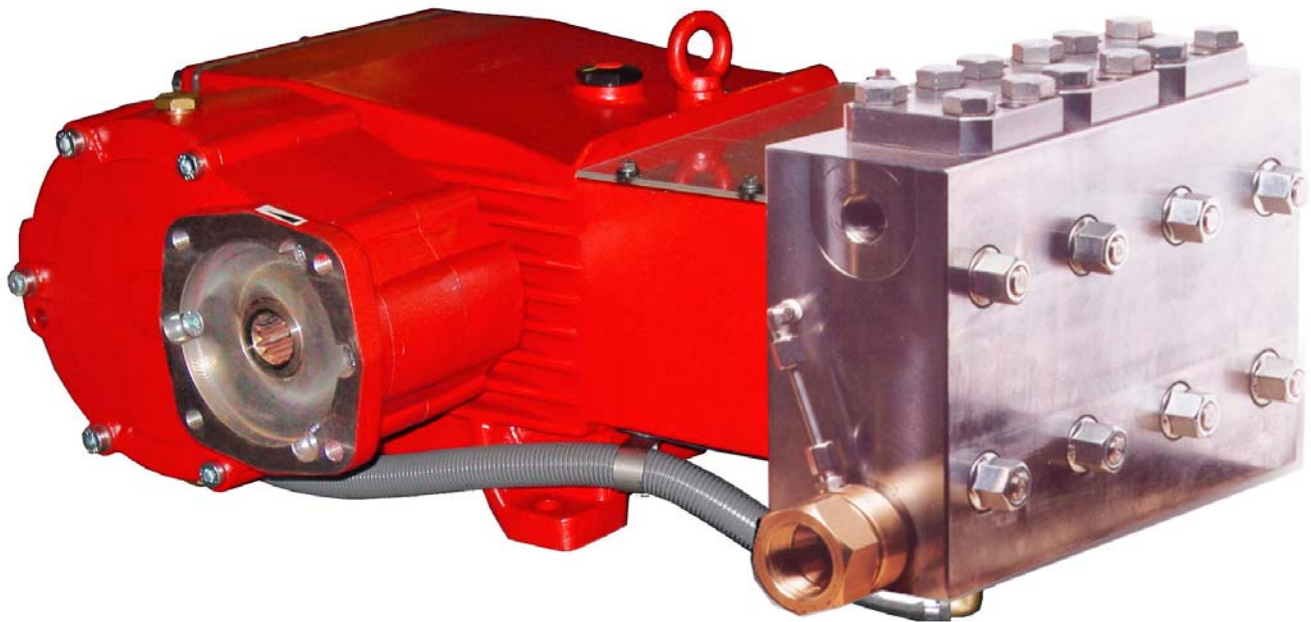


Model GP7522

Triplex Ceramic
Plunger Pump
Operating Instructions/
Repair and Service Manual



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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.

IMPORTANT! To guarantee weep return, it is essential that the inlet line is fitted to the support screw (#62). If the inlet line is mounted to the other side of the pump, then the whole connection part (#'s 62-62B, 64, 69-71) must be fitted to the same inlet side.

3. A tube fitting on the side of the pumphead which allows the circulation of water between the valve casing and seal sleeves to take place. The tube fitting must always be mounted on the same side as the suction line.
4. 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.

5. 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.

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 chart 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.

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 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.

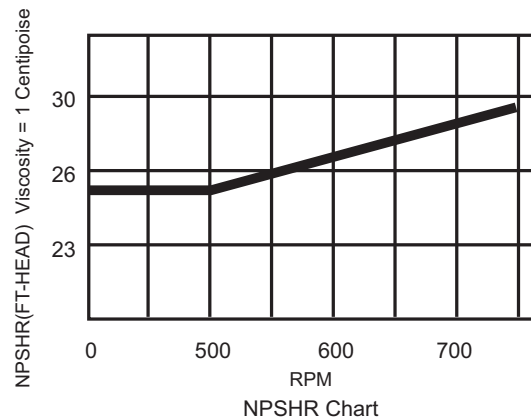
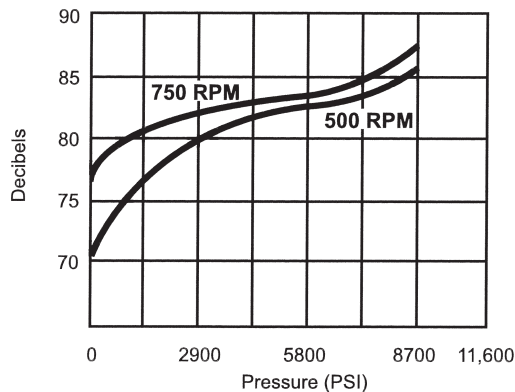
4. Run the pump dry approximately 10 seconds to drain the water before exposure to freezing temperatures.

Specifications Model GP7522

	U.S.	Metric
Volume	9.9 GPM	37.5 L/min
Discharge Pressure	10,150 PSI	700 Bar
Speed		750 RPM
Inlet Pressure	-4.35 to 90 PSI	-0.3 to 10 Bar
Plunger Diameter	0.87"	22mm
Plunger Stroke	1.89"	48mm
Crankshaft Bore		SAE-C Spline 14T 12/24DP
Key Width		14mm
Crankshaft Mounting		Either side
Shaft Rotation		Top of pulley towards manifold
Temperature of Pumped Fluids	140 °F	60 °C
Inlet Ports		(2) 1 1/4" BSP ¹
Discharge Ports		(2) 3/4" BSP ²
Weight	375 lbs.	170 kg
Crankcase Oil Capacity	1.6 Gal.	6 Liters
Fluid End Material		Stainless Steel
Volumetric Efficiency @ 750 RPM		89%
Mechanical Efficiency @ 750 RPM		83%

¹To convert to FNPT threads, add 13377-0100 (Adapter) and 13376-0100 (Seal)

²To convert to FNPT threads, add 14081-0100 (Adapter) and 14082 (Seal)



Horsepower Ratings:

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

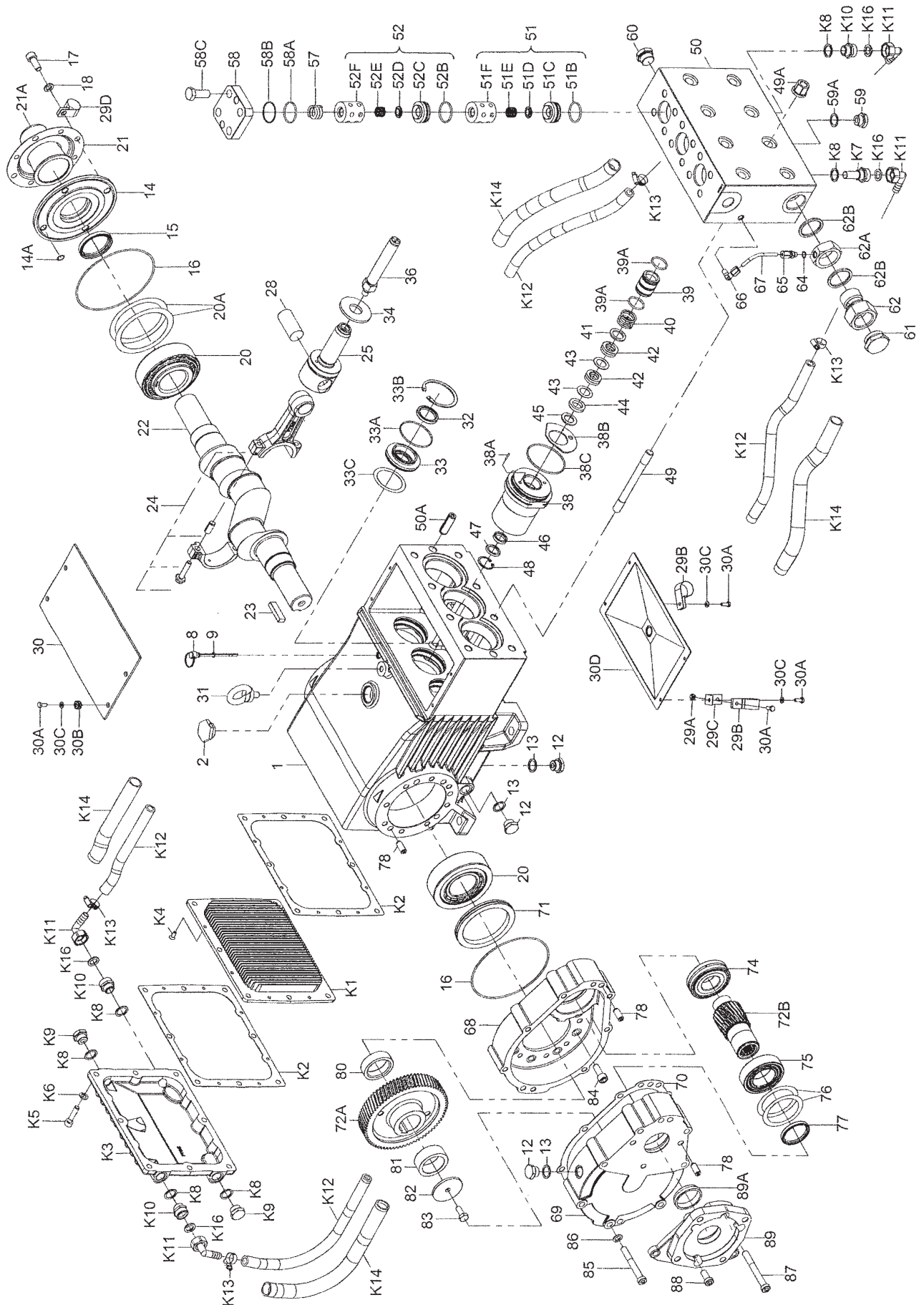
Materials Used for GP7522 Pump:

Manifold: Stainless Steel
 Plungers Hard Metal Coating
 Valves High Grade Stainless Steel
 Seals Graphite Impregnated Rope Packing
 Gear End 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.

System Requirements: No Unloader or Regulator allowed. Must use a safety valve and dump gun.

Exploded View - GP7522



GP7522 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	52	05781	Discharge Valve Assembly (52B-52F)	3
2	13000	Oil Filler Plug Assembly	1	52B	05193	O-Ring	3
8	07603	Oil Dip Stick	1	52C	05195	Discharge Valve Seat	3
9	01009	O-Ring, Dip Stick	1	52D	06761	Valve Plate	3
12	07109	Drain Plug	6	52E	06762	Valve Spring	3
13	06272	Copper Seal for 12	6	52F	06763	Spacer Pipe	3
14	05770	Bearing Cover	1	57	06079	Tension Spring	3
14A	12204	O-Ring	4	58	07699	Plug	3
15	05771	Radial Shaft Seal	1	58A	07700	O-Ring	3
16	05772	O-Ring	2	58B	07693	Support Ring	3
17	05642	Hexagon Socket Screw	4	58C	07702	Hexagon Screw	12
18	05039	Spring Washer	4	59	07109	Drain Plug	1
20	05773	Taper Roller Bearing	2	59A	06272	Copper Ring for 59	1
20A	05774	Fitting Disc (Shim)	1-5	60	13150-0100	Plug 3/4" BSP	1
21	05645	Shaft Guard Holder	1	61	13151	Plug 1-1/4" BSP	1
21A	05646	Shaft Guard	1	62	06765	Connecting Screw	1
22	05775	Crankshaft	1	62A	06766	Connection Ring	1
23	05776	Key	1	62B	06767	Seal Ring	4
24	05777	Connecting Rod Assy.	3	64	07204-0100	Steel Ring	2
25	05778	Crosshead Assy.	3	65	06588	Screw-In Connector	2
28	05779	Crosshead Pin	3	66	06768	Threaded Elbow	2
29A	07408	Hexagon Nut	1	67	06769	Curved Leakage Pipe	2
29B	05383	Bracket 2 f. Cooling Hose	2	68	05782	Bottom Casing for Gear	1
29C	05662	Fixing Bracket	1	69	05783	Top Casing for Gear	1
29D	05381	Bracket 2 f. Cooling Hose	1	70	05784	Gear Seal	1
30	07619	Cover Plate	1	71	05785	Centering Ring	1
30A	07225-0100	Hexagon Screw	9	72	05786	Gear Wheel Set, 1=2.44	1
30B	13136	Grommet	4	74	05787	Self-Aligning Roller Bearing	1
30C	08280	Disc	8	75	05788	Cylinder Roller Bearing	1
30D	13154	Cover	1	76	07117	Fitting Disc	5
31	07623	Eye Bolt	1	77	05789	Radial Shaft Ring	1
32	07624	Radial Shaft Seal	3	78	05665	Cylindrical Pin	6
33	07626	Seal Retainer	3	80	05790	Spacer Ring 1 for Gear	1
33A	07627	O-Ring for Seal Retainer	3	81	05791	Spacer Ring 2 for Gear	1
33B	07628	Circlip for 33	3	82	05802	Fixing Plate for Gear	1
33C	07249	Fitting Disc	3	83	13358	Hexagon Screw	1
34	13137	Oil Scraper (Flinger)	3	84	05792	Hexagon Socket Screw	7
36	06748	Plunger	3	85	05702	Hexagon Socket Screw	3
38	06749	Seal Sleeve	3	86	07159	Washer	3
38A	22764	Serrated Pin	3	87	05793	Hexagon Socket Screw	5
38B	06750	Leakage Gasket	3	88	05655	Hexagon Socket Screw	1
38C	06667	O-Ring	3	89	05794	Gear Flange, Hollow Shaft	1
39	05522	Seal Case	3	89A	05795	Centering Ring, Hollow Shaft	1
39A	05523	O-Ring	6	07662		Valve Tool (not shown)	1
40	07338	Tension Spring	3	90	05796	Oil Cooler Assembly	1
41	06753	Support Disc	3	K1	05797	Cooling Vane Plate	1
42	06754	Spiral Ring (Packing)	6	K2	05798	Seal for Gear Cover	2
43	06755	Support Ring	6	K3	05799	Gear Cover	1
44	06756	Guide Ring	3	K4	05029	Hexagon Head	
45	06757	Pressure Ring	3	K5	05800	Countersunk Screw	8
46	13390	Seal Ring	3	K6	06725	Hexagon Socket Screw	8
47	06758	Spacer Disc	3	K7	05801	Spring Washer	8
48	5524	Circlip	3	K8	06272	Connection for Oil Cooler	1
49	13159	Stud Bolt	8	K9	07109	Copper Seal	6
49A	13160	Hexagon Nut	8	K10	05031	Plug, 1/2" BSP	2
50	06759	Valve Casing	1	K11	05032	Reducing Nipple	3
50A	13162	Centering Stud	2	K12	05033	U-Joint Connector with Nut	4
51	05780	Inlet Valve Assembly (51B-51F)	3	K13	05402	Tube for Cooler	2
51B	05193	O-Ring	3	K14	05403	Hose Clamp	4
51C	05194	Inlet Valve Seat	3	K16	05405	Hose Guard	2
51D	06761	Valve Plate	3			Flat Gasket	4
51E	06762	Valve Spring	3				
51F	06763	Spacer Pipe	3				

GP7522 REPAIR KITS

Plunger Packing Kit #09701

<u>Item</u>	<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
39A	05523	O-Ring	6
42	06754	Spiral Ring (Packing)	6
43	06755	Support Ring	6
44	06756	Guide Ring	3
46	13390	Seal Ring	3

Inlet Valve Assembly Kit #09702

<u>Item</u>	<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
51B	05193	Support Ring	2
51C	05194	Inlet Valve Seat	1
51D	06761	Valve Plate	1
51E	06762	Valve Spring	1
58A	07700	O-Ring	1
58B	07693	Support Ring	1

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

Discharge Valve Assembly Kit #09703

<u>Item</u>	<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
52B	05193	O-Ring	1
52C	05195	Valve Seat	1
52D	06761	Valve Plate	1
52E	06762	Valve Spring	1
58A	07700	O-Ring	1
58B	07693	Support Ring	1

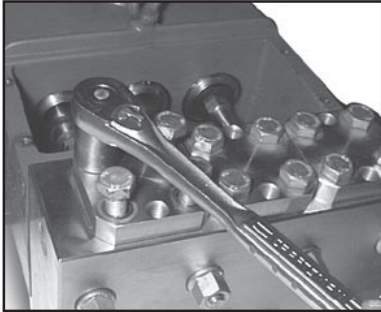
GP7522 TORQUE SPECIFICATIONS

<u>Position</u>	<u>Item#</u>	<u>Description</u>	<u>Torque Amount - Ft.-Lbs (N-m)</u>
24	05777	Inner Hexagon Screw	30 (41)
36	06748	Plunger	33 (45)
49A	13160	Nut	103 (145)
58C	07702	Hexagon Screw	155 (210)

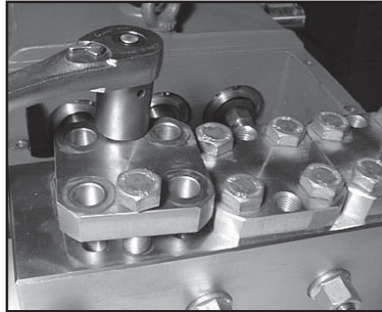
GP7522 REPAIR INSTRUCTIONS

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.

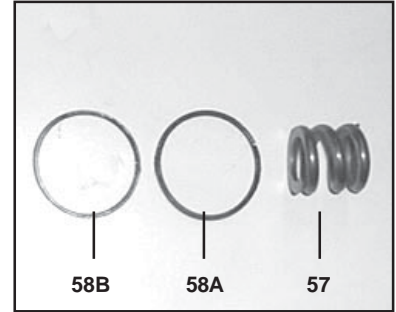
TO CHECK VALVES



- 1) Loosen and remove screws (58C) with a 24mm socket wrench.



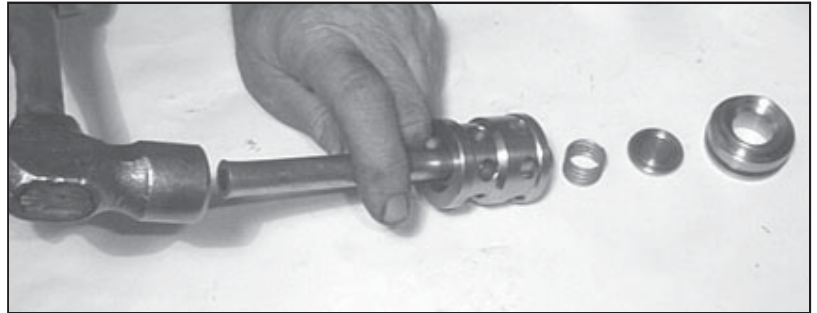
- 2) Take plugs (58) out of valve casing (50) by tightening screws (58C) against valve casing with two screws.



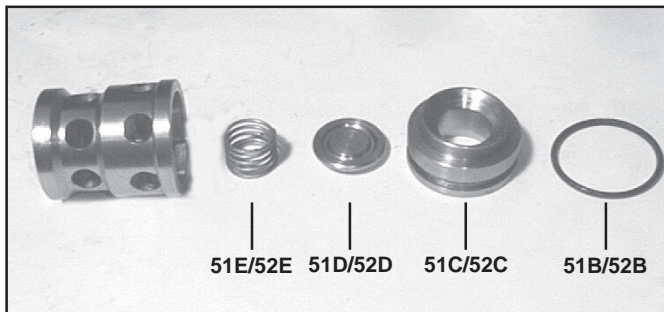
- 3) Remove the compression spring (57) O-Ring (58A) and support ring (58B).



- 4) Take out valve assemblies (52 & 51) using either tool (part #07662) or a stud bolt.

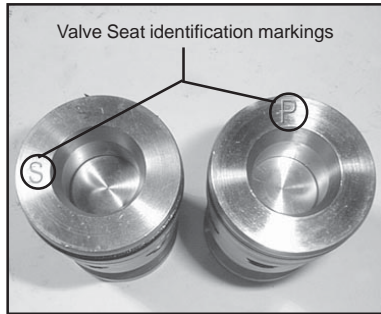


- 5) Valve seats (51C and 52C) are pressed out of spacer pipes (51F and 52F) by hitting the valve plates (51D and 52D) with a socket extension.



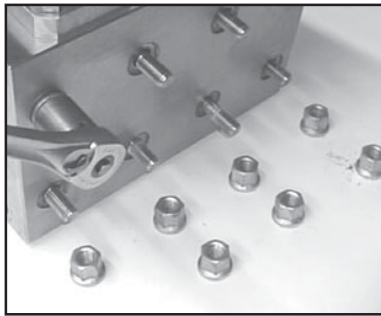
- 6) Check surfaces of valve plates (51D and 52D), valve seats (51C or 52C) and o-rings (51B and 52B). Replace worn parts.

GP7522 REPAIR INSTRUCTIONS

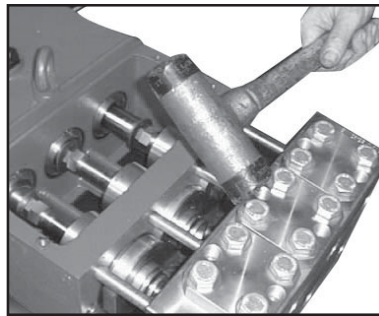


- 7) When reassembling: The inlet valve seat (51C) is 1mm smaller in diameter than the discharge valve seat (52C). Inlet valve seats are marked "S" and always have to be installed first. Discharge valve seats are marked "P" and are always to be installed on top of inlet valve. Plugs (58) are to be tensioned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

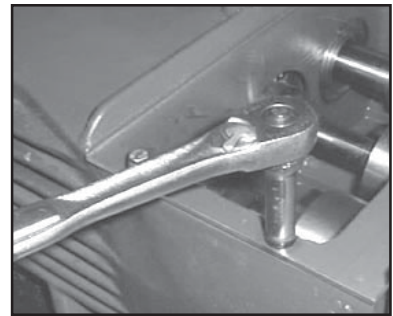
TO CHECK SEALS



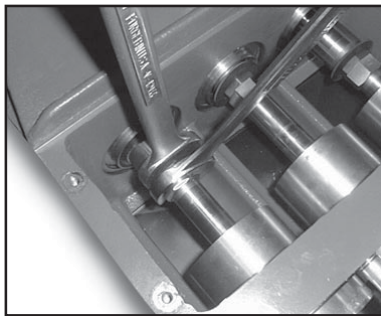
- 8) Loosen nuts (49A) with a 24mm socket wrench.



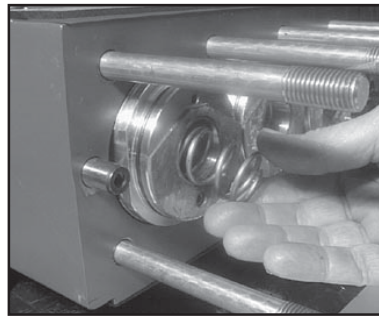
- 9) With a rubber mallet tap the back of the valve casing (50) and pull the valve casing off the stud bolt (49).



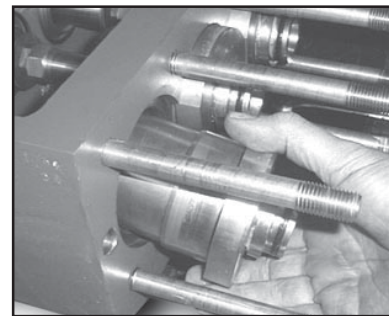
- 10) Remove cover plate (30) with a 10mm socket wrench.



- 11) By gripping hex flats, separate plunger (36) from cross-head (25) by means of two open-end wrenches (size 22mm and 27mm).



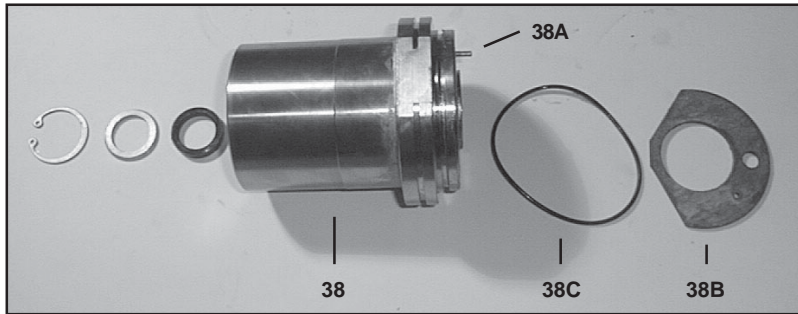
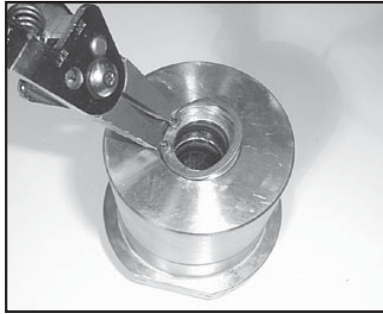
- 12) Remove tension spring (40) from seal retainer (38).



- 13) Pull seal sleeves (38) and plungers (36) out of their fittings in the crankcase (1) using ring groove as a guide.

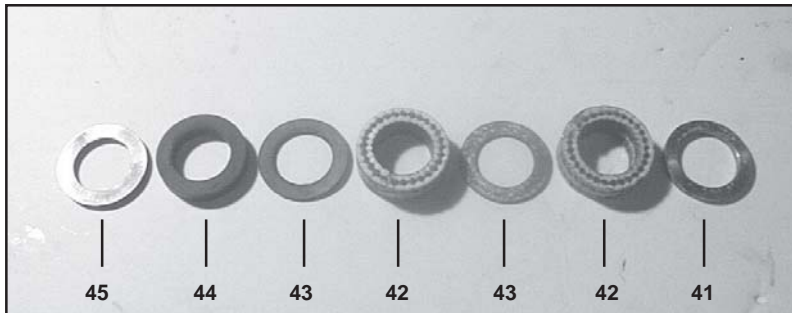
GP7522 REPAIR INSTRUCTIONS

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.

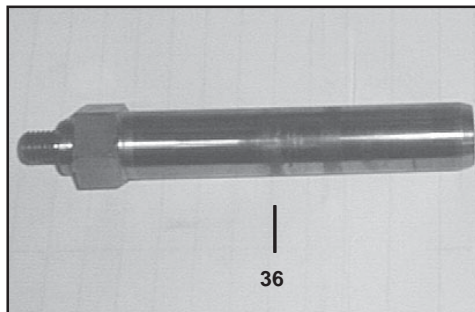


14) Remove circlip ring (48) from seal sleeve (38). Remove spacer disc (47) and seal ring (46) from seal sleeve. Replace worn or damaged parts.

15) Remove leakage gasket (38B) from serrated pin (38A) on the seal sleeve (38). Check o-ring (38C) for damage and replace if necessary. **IMPORTANT!** The 3.2 mm (diameter bore of the leakage gasket (38B) must be inserted directly on the serrated pin (38A) of the seal sleeve (38). The leakage gasket must fit snugly to the seal so that the bevelled surface of the gasket faces outwards.



16) Remove support disc (41) seal unit (42, 43, 44) and pressure ring (45) of seal sleeve (38). Examine seals for signs of wear or cavitation, and if necessary, replace.



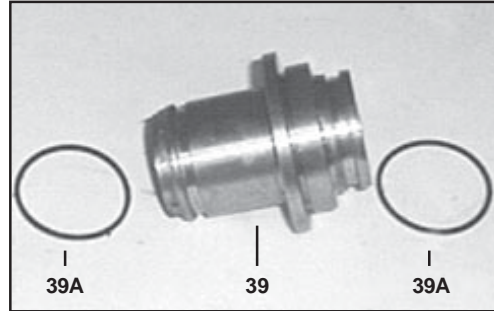
17) Examine plunger (36) for signs of wear or cavitation. If the surface of the plunger is worn, screw out the plunger with a 27mm tool. Clean centering and front surface of crosshead with plunger (25). Thread new plunger carefully through oiled seals in seal sleeve. Coat thread of new plunger lightly with bonding agent (e.g., loctite).

NOTE: 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.

GP7522 REPAIR INSTRUCTIONS

TO ASSEMBLE VALVE CASING

18. Check O-rings (39A) and support rings (39B) on seal case (39). Clean surfaces of seal sleeves (38) in crankcase (1) and sealing surfaces of valve casing (50). Insert seal sleeve with plunger into crankcase guide. Turn crankshaft to (22) until plunger with cross-head (25) pushes against plunger tighten plunger (36) to 26 ft-lbs (33 N-m).



19. Push valve casing carefully over O-rings of seal case and centering studs (50A). Tighten nuts (49A) to space 103 ft-lbs (145 N-m).

TO DISASSEMBLE GEAR END

20. Take out plunger (36) and seal sleeves (38) as described above. Drain oil.
21. After removing the circlip ring (33B), pry out seal adapter (33) with a screw driver
22. Check seals (32 and 33A) and surfaces of plunger base (25).
23. Remove crankcase cover (4). Loosen inner hexagon screws (24A) on the connecting rods (24) and push con rod halves as far into the crosshead guide as possible.

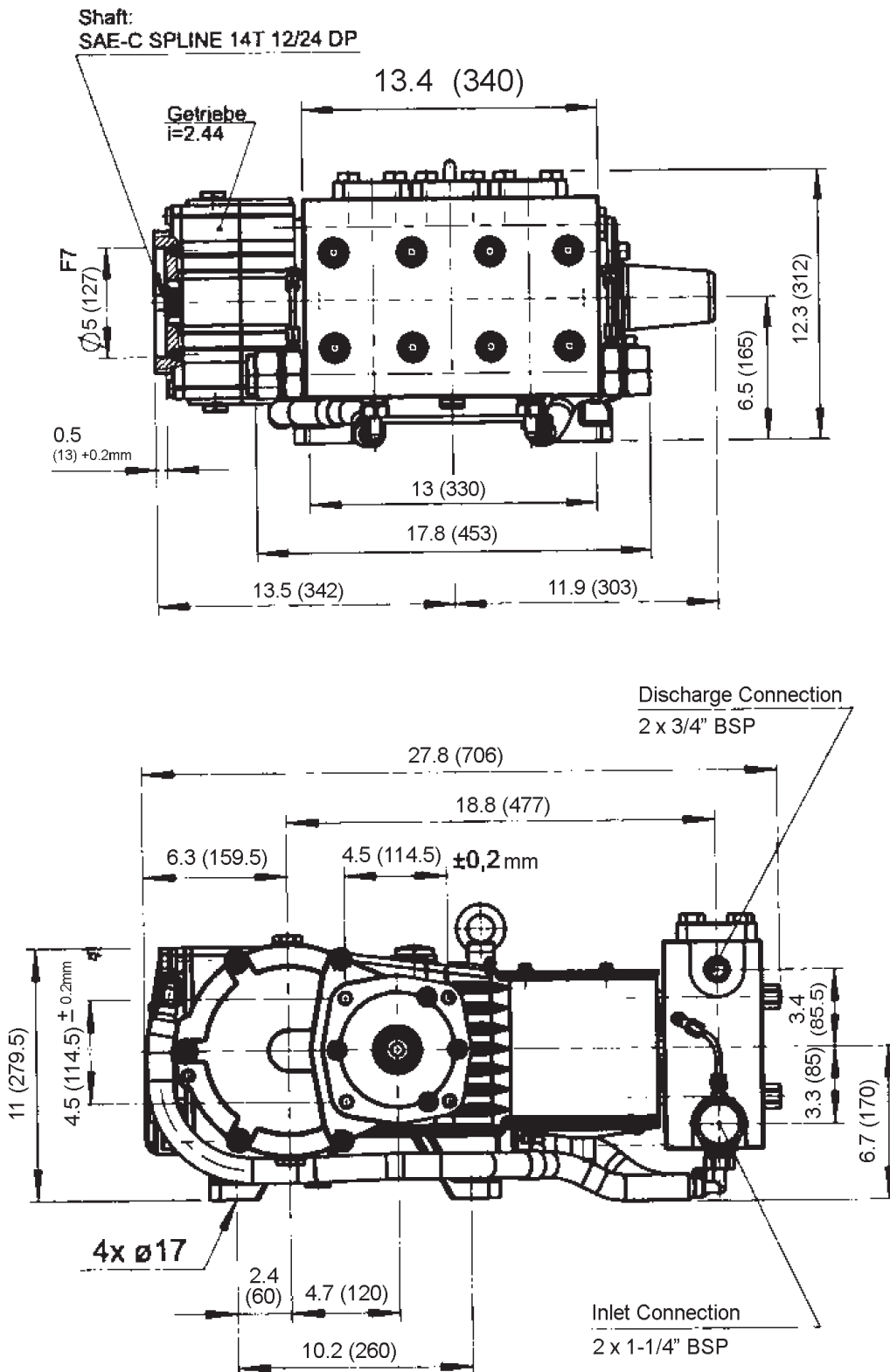
CAUTION: Connecting rods (24) are marked for identification. Do not twist connecting rod halves. Connecting rod is to be reinstalled in the same position on crankshaft journals.

24. Check surfaces of the connecting rod (24) and crankshaft (22).
25. Take out bearing cover (14) to one side and push out crankshaft (22) taking particular care that the connecting rod (24) doesn't bend.
26. 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 inner hexagon screws (24A) to 30 ft.-lbs (41 N-m).

CAUTION: Connecting rod (24) has to be able to be slightly moved sidewise at the stroke journals.

27. Reassemble cover (4) and seal (5) onto crankcase (1). Fasten with hexagon screws (10).
28. Reinstall shim (33C), and seal adaptor (33) with radial shaft seal (32) and o-ring (33A) onto crankcase (1).
29. Reinstall remainder of fluid end as described above in "To Assemble Valve Casing" section (21 and 22 above).

GP7522 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.



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