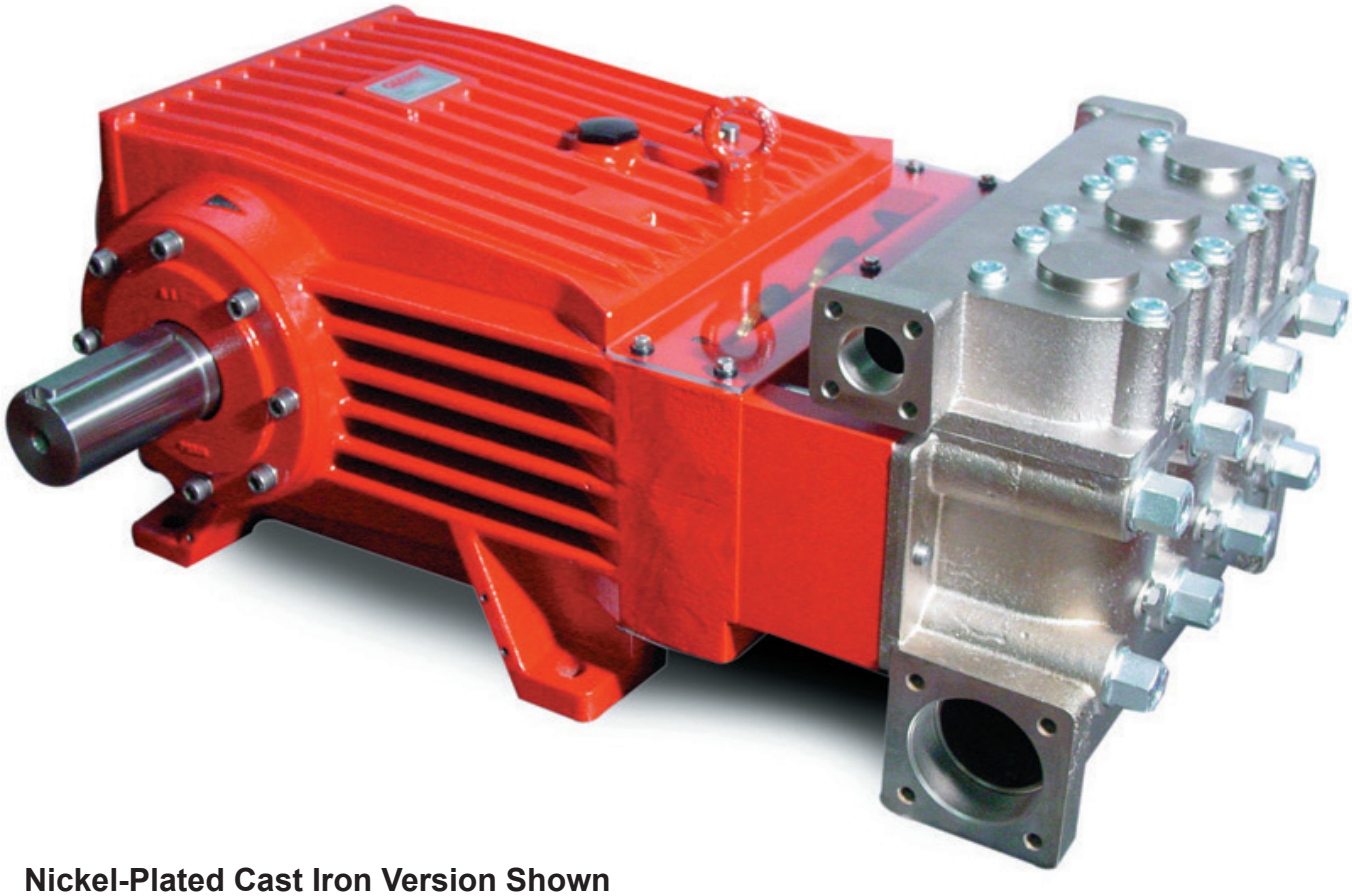
Triplex Ceramic
Plunger Pump
Models Manual

Models GP8055A, GP8055A-1000, GP8060A, GP8060A-1000, GP8065A and GP8065A-1000

Pumps without oil cooling system



Nickel-Plated Cast Iron Version Shown

GIANT
Performance Under Pressure

Contents:

INSTALLATION INSTRUCTIONS

The stated figures are for maximum pressure and maximum speed (rpm) and apply for interval operation with cold water. Required NPSH refers to water (specific weight 1kg/dm^3, viscosity 1°E) at maximum permissible pump revolutions. Fluid medium: Clean water filtered to 50µm.

Operation and Maintenance

Check oil level prior to starting and ensure trouble-free water supply.
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.
Oil: Use only 3.3 gallons (12.5 liters) of Giant Oil (p/n 01154) or ISO VG 220 GL4 (e.g. Aral Degol BG220) or SAE 90 GL4 gear oil. Initial change after 50 operating hours and then every 1000 operating hours or after one year of operation.
IMPORTANT! when operating in damp places or with high temperature fluctuations. Oil must be changed immediately should condensate (frothy oil) occur in the gear box.
NPSH values must be observed

Cooling the Gear Oil

Make sure that suction pulsation is sufficiently dampened – water column resonance must be avoided.

The maximum temperature of the water being pumped and which is also fed through the cooling system must not exceed 140 °F (60 °C).
When starting up for work, the pump must run first at zero pressure for approximately 1 minute.

IMPORTANT! The GP8000 series has a black arrow on the crankcase which shows the preferred direction of rotation. The preferred direction of rotation ensures oil is splashed onto the crosshead guides in the correct manner 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 rotation if operated periodically or at reduced pressure. If so, the pump must be run in in this direction to smoothen the bearing areas. This is done by initially operating the pump at zero pressure for 30 minutes; thereafter the pressure is to be slowly increased over a period of an hour to the desired maximum operating pressure. Check the oil temperature during this process.

IMPORTANT! If there is a danger of frost, the pump and cooling system must be emptied. Note that travel wind can cause water in pumps fitted on open vehicles to freeze even if the outside temperature is above freezing point.
The torque tension on the valve casing nuts (49A) is to be checked after approximately 200 operating hours. Please see page 8 for torque specifications.
When checking the torque tension, the pump must be at zero pressure.

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 examined every day; the plunger seals must be changed should leakage become excessive i.e. constant dripping.

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 for unauthorized personnel. A safety valve is to be installed in accordance with the guidelines for liquid spraying units so that the admissible operating pressure cannot be ex- ceeded by more than 10%. Pump operation without a safety valve as well as any excess in temperature or speed limits automatically voids the warranty.

When the pump is in operation, 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.
Pressure in the discharge line and pump must be at zero before carrying out any maintenance work to the pump or unit. Close off suction line. Disconnect fuses to ensure that the driving motor cannot be accidentally switched on. 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, before starting the pump.

In order to prevent air or an air/water-mixture being absorbed and cavitation occurring, the pump npshr (net positive suction head required) and water temperature must be respected.

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 suitable for pumping clean water and other non-aggressive or non-abrasive media with a specific weight similar to water.

Before pumping other liquids - especially inflammable, explosive and toxic media - the pump manufacturer must be consulted with regard to the resistance of the pump material. It is the responsibility of the equipment manufacturer and/or operator to ensure that all pertinent safety regulations are followed.

Specifications
Models GP8055A / GP8055A-1000

	U.S.	(Metric)
Flow	75.3 GPM	(285 LPM)
Discharge Pressure	2000 PSI	(140 bar)
Power Consumption	107 BHP	80 kW
Maximum Speed	580 RPM	580 RPM
Inlet Pressure	145 PSI	(10 bar)
Plunger Diameter	2.17”	55 mm
Plunger Stroke	2.83”	72 mm
Crankshaft Diameter	2.76”	70 mm
Key Width	0.55”	14 mm
Crankshaft Mounting		Either side
Shaft Rotation		Top of pulley towards manifold
Temperature of Pumped Fluids	140° F	(60° C)
Inlet Ports		(2) 3” BSP
Discharge Ports		(2) 1-1/4” BSP
Weight	749 lbs.	(340 kg)
Crankcase Oil Capacity	3.3 Gal.	(12.5 liters)
Valve Casing Material (GP8055)		Nickle plated Spheroidal Cast Iron
Valve Casing Material (GP8055-1000)		Aluminum-Bronze
NPSHR	23.0 ft.-head	7.0 mWs

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.

GP8055A/GP8055A-1000 HORSEPOWER REQUIREMENTS

RPM	GPM	500 PSI	1000 PSI	2000 PSI
300	38.9	13.4	26.8	53.7
400	51.9	17.9	35.8	71.6
500	64.9	22.4	44.1	89.5
580	75.3	26.0	51.9	103.9

SPECIAL NOTE:
The theoretical gallons per revolution (gal/rev) is 0.130. To find specific outputs at various RPM, use the formula:

GPM = 0.130 x RPM

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:

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

Specifications
Model GP8060A / GP8060A-1000

	U.S.	(Metric)
Flow	90 GPM	(340 LPM)
Discharge Pressure	1730 PSI	(120 bar)
Power Consumption	107 BHP	80 kW
Maximum Speed	580 RPM	580 RPM
Inlet Pressure	145 PSI	(10 bar)
Plunger Diameter	2.36”	60 mm
Plunger Stroke	2.83”	72 mm
Crankshaft Diameter	2.76”	70 mm
Key Width	0.55”	14 mm
Crankshaft Mounting		Either side
Shaft Rotation		Top of pulley towards manifold
Temperature of Pumped Fluids	Up to 140° F	(60° C)
Inlet Ports		(2) 3” BSP
Discharge Ports		(2) 1-1/4” BSP
Weight	749 lbs.	(340 kg)
Crankcase Oil Capacity	3.3 Gal.	(12.5 liters)
Valve Casing Material (GP8060)		Nickle plated Spheroidal Cast Iron
Valve Casing Material (GP8060-1000)		Aluminum Bronze
NPSHR	26.2 ft.-head	8.0 mWs

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.

GP8060A/GP8060A-1000
HORSEPOWER REQUIREMENTS

RPM	GPM	500 PSI	1000 PSI	1730 PSI
300	46.0	15.9	31.7	54.9
400	61.4	21.2	42.3	73.3
500	76.7	26.5	52.9	91.5
580	89.0	30.7	61.4	106.2

SPECIAL NOTE:
The theoretical gallons per revolution (gal/rev) is 0.153. To find specific outputs at various RPM, use the formula:

GPM = 0.153 x RPM

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:

$$\frac{\text{GPM X PSI}}{1450} = \text{HP}$$

Specifications
Model GP8065A / GP8065A-1000

	U.S.	(Metric)
Flow	105.7 GPM	(400 LPM)
Discharge Pressure	1500 PSI	(100 bar)
Power Consumptions	107 BHP	80 kW
Maximum Speed	580 RPM	580 RPM
Inlet Pressure	145 PSI	(10 bar)
Plunger Diameter	2.55”	65 mm
Plunger Stroke	2.83”	72 mm
Crankshaft Diameter	2.76”	70 mm
Key Width	0.55”	14 mm
Crankshaft Mounting		Either side
Shaft Rotation		Top of pulley towards manifold
Temperature of Pumped Fluids	Up to 140° F	(60° C)
Inlet Ports		(2) 3” BSP
Discharge Ports		(2) 1-1/4” BSP
Weight	749 lbs.	(340 kg)
Crankcase Oil Capacity	3.3 Gal.	(12.5 liters)
Valve Casing Material (GP8065)		Nickle plated Spheroidal Cast Iron
Valve Casing Material (GP8065-1000)		Aluminum Bronze
NPSHR	23.6 ft.-head	7.2 mWs

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.

GP8065A/GP8065A-1000
HORSEPOWER REQUIREMENTS

RPM	GPM	500 PSI	750 PSI	1000 PSI	1500 PSI
300	54.7	18.9	28.3	37.7	56.6
400	72.9	25.1	37.7	50.3	75.4
500	91.1	31.4	47.1	62.8	94.2
580	105.7	36.5	54.7	72.9	109.4

SPECIAL NOTE:
The theoretical gallons per revolution (gal/rev) is 0.182. To find specific outputs at various RPM, use the formula:

GPM = 0.182 x RPM

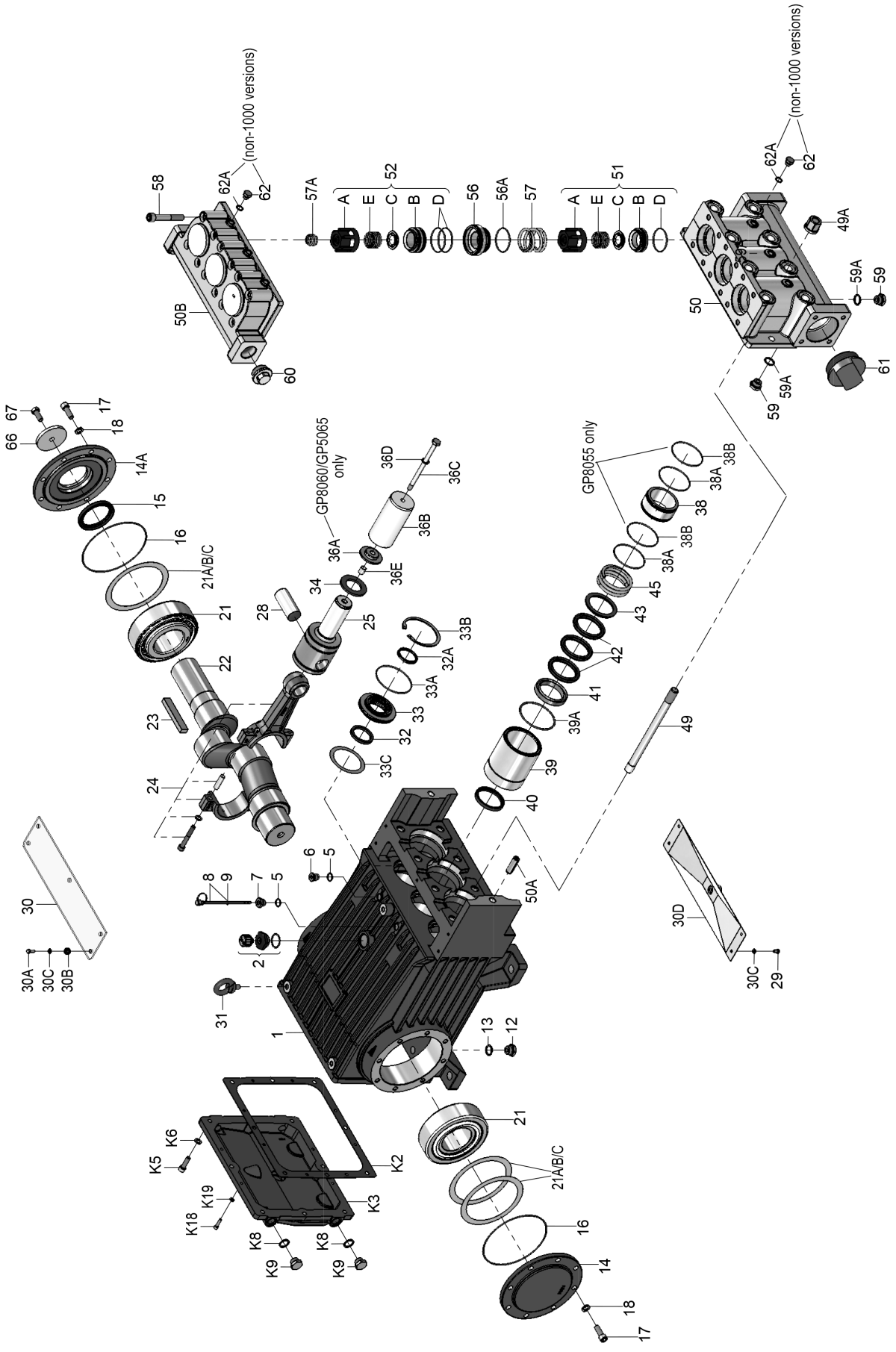
HORSEPOWER RATINGS:

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:

$$\frac{\text{GPM X PSI}}{1450} = \text{HP}$$

GP8055A(-1000), GP8060A(-1000), GP8065A(-1000)
Exploded View



Part List - GP8055A(-1000), GP8060A(-1000), GP8065A(-1000)

Item	Part	Description	Qty
1	05380	Crankcase	1
2	06893	Oil Filler Plug Assy with Vent	1
5	22929	Copper Washer	2
6	12256	Plug, 3/8” BSP	1
7	05656	Plug for oil dipstick	1
8	05035*	Oil Dipstick Assembly	1
9	01009	O-Ring	1
12	07109	Plug 1/2” BSP	2
13	06272	Seal	2
14	05036	Bearing Cover Closed	1
14A	05298	Bearing Cover Open	1
15	05112	Radial Shaft Seal	1
16	05037	O-Ring	2
17	05038	Hexagon Socket Screw	16
18	05039	Spring Ring	16
21	05044	Tapered Roller Bearing	2
21A	05042	Fitting Disc	1-5
21B	05043	Fitting Disc	1-5
21C	05113	Fitting Disc	1-5
22	05299	Crankshaft	1
23	05300	Fitting Key	1
24	05047	Connectin Rod Assembly	3
25	05048	Crosshead c/w Plunger	3
28	05049	Crosshead Pin	3
29	05051	Hexagon Screw	4
30	05052	Cover Plate	1
30A	07225-0100	Hexagon Screw	5
30B	13136	Grommet	5
30C	08280	Washer	9
30D	05050	Splash Cover	1
31	07623	Eye Bolt	3
32	05058	Radial Shaft Seal	3
32A	03118	Scraper	3
33	03119	Seal Retainer	3
33A	05056	O-Ring	3
33B	05054	Clip Ring	3
33C	05059	Fitting Disc	3
34	05060	Oil Shield	3
36A	05063	Cover for Plunger Pipe (GP8060/GP8065)	3
36B	05280	Plunger Pipe (GP8055)	3
36B	05061	Plunger Pipe (GP8060)	3
36B	05115	Plunger Pipe (GP8065)	3
36C	05062	Tension Screw	3
36D	07665	Copper Washer	3
36E	06900	Centering Sleeve	3
38	05283	Seal Case (GP8055)	3
38	05064	Seal Case (GP8060/GP8065)	3
38A	13286	O-Ring (GP8055)	6
38A	06667	O-Ring (GP8060/GP8065)	6
38B	05281	Support Ring (GP8055 Only)	6
39	05275	Seal Sleeve (GP8055)	3
39	05065	Seal Sleeve (GP8060)	3
39	05116	Seal Sleeve (GP8065)	3
39A	05066	O-Ring	3
40	07723	Seal Ring (GP8055)	3
40	05067	Seal Ring (GP8060)	3
40	06996	Seal Ring (GP8065)	3
	*17422	Add optional extended dip stick assembly (sold separately)	

Item	Part	Description	Qty
41	05276	Pressure Ring (GP8055)	3
41	05068	Pressure Ring (GP8060)	3
41	05117	Pressure Ring (GP8065)	3
42	05277	V Sleeve (GP8055)	9
42	05069	V Sleeve (GP8060)	9
42	06997	V Sleeve (GP8065)	9
43	05278	Sleeve Support Ring (GP8055)	3
43	05070	Sleeve Support Ring (GP8060)	3
43	05118	Sleeve Support Ring (GP8065)	3
45	05279	Seal Tension Spring (GP8055)	3
45	05071	Seal Tension Spring (GP8060)	3
45	05119	Seal Tension Spring (GP8065)	3
49	05072	Stud Bolt	8
49A	05073	Hexagon Nut	8
50	05074	Valve Casing (GP8055/60/65)	1
50	05074-3000	Valve Casing (-1000 Versions)	1
50A	13162	Centering Stud	2
50B	05075	Discharge Valve Casing (GP8055/60/65)	1
50B	05075-3000	Discharge Valve Casing (-1000 Versions)	1
51	04186	Suction Valve Assembly	3
51A	04166	Spring Tension Cap	3
51B	05078	Suction Valve Seat	3
51C	05079	Valve Plate	3
51D	07658	O-Ring	3
51E	05080	Valve Spring	3
52	04188	Discharge Valve Assembly	3
52A	04166	Spring Tension Cap	3
52B	05084	Discharge Valve Seat	3
52C	05079	Valve Plate	3
52D	06258	O-Ring	6
52E	05080	Valve Spring	3
56	05085	Discharge Valve Adaptor	3
56A	06258	O-Ring	3
57	05086	Pressure Spring	3
57A	07210-0100	Pressure Spring	3
58	05087	Hexagon Socket Screw	12
59	07109	Plug 1/2” BSP	5
59A	06272	Copper Seal	5
60	06909	Plug 1-1/4” BSP	1
61	05088	Plug 3” BSP	1
62	05302	Plug 1/4” BSP	6
62A	06934	Copper Gasket	6
66	05303	Disc for Crankshaft	1
67	13433	Hexagon Screw	1
K2	05027	Seal for Gear Cover	1
K3	05028	Gear Cover	1
K5	07381	Hexagon Socket Screw	8
K6	08041	Washer	8
K8	06272	Copper Seal	4
K9	07109	Plug 1/2” BSP	4
K18	04158	Hexagon Socket Screw	4
K19	05053	Washer	4
	05606	Manifold Assembly (50-62A,without 50A) (GP8055/GP8060/GP8065)	
	05606-1000	Manifold Assembly (50-61, without 50A) (-1000 Versions)	
	05208	Plunger Replacement Kit (GP8055/-1000)	
	05207	Plunger Replacement Kit (GP8060/-1000)	
	05209	Plunger Replacement Kit (GP8065/-1000)	

GP8055A(-1000)/GP8060A(-1000)/GP8065A(-1000) PUMP REPAIR KITS

Plunger Packing Kits
GP8055 - #09616

Item	Part #	Description	Qty.
38A	13286	O-Ring	6
38B	05281	Support Ring	6
39A	05066	O-Ring	3
40	07723	Seal Ring	3
42	05277	V-Sleeve	9

GP8060 - #09617

Item	Part #	Description	Qty.
38A	06667	O-Ring	6
39A	05066	O-Ring	3
40	05067	Seal Ring	3
42	05069	V-Sleeve	9

GP8065 - #09586

Item	Part #	Description	Qty.
38A	06667	O-Ring	6
39A	05066	O-Ring	3
40	06996	Seal Ring	3
42	06997	V-Sleeve	9

Inlet Valve Kit - #09587

Item	Part #	Description	Qty.
51	04186	Inlet Valve Assembly	3
56A	06258	O-Ring	3

Discharge Valve Kit - #09588

Item	Part #	Description	Qty.
52	04188	Discharge Valve Assembly	3
56A	06258	O-Ring	3

Oil Seal Kit - #09584A
(From 06/19)

Item	Part #	Description	Qty.
32	05058	Radial Shaft Seal	3
32A	03118	Scraper	3
33A	05056	O-Ring	3

Oil Seal Kit - #09584
(Prior to 06/19)

Item	Part #	Description	Qty.
32	05058	Radial Shaft Seal	3
33A	05056	O-Ring	3

Oil Seal Kit - #09584-R
(To retrofit pumps made before middle of 2019)

Item	Part #	Description	Qty.
32	05058	Radial Shaft Seal	3
32A	03118	Scraper	3
33	03119	Seal Retainer	3
33A	05056	O-Ring	3

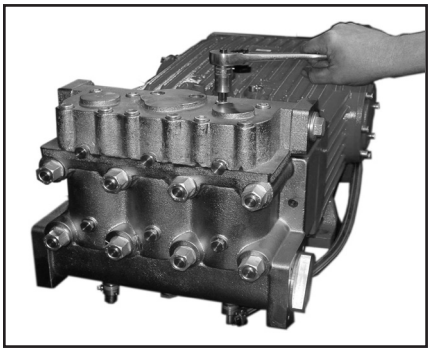
GP8055A/GP8060A/GP8065A TOOL LIST AND TORQUE SPECIFICATIONS

ITEM	PART #	DESCRIPTION	TORQUE Ft-lbs (NM)	TOOL NEEDED
17	05038	Hexagon Socket Screw	64 (87)	10mm allen wrench
24	05047	Connecting Rod Hexagon Socket	37 (50)	8mm allen wrench
33B	05054	Clip Ring	n/a	Industrial Snap ring pliers
36C	05062	Tension Screw	30 (40)	19mm socket
49A	05073	Hexagon Nut (manifold)	266 (360)	30mm socket
51/52	05084/05076	Valve Assemblies	n/a	Valve puller (p/n 07662) - included with pump
58	05087	Hexagon Socket Screw	133 (180)	12mm allen wrench
K5	07381	Hexagon Socket Screw	n/a	8mm allen wrench

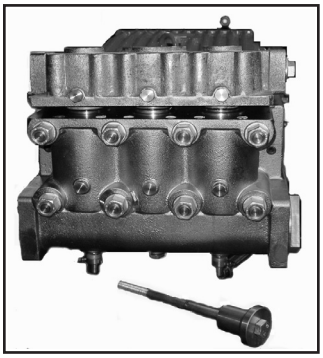
GP8000 Troubleshooting

Problem	Cause	Solution
Pressure drops, water leaks	V-sleeves leak	Replace V-sleeves, examine surface of plunger
Pressure drops, pump becomes loud	Discharge or suction valve leaks	Replace valve
	Steam formation (cavitation)	Reduce suction height, reduce flow resistance in inlet line, clean inlet filter, lower water temperature
Irregular pressure	Worn valves	Examine valves
	O-Ring on the valves or inlet valve adapter leaks	Examine O-ring, examine valve casing for unevenness on the sealing surfaces
Oil leaks at visible part of plunger	Gear sealing is leaky	Examine seals and running surface of plunger
Dirty mile-colored frothy oil	Oil has mixed with water	Replace oil immediately, find and fix the cause
Oil leakage on the crankshaft	Shaft seal ring leaks	Check seal and shaft
Noise increases without loss of pressure	Worn bearing	Dismantle gear, examine all parts, replace worn parts, check oil level. If service life was too short, check for excess strain or whether lubrication intervals were too long. Only specified lubricants are to be used

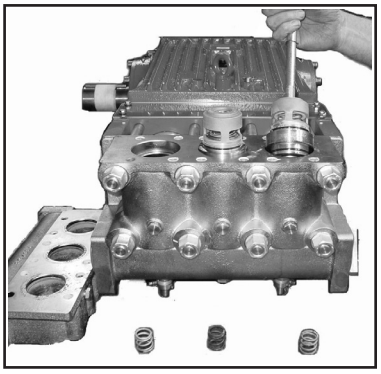
Valve Inspection and Repair



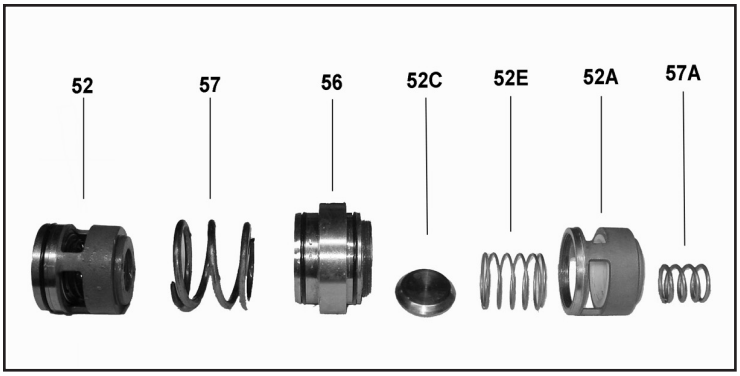
1) Remove bolts (58).



2) Remove discharge casing (50B) up and away.

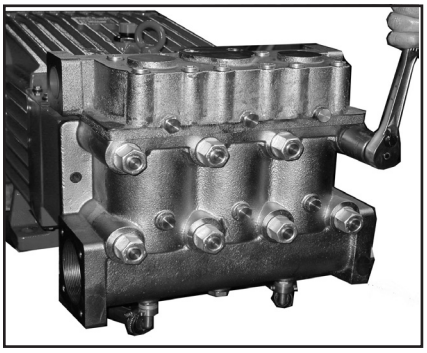


3) Take out pressure springs (57A). Pull out assembled valves (51 & 52) with valve pulling tool (07662).

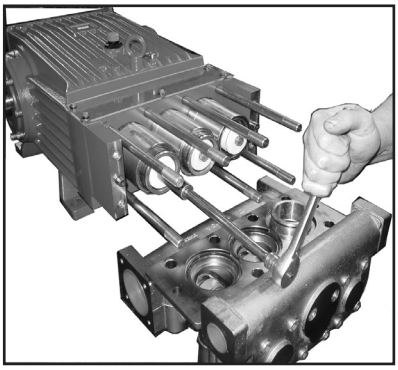


4) The spring tension cap (51A, 52A) is screwed together with the valve seat (51B or 52B). Remove spring tension cap. Take-out springs (51E, 52E) and valve plate (51C, 52C). Check sealing surfaces and O-rings (51D, 52D). Replace worn parts. When reassembling, coat threads of valve seat with silicon grease or molycote anti-seize Cu-7439. Before refitting the valves, clean the sealing surfaces in the casing and check for any damage. Tighten bolts (58) to 133 Ft-lbs (180 Nm); check torque tension after 8-10 operating hours.

To Check Seals and Plunger Pipe

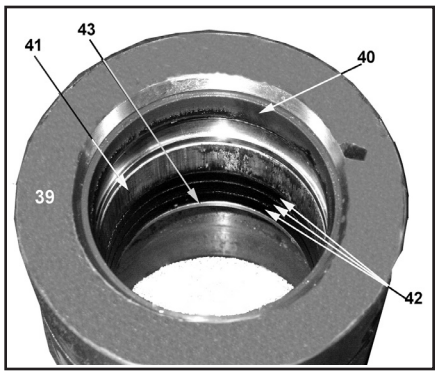


5) Remove hexagon nuts (49A) and valve casing together with seal case (38) from crankcase (1). If necessary, carefully tap the valve casing (50) past the centering stud (50A) using a rubber hammer.
IMPORTANT! If necessary, support the valve casing by resting it on wooden blocks or by using a pulley.

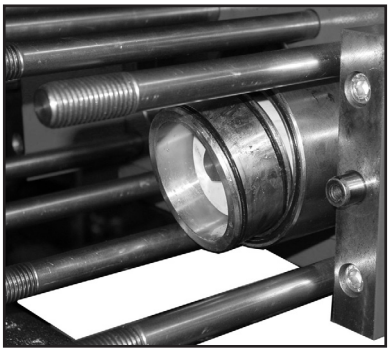


6) Remove tension screw (36C) and take seal sleeve (39) together with all mounted parts out of the drive. Pull plunger pipe out of the seal assembly and check for any damage. Carefully, remove seal rings (40) and sleeves (42) with a screw driver.

GP8055A(-1000)/GP8060A(-1000)/GP8065A(-1000)
PUMP REPAIR INSTRUCTIONS

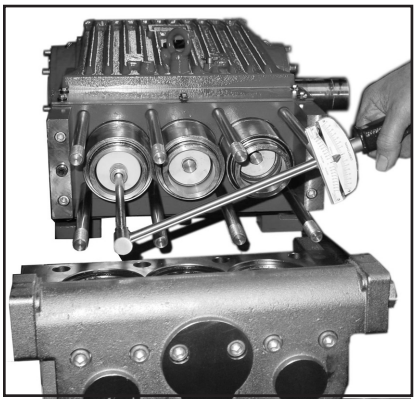


7) Important! Be careful not to damage the seal sleeve (39) and pressure ring (41). Check the inner diameter of the pressure ring for wear and if necessary replace together with seals (40) and (42). Clean all parts. New parts should be lightly coated with silicon grease before installation. Inert the seal unit (40, 41, 42 43) into the sleeve. Push the ceramic plunger carefully through the seals from the crankcase side. If necessary, the seals can be held tightly using a suitable pipe support held on the opposite side of the seal sleeve.



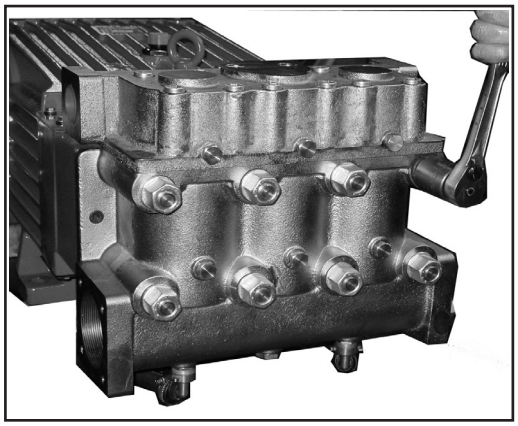
8) Take out the seal case (38) from the valve (if necessary secure 2 screwdrivers in the front O-ring groove to extract seal casing from valve casing). Coat seals with silicon grease before installing.

Important! Mounting surfaces of the crankcase and the valve casing must be clean and free of damage. The components must fit exactly and evenly on one another. The same exactness applies for all centering positions in the crankcase, pressure and valve casing.



9) Lightly coat the seal sleeve with anti-corrosive grease (e.g. molycote no. Cu-7439) in its fitted area towards the crankcase. Insert the seal sleeves in to their crankcase fittings. Lightly coat the threads of the tension screw (36C) with thread glue and insert it together with a new copper ring (36D) through the ceramic pipe. Turn the pump by hand until the plunger (25) rests against the plunger pipe. Tighten the tension screw at 30 Ft-lbs. (40 Nm).

Important! Thread glue must never come between the plunger pipe (36B) and centering sleeve (36E). Overtensioning of the plunger pipe by excessive tightening of the tension screw and/or dirt or damage on the mounting surfaces can lead to plunger pipe breakage. Insert the seal tension spring (45) and O-ring (39A) in to the seal sleeve (39).

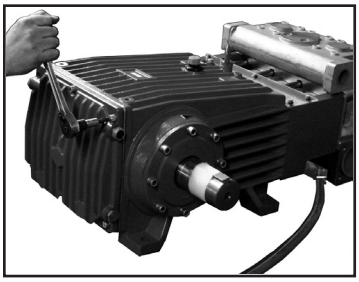


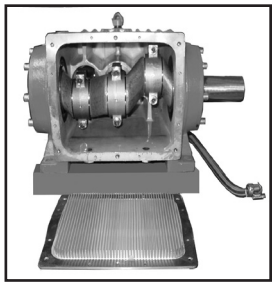
Replacing Valve Casing:

10) Put seal cases (38) in the centering holes of the valve casing, then push valve casing carefully on to centering studs (50A). Tighten hexagon screws (49A) evenly and crosswise at 266 Ft.-lbs. (360 Nm).

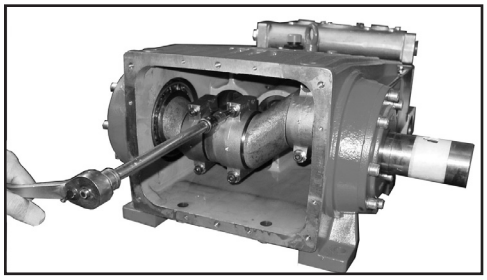
Important! The torque tension on the screws (49A) must be checked after 8-10 operating hours; the pump must be at zero pressure. Thereafter, the tension is to be checked every 200 operating hours.

To Dismantle Crankcase Gear

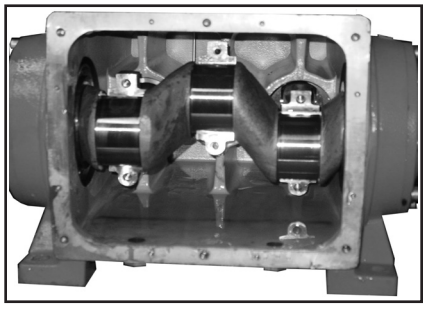




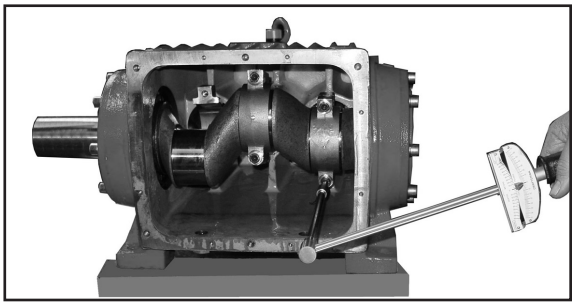
11) Take out plungers and seal sleeves as described above. Drain the oil by taking off the plug (12). After removing the clip ring (33B), pry out the seal retainer (33) with a screwdriver. Remove gear cover (K3).



12) Remove the connecting rod screws (24). Important! Connecting rods are marked 1 to 3 for identification. Do not twist connecting rod halves or interchange them. When reassembling, the connecting rod must be fitted in their exact original position on the crankshaft journals.



13) Push connecting rod halves together with the crosshead as far as possible into the crosshead guide. Take out bearing cover (14/14A) and push out crankshaft taking particular care that the con rod doesn't get bent. Check surfaces on the connecting rods (24), crankshaft (22) and crossheads (25). Check the surfaces of the crosshead guides in the crankcase for any unevenness.

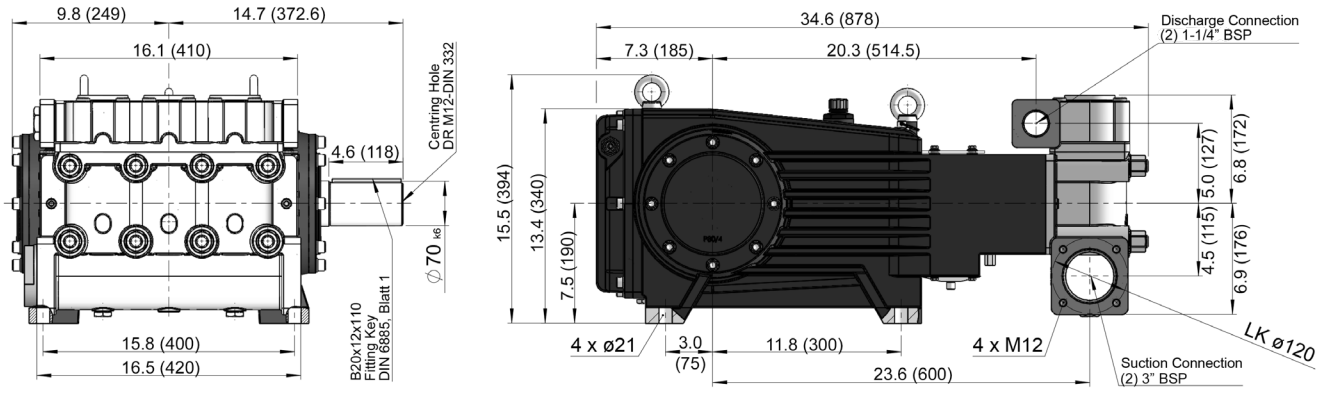


14) Reassemble in reverse order. Thread the long end of the crankshaft together with the inner bearing rings into the crankcase; then mount outer bearing ring (20) and spacer ring (22A). Mount connecting rod halves in their exact original position and tighten at 37 Ft-lbs. (50 Nm). Important! Connecting rods must be able to move slightly sideways on the stroke journals.

15) Mount bearing cover (14A) and tighten screws (17) to 64 Ft-lbs. (87 Nm). Adjust axial play (clearance) on the crankshaft to minimum 0.1 mm / max. 0.15 mm using shims (21A/21B). The shaft should turn easily with little clearance. Connecting rod must sit exactly in the middle of each crankshaft pin. Fit the bearing cover (14) and tighten the screws (17) at 64 Ft-lbs. (87 Nm). Seal (32A) must always be installed so that the seal lip on the inside diameter faces the oil.

Important! Possible axial float of the seal adaptor (33) is compensated with shims (33C).

GP8055A(-1000), GP8060A(-1000), GP8065A (-1000) SERIES DIMENSIONS - (mm)



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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.

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