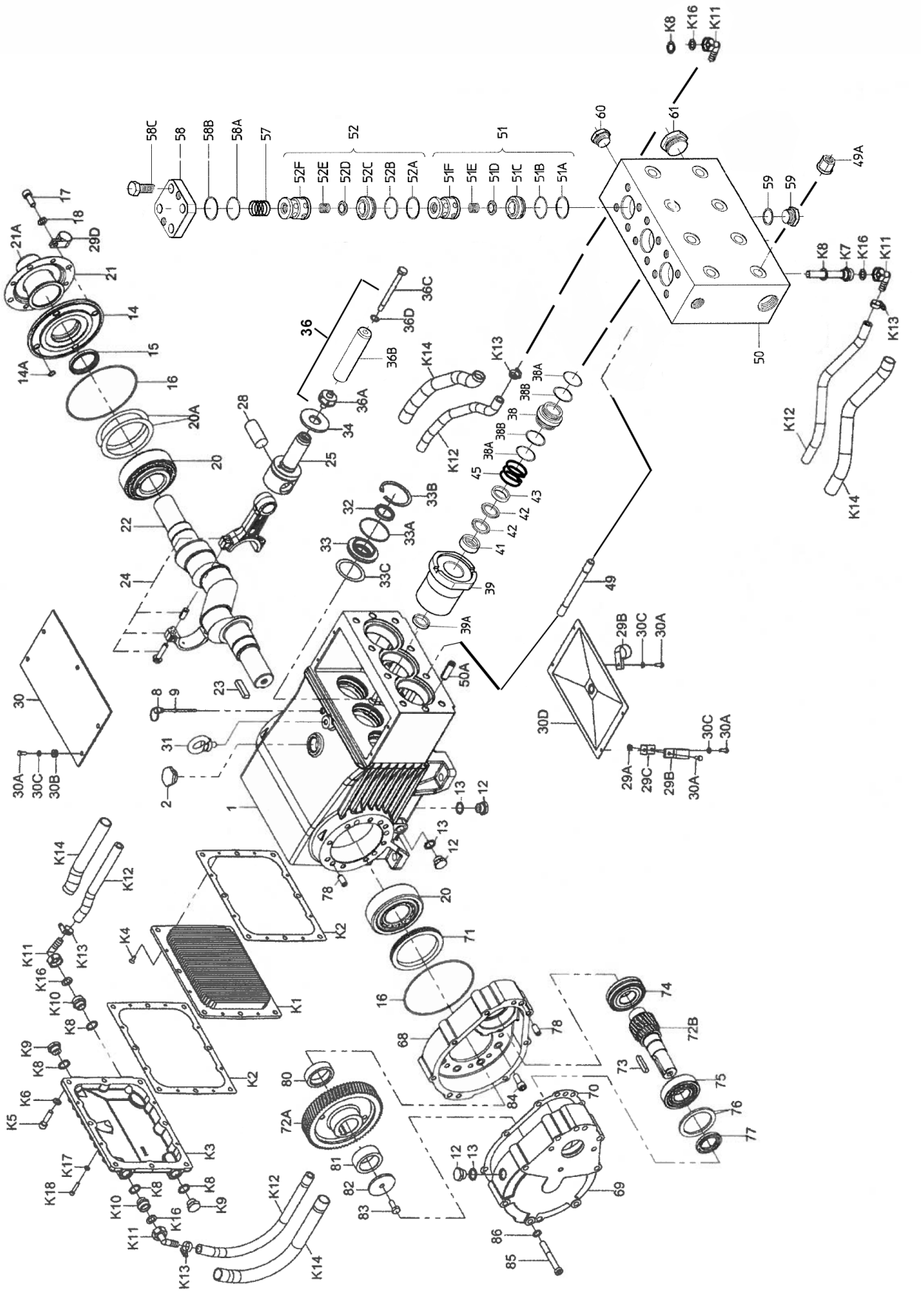
GP7636GB TORQUE SPECIFICATIONS

Position	Item#	Description	Torque Amount
24A	07616	Fitting Screw	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	

Exploded View - GP7636GB Pumps



GP7636GB PARTS LIST

ITEM	PART	DESCRIPTION	QTY.
1	05769	Crankcase	1
2	13000	Oil Filler Plug Assembly	1
8	07603	Oil Dip Stick	1
9	01009	O-Ring, Dip Stick	1
12	07109	Drain Plug	8
13	06272	Copper Seal for 12	8
14	05770	Bearing Cover	1
14A	12204	O-Ring	4
15	05771	Radial Shaft Seal	1
16	05772	O-Ring	2
17	05642	Inner Hexagon Screw	4
18	05039	Spring Ring	4
20	05773	Taper Roller Bearing	2
20A	05774	Fitting Disc (Shim)	1-5
21	05645	Shaft Guard Holder	1
21A	05646	Shaft Guard	1
22	04517	Crankshaft	1
23	05776	Key	1
24	05777	Connecting Rod Assembly	3
25	05778	Crosshead Assembly	3
28	05779	Crosshead Pin	3
29A	07408	Hexagon Nut	1
29B	05383	Bracket 2 f. Cooling Hose	2
29C	05662	Fixing Bracket	1
29D	05381	Bracket 2 f. Cooling Hose	1
30	07619	Cover Plate	1
30A	07225-0100	Hexagon Screw	9
30B	13136	Grommet	4
30C	05053	Disc	8
30D	13154	Cover	1
31	07623	Eye Bolt	1
32	07624	Radial Shaft Seal	3
33	07626	Seal Retainer	3
33A	07627	O-Ring for Seal Retainer	3
33B	07628	Circlip for 33	3
33C	07249	Fitting Disc	3
34	13137	Oil Scraper (Flinger)	3
36	06792	Plunger Assembly (36A-36D)	3
36A	07667	Plunger Connection	3
36B	06793	Plunger Pipe	3
36C	07664	Tensioning Screw	3
36D	07665	Copper Ring	3
38	06093	Seal Case	3
38A	13141	O-Ring, Seal Case	6
38B	13142	Support Ring	6
39	06794	Seal Sleeve	3
39A	13291	Grooved Ring	3
41	06795	Pressure Ring	3
42	06796	V-Sleeve	6
43	06797	Sleeve Support Ring	3
45	06098	Tension Spring	3
49	13159	Stud Bolt	8
49A	13160	Hexagon Nut	8
50	06798	Valve Casing	1
50A	13162	Centering Stud	2
51	13146	Inlet Valve Assembly	3
51A	12056	Support Ring	3
51B	07354	O-Ring	3
51C	13131	Inlet Valve Seat	3

ITEM	PART	DESCRIPTION	QTY.
51D	13130	Valve Plate	3
51E	07062-0100	Valve Spring	3
51F	13147	Spacer Pipe	3
52	13148	Discharge Valve Assembly	3
52A	12056	Support Ring	3
52B	07354	O-Ring	3
52C	13149	Discharge Valve Seat	3
52D	13130	Valve Plate	3
52E	07062-0100	Valve Spring	3
52F	13147	Spacer Pipe	3
57	06078	Compression Spring	3
58	07699	Plug	3
58A	07700	O-Ring	3
58B	07693	Support Ring	3
58C	07702	Hexagon Screw	12
59	07703	Plug, 3/4”	1
59A	07704	Copper Ring for 59	1
60	04366	Plug, 3/4” NPT	1
61	12251	Plug, 1-1/4” NPT	1
62	07662	Tool for valve assembly (not shown)	1
68	05782	Bottom Casing for Gear	1
69	05783	Top Casing for Gear	1
70	05784	Gear Seal	1
71	05785	Centering Ring	1
72A/B	04519	Gear Wheel Set, i=2.25	1
72A/B	04518	Gear Wheel Set, i=2.75	1
73	13243	Fitting Key	1
74	05787	Self-Aligning Roller Bearing	1
75	05700	Cylinder Roller Bearing	1
76	07117	Fitting Disc	1-5
77	05701	Radial Shaft Ring	1
78	05665	Cylindrical Pin	4
80	05790	Spacer Ring 1 for Gear	1
81	05791	Spacer Ring 2 for Gear	1
82	05802	Fixing Plate for Gear	1
83	13358	Hexagon Screw	1
84	05792	Hexagon Socket Screw	7
85	05702	Hexagon Socket Screw	8
86	07159	Washer	8
90	04157	Oil Cooler Assembly	1
K1	05797	Cooling Vane Plate	1
K2	05798	Seal for Gear Cover	2
K3	05799	Gear Cover	1
K4	05029	Hex Head Countersunk Screw	4
K5	05800	Hexagon Socket Screw	8
K6	06725	Washer	8
K7	05755	Connection for Oil Cooler	1
K8	06272	Copper Seal	6
K9	07109	Plug, 1/2” BSP	2
K10	05031	Reducing Nipple	4
K11	05032	U-Joint Connector with Nut	3 or 4
K12	05033	Tube for Cooler	2
K13	05402	Hose Clamp	4
K14	05403	Hose Guard	2
K16	05405	Flat Gasket	4
K17	08280	Washer, GP7655GB Only	4
K18	04158	Hexagon Socket Screw	4

GP7636GB PUMP REPAIR KITS

Plunger Packing Kits - # 09544

Item	Part #	Description	Qty.
38A	13141	O-Ring, Seal Case	6
38B	13142	Support Ring	6
39A	13291	Grooved Ring	3
42	06796	V-Sleeve	6

Oil Seal Kit - # 09221

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

Valve Assembly Kit - #09520

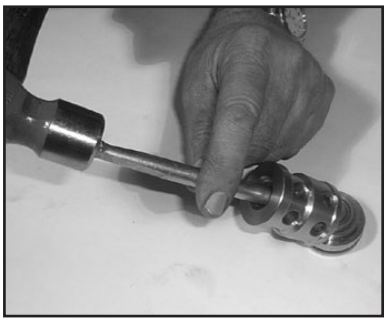
Item	Part #	Description	Qty.
51A	12056	Support Ring	6
51B	07354	O-Ring	6
51C	13131	Inlet Valve Seat	3
51D	13130	Valve Plate	6
51E	07062-0100	Valve Spring	6
52C	13149	Discharge Valve Seat	3
58A	07700	O-Ring	3
58B	07693	Support Ring	3

GP7636GB REPAIR INSTRUCTIONS

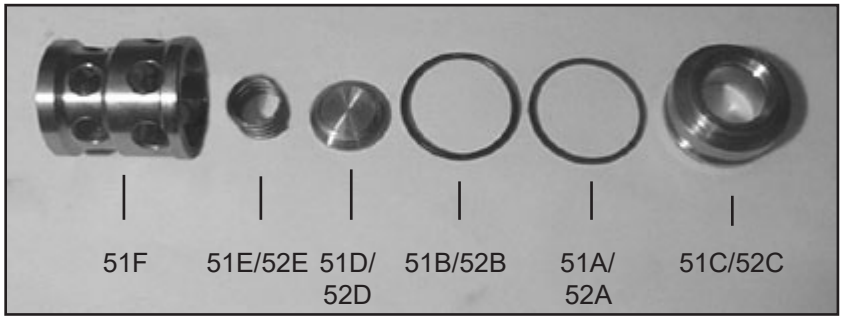
NOTE: Always take time to lubricate all metal and non-metal parts with a light film of oil before reassembling. This step will help ensure proper fit, at the same time protecting the pump non-metal parts (elastomers) from cutting and scoring.

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

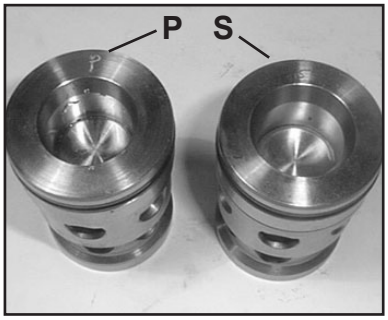
2. Take out tension spring (57) and complete valve (51) using either valve tool (part #07662) or stud bolt M16.



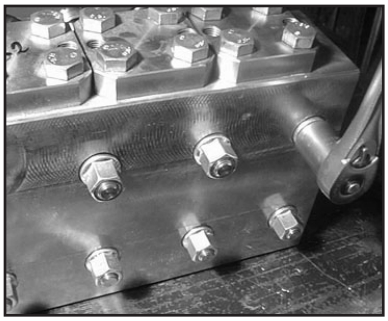
3. Valve seats (51C and 52C) are pressed out of spacer pipe (51F) by hitting the valve plate (51D/52D) with a bolt.



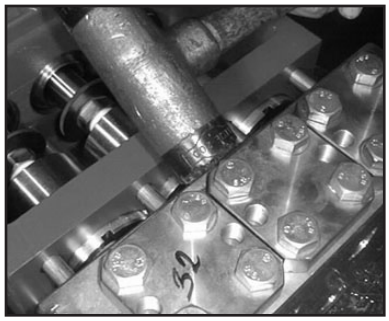
4. Check surfaces of valve plate (51D/52D), valve seat (51C/52C), O-rings (51B, 58A), and support rings (51A, 58B) and replace worn parts.



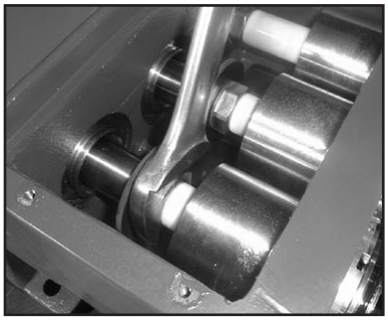
5. When reassembling: The suction valve seat (51C) is 1mm smaller in diameter than the discharge valve seat (52C). Suction valve seats are marked “S” and always have to be installed first. Discharge valve seats are marked “P” and are always tobe installed on top of suction valve. Plugs (58) are to be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



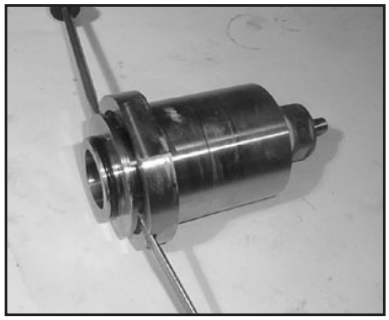
6. Loosen nuts (49A)



7. Remove pump head.

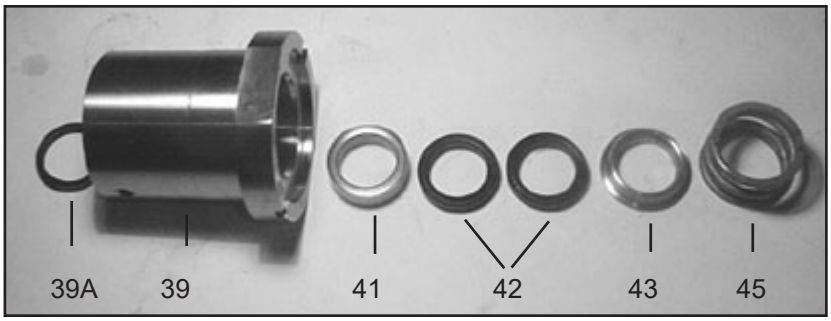


8. Separate plunger (36A) from crosshead (25) by means of one open-end wrench (M36).

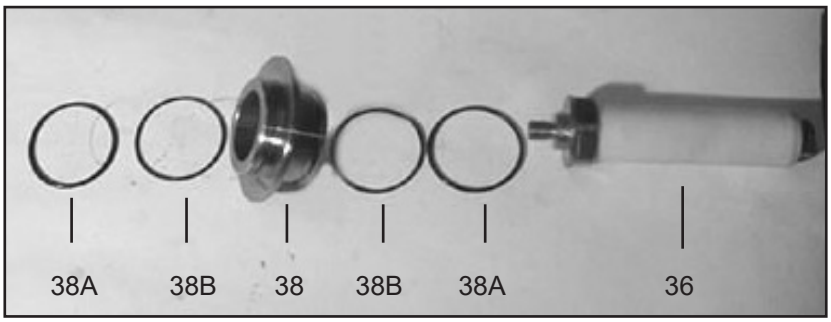


9. Pull seal sleeves (39) out of their fittings in the crankcase. Take seal case (38) out of seal sleeve (39).

GP7636GB REPAIR INSTRUCTIONS



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.

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.

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

GIANT INDUSTRIES, INC. 900 N. Westwood Ave., Toledo, Ohio 43607
Phone: (419)-531-4600 FAX (419)-531-6836, www.giantpumps.com

Performance Under Pressure

03/25 GP7636GB.indd