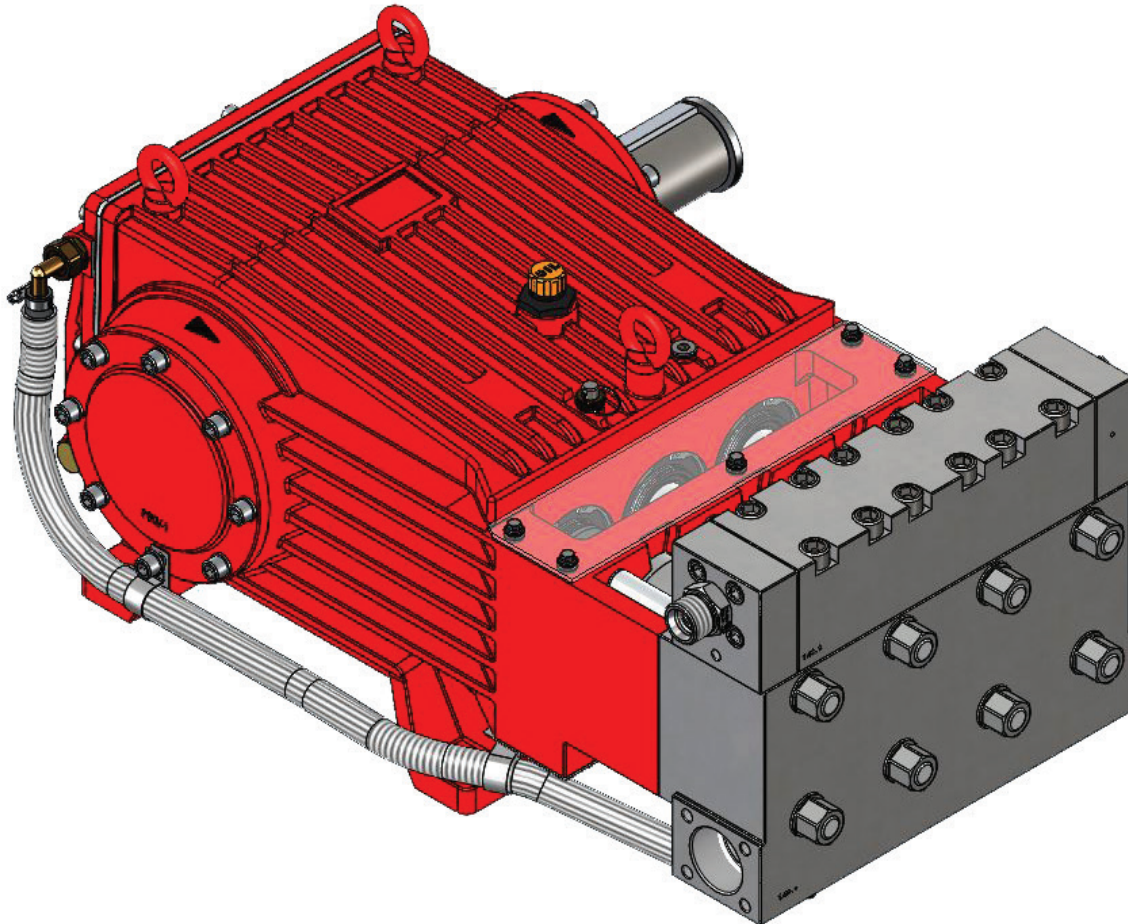


# Model GP8035/GP8035A/ GP8040/GP8040A

Triplex Ceramic  
Plunger Pump  
Models Manual

"A" version = NPT inlet and discharge ports



Updated 10/23

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# Installation Instructions

The stated figures are for max. pressure and max. speed (rpm) and apply for interval operation with cold water.

Required NPSH refers to water (specific weight 1kg/dm<sup>3</sup>, viscosity 1°E) at max. permissible pump revolutions.

Fluid medium: Clean water filtered with 50µm.

\*\*higher water temperatures possible with separate crankcase cooling system; the manufacturer is to be contacted in this case.

## 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 litres) of ISO VG 220 GL4 (e.g. Aral Degol BG220) or SAE 90 GL4 gear oil (Giant's p/n 01154). Initial change after 50 operating hours and then every 1000 operating hours after one year latest.

**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

**IMPORTANT!** The water input pressure must not exceed 29 PSI (2 bar) when using the integrated system for cooling the gear oil (standard version).

If a separate cooling circuit maximum 29 PSI (maximum 2 bar) is installed, it is then possible to have an input pressure of up to maximum 145 PSI (maximum 10 bar) on the suction side.

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

**IMPORTANT!** The pumps can be run without gear oil cooling in continuous operation **up to** a power rating of **107.2 HP (80 kW)** or with major intermittent operation at full performance (see page 2 regarding the definition for intermittent operation).

If operational power **exceeds 107.2 HP (80 kW)** or if continuous operation is the case, the pump must be run with the integrated oil cooling system. The max. temperature of the water being pumped and which is also fed through the cooling system must not exceed 86 °F (30 °C). The water amount which is fed into the cooling system depends on the pump speed and is approximately 1.85 GPM (7.0 l/min) at 580 pump rpm. The cooling water is sucked in by one of the pumping chambers and pumped away.

**IMPORTANT!** If higher medium temperatures or liquids other than water are involved or aggressive media such as seawater, demineralised water etc., the pump must be fitted with a separate cooling circuit. The separate cooler must have a cooling efficiency of 1700 watt. If there is a danger of frost, an appropriate amount of antifreeze must be mixed into the cooling circuit.

When starting up for work, the pump must run first at zero pressure for approximately 1 minute.

**IMPORTANT!** The GP8035/GP8040 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 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.

# Installation Instructions

**IMPORTANT!** The pump and cooling system must be emptied if there is a danger of frost. Travel wind can cause water in pumps fitted on open vehicles to freeze even if the outside temperature is above freezing point.

To empty the cooling circuit, remove the joints (K11/K15) on the pump head (50). Blow out the circuit liquid at the joint connection (K11/K7) using compressed air.

The torque tension on the valve casing nuts (49A) is to be checked after approximately 200 operating hours. Please see page 8 for the torque values.

The pump must be at zero pressure when checking the torque tension.

**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 (=constant dripping).

**Definition of intermittent operation:** operation at full performance for not more than altogether 20 minutes an hour, with the pump running without pressure or turned off in between. For example, this can be full load operation for 5 minutes four times an hour with 10 minute breaks in between or continuous full load operation for 20 minute followed by a 40 minute break.

## 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 exceeded 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) nor 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 get switched on accidentally. 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, positive suction head 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 Industries 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 adhered to.**

# Specifications - Models GP8035/GP8035A

	U.S.	(Metric)
Volume.....	Up to 29.1 GPM	(110 LPM)
Discharge Pressure .....	Up to 7250 PSI	(500 bar)
Crankshaft Speed .....		Up to 580 RPM
Power Required.....	142 HP	106 kW
Inlet Pressure .....	Up to 29 PSI	(2.0 bar)*
Plunger Diameter.....	1.38"	35 mm
Plunger Stroke.....	2.83"	72 mm
Pinion Shaft Diameter.....	2.76"	70 mm
Fitting Key .....		B20 x 12 x 110, DIN 6685
Crankshaft Mounting .....		Either side
Crankshaft Rotation.....		Towards Manifold of pump
Temperature of Pumped Fluids .....	Up to 86 °F	(30 °C)**
Inlet Ports .....		(2) 2" BSP (NPT for GP8035A)
Discharge Ports .....		(2) 1" BSP (NPT for GP8035A)
Weight .....	793 lbs.	(360kg)
Crankcase Oil Capacity .....	3.3 Gal.	(12.5 liters)
Fluid End Material.....		Stainless Steel
NPSHR.....	27.9 ft. of head	8.5 mWs

(The specifications above are based on maximum pressure and maximum RPM for intermittent duty using cold water.)

\* If a separate cooling circuit is installed, the maximum inlet pressure would be 145 PSI (10 Bar).

\*\* If higher temperatures are needed, use a separate cooling circuit. Consult factory

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.

GP8035 Horsepower Requirements					
RPM	GPM	1000 PSI	2500 PSI	5000 PSI	7250 PSI
300	15.1	10.4	26.0	51.9	75.3
400	20.1	13.8	34.6	69.2	100.3
500	25.1	17.3	43.3	86.5	125.4
580	29.1	20.1	50.2	100.3	145.5

## SPECIAL NOTE:

The theoretical gallons per revolution (gal/rev) is 0.050.  
To find specific outputs at various RPM, use the formula:

$$\text{GPM} = 0.050 \times \text{RPM}$$

## 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 - Models GP8040/GP8040A

	U.S.	(Metric)
Flow .....	39.6 GPM .....	(150 LPM)
Discharge Pressure .....	5500 PSI .....	(380 bar)
Maximum Crankshaft Speed .....		580 RPM
Power Required .....	146 BHP .....	109 kW
Inlet Pressure .....	Up to 29 PSI .....	(2.0 bar)*
Plunger Diameter .....	1.57" .....	40 mm
Plunger Stroke .....	2.83" .....	72 mm
Pinion Shaft Diameter .....	1.77" .....	45 mm
Fitting Key .....		B20 x 12 x 110, DIN 6685
Crankshaft Mounting .....		Either side
Crankshaft Rotation .....		Towards Manifold of pump
Temperature of Pumped Fluids .....	Up to 86 °F .....	(30 °C)**
Inlet Ports .....		(2) 2" BSP (NPT for GP8040A)
Discharge Ports .....		(2) 1" BSP (NPT for GP8040A)
Weight .....	767 lbs. ....	(349 kg)
Crankcase Oil Capacity .....	3.3 Gal. ....	(12.5 liters)
Fluid End Material .....		Stainless Steel
NPSHR .....	24.6 ft.-head .....	7.5 mWs

(The specifications above are based on maximum pressure and maximum RPM for intermittent duty using cold water.)

Based on driver type, input speeds may vary.

\* If a separate cooling circuit is installed, the maximum inlet pressure would be 145 PSI (10 Bar).

\*\* If higher temperatures are needed, use a separate cooling circuit. Consult factory.

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.

GP8040-5100 HORSEPOWER REQUIREMENTS					
RPM	GPM	2000 PSI	3000 PSI	4000 PSI	5500 PSI
300	20.5	28.2	42.4	56.6	77.9
400	27.3	37.7	56.5	75.3	103.7
500	34.1	47.0	70.6	94.1	129.6
580	39.6	54.6	81.9	109.2	150.5

## SPECIAL NOTE:

The theoretical gallons per revolution (gal/rev) is 0.0683.  
To find specific outputs at various RPM, use the formula:

$$\text{GPM} = 0.0683 \times \text{RPM}$$

## 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:

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



This diagram illustrates the exploded view of a 3000 cc engine assembly. The central component is the red engine block, labeled '1'. Surrounding it are various sub-assemblies and individual parts, each identified by a number or letter code. Key components include:

- Top End:** Components like 14A, 15, 16, 21A/B, 21, 22, 23, 24, 25, 26, 27, 28, 29A, 29B, 29C, 29D, 29E, 29F, 29G, 29H, 29I, 29J, 29K, 29L, 29M, 29N, 29O, 29P, 29Q, 29R, 29S, 29T, 29U, 29V, 29W, 29X, 29Y, 29Z, 30A, 30B, 30C, 30D, 30E, 30F, 30G, 30H, 30I, 30J, 30K, 30L, 30M, 30N, 30O, 30P, 30Q, 30R, 30S, 30T, 30U, 30V, 30W, 30X, 30Y, 30Z, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
- Bottom End:** Components like 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
- Accessories:** Components like 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

The diagram uses dashed lines to show the assembly sequence and alignment of the parts. A legend at the bottom right identifies the part numbers for the 3000 cc engine.

# Part List - GP8035(A) & GP8040(A) Pumps

Item	Part	Description	Qty	Item	Part	Description	Qty
1	05380	Crankcase	1	50A	13162	Centering Stud	2
2	06893	Oil Filler Plug Assy. with Vent	1	51	05837	Inlet Valve Assembly	3
5	22929	Seal	2	51A	05595	Spring Tension Cap	3
6	12256	Plug	1	51B	05838	Inlet Valve Seat	3
7	05656	Plug, 3/8" BSP	1	51C	05752	Valve Plate	3
8	05035	Oil Dipstick Assembly	1	51D	05408	O-Ring	3
9	01009	O-Ring	1	51E	05450	Valve Spring	3
12	07109	Plug, 1/2" BSP	2	51F	05596	O-Ring	3
13	06272	Copper Gasket, 1/2" BSP	2	52	05839	Discharge Valve Assembly	3
14	05036	Bearing Cover Closed	1	52A	05595	Spring Tension Cap	3
14A	05298	Bearing Cover Open	1	52B	05840	Discharge Valve Seat	3
15	05112	Radial Shaft Seal	1	52C	05752	Valve Plate	3
16	05037	O-Ring	2	52D	05408	O-Ring	6
17	05038	Hexagon Socket Screw	16	52E	05450	Valve Spring	3
18	05039	Spring Ring	16	52F	05596	O-Ring	3
21	05044	Tapered Roller Bearing	2	53A	03585	Discharge Casing	1
21A	05042	Fitting Disc	1-5	53B	03586	Connection Plate	2
21B	05043	Fitting Disc	1-5	53C	07704	Copper Seal	2
22	05299	Crankshaft	1	53D	03587	Hexagon Socket Screw	8
23	05300	Fitting Key	1	53E	03588	Lens Gasket	2
24	05047	Connecting Rod Assembly	3	53F	03589	Connection Nipple, 1" (MNPT version)	1
25	05048	Crosshead c/w Plunger	3	53F	03589-BSP	Connection Nipple, 1" (MBSP version)	1
28	05049	Crosshead Pin	3	53G	03590	Plug, 1" BSP	1
29	05051	Hexagon Screw	4	54A	03591	Adapter, 2" (FNPT version)	1
29A	05381	Bracket 1 for Cooling Hose	2	54B	13286	O-Ring (NPT version)	1
29B	05383	Hose Shell for Cooling Hose	2	54C	03592	Hexagon Socket Screw (NPT version)	4
30	05052	Cover Plate	1	56	05409	Discharge Valve Retainer	3
30A	07225-0100	Hexagon Screw	5	56A	05408	O-Ring	3
30B	13136	Grommet	5	57	07173	Tension Spring	6
30C	08280	Washer	9	58	05753	Hexagon Socket Screw	12
30D	05050	Splash Cover	1	59	07109	Plug, 1/2" BSP	3
31	07623	Eye Bolt	3	59A	06272	Copper Gasket, 1/2" BSP	3
32	05058	Radial Shaft Seal	3	61	05841	Plug, 2" BSP	1
32A	03118	Oil Scraper	3	62	05842	Intermediate Casing	1
33	03119	Seal Retainer	3	62A	05843	Flat Seal	1
33A	05056	O-Ring	3	62B	05754	Hexagon Socket Screw	4
33B	05054	Clip Ring	3	62C	22764	Serrated Pin	4
33C	05059	Fitting Disc	3	62D	05844	Flat Leakage Seal	3
34	05060	Oil Shield	3	62E	06106	Allen Grub Screw	2
34A	05830	Locking Disc	3	62F	04583	Connector	1
36	05743	Plunger Pipe (GP8035)	3	63	05845	Drip Return Joint	2
36	05816	Plunger Pipe (GP8040)	3	63A	05757	Leakage Seal	2
38	05831	Seal Case (GP8035)	3	63B	05811	Hexagon Socket Screw	4
38	05817	Seal Case (GP8040)	3	64	05846	Drip Return Nipple	2
38A	05408	O-Ring (GP8035)	6	64A	11507-0001	O-Ring	6
38A	05818	O-Ring (GP8040)	6	65	05847	Drip Return Connection	1
39	05832	Seal Sleeve (GP8035)	3	65A	05848	Drip Return Plug	1
39	05819	Seal Sleeve (GP8040)	3	66	05303	Disc for Crankshaft	1
39A	05617	O-Ring	3	67	13433	Hexagon Screw	1
40	05744	Sleeve (GP8035)	3	79	07662	Tool for Valve	1
40	05820	Sleeve (GP8040)	3				
40A	05745	O-Ring (GP8035)	3	78	05849	Oil Cooler Assembly	1
40A	05821	O-Ring (GP8040)	3	K1	05026	Cooling Vane Plate	1
40B	05746	Pressure Ring (GP8035)	3	K2	05027	Seal for Gear Cover	2
40B	05822	Pressure Ring (GP8040)	3	K3	05028	Gear Cover	1
40C	05474	Clip Ring (GP8035)	3	K4	05029	Hexagon Head Countersunk Screw	8
40C	13217-0100	Clip Ring (GP8040)	3	K5	07381	Hexagon Socket Screw	8
41	05833	Pressure Ring (GP8035)	3	K6	08041	Washer	6
41	05823	Pressure Ring (GP8040)	3	K7	05741	Connection for Oil Cooler	1
41A	05747	Guide Ring (GP8035)	3	K8	06272	Copper Gasket, 1/2" BSP	6
41A	03559	Guide Ring (GP8040)	3	K9	07109	Plug, 1/2" BSP	2
42	05748	Rope Packing (GP8035)	6	K10	05031	Connecting Branch	3
42	05825	Triple Coiled Ring (GP8040)	3	K11	05032	Hose Adaptor	3
43	05749	Support Disc (GP8035)	3	K12	05033	Tube for Cooler	2
43	05826	Support Disc (GP8040)	3	K13	05402	Hose Clamp	4
44	05751	Support Ring (GP8035)	6	K14	05403	Hose Guard	2
44	05827	Support Ring (GP8040)	3	K15	05404	Hose Coupling Nut	1
45	06098	Tension Spring (GP8035)	3	K16	05405	Flat Gasket for Oil Cooler	4
45	13297	Tension Spring (GP8040)	3	K18	04158	Hexagon Socket Screw	4
49	05834	Stud Bolt	8	K19	05053	Washer	4
49A	05073	Hexagon Nut	8				
50	05835	Valve Casing	1				

# Pump Repair Kits - GP8035(A) & GP8040(A)

## Plunger Packing Kits

### GP8035 - # 09707

Item	Part #	Description	Qty.
38A	05408	O-Ring	6
39A	05617	O-Ring	3
40	05744	Sleeve	3
40A	05745	O-Ring	3
41A	05747	Guide Ring	3
42	05748	Rope Packing	6
44	05751	Support Ring	6

### GP8040 - # 09708

Item	Part #	Description	Qty.
38A	05818	O-Ring	6
39A	05817	O-Ring	3
40	05820	Sleeve	3
40A	05821	O-Ring	3
41A	03559	Guide Ring	3
42	05825	Rope Packing	3
44	05827	Support Ring	3

## Inlet Valve Kit - #09709

Item	Part #	Description	Qty.
51	05837	Valve Assembly	3
56A	05408	O-Ring	3

## Discharge Valve Kit - #09710

Item	Part #	Description	Qty.
52	05839	Valve Assembly	3
56A	05408	O-Ring	3

## Oil Seal Kit - #09584A

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

## GP8035(A) & GP8040(A) TORQUE SPECIFICATIONS

Position	Item #	Thread	Description	Lubrication Info	Torque Amount
12	07109	1/2" BSP	Plug, 1/2" BSP		59 ft.-lbs. (80 Nm)
15	05112		Radial Shaft Seal	Loctite 403	
17	05038	M12	Hexagon Socket Screw		64 ft.-lbs. (87 Nm)
24	05047	M10	Connecting Rod Assembly		37 ft.-lbs. (50 Nm)
32	05058		Radial Shaft Seal	Loctite 403	
36	05743/05816		Plunger Pipe		33 ft.-lbs. (45 Nm)
39	05832/05819		Seal Sleeve	Anti-Seize 350 Crankcase Outside	
49	05834	M20	Stud Bolt	Loctite 648 Crankcase Side	
49A	05073	M20	Hexagon Nut		266 ft.-lbs. (360 Nm)
53D	03587	M12	Hexagon Socket Screw		64 ft.-lbs. (87 Nm)
53F	03589		Connection Nipple, 1" NPT	Anti-Seize 350	
53G	03590		Plug, 1" BSP	Anti-Seize 350	
58	05753	M16	Hexagon Socket Screw	Anti-Seize 350	155 ft.-lbs. (210 Nm)
59	07109	1/2" BSP	Plug, 1/2" BSP		59 ft.-lbs. (80 Nm)
62B	05754	M8	Hexagon Socket Screw		17 ft.-lbs. (22.5 Nm)
62E	06106	M8	Allen Grub Screw	Loctite 243	17 ft.-lbs. (22.5 Nm)
63B	05811	M5	Hexagon Socket Screw		53 in.-lbs. (6 Nm)
K4	05029	M6	Hexagon Head Countersunk Screw		133 in.-lbs. (15 Nm)
K5	07381	M10	Hexagon Socket Screw		33 ft.-lbs. (45 Nm)
K9	07109	1/2" BSP	Plug, 1/2" BSP		59 ft.-lbs. (80 Nm)
K18		M6	Hexagon Socket Screw		133 in.-lbs. (15 Nm)



# Repair Instructions - GP8035(A) & GP8040(A) Pumps

## To Check Valves

Loosen screws (58), lift discharge casing (50B) up and away. Take out pressure springs (57). Pull out assembled valves (51 and 52) with fitting tool (p/n 07662).

**Dismantling valves:** the spring tension cap (51A, 52A) is screwed together with the valve seat (51B or alternatively 52B). Screw off spring tension cap, take out springs (51E, 52E) and valve plate (51C, 52C). Check sealing surfaces and O-rings (51D/F, 52D/F, 56A).

Replace worn parts.

Coat threads of valve seat with silicon grease or molybdate anti-seize Cu-7439 when reassembling. Before re-fitting the valves, clean the sealing surfaces in the casing and check for any damage.

Tighten screws (58) at 155 ft.-lbs. (210 Nm); check torque tension after 8-10 operating hours.

## To Check Seals and Plunger Pipe

Screw off hexagon nuts (49A) and hose coupling (K11 and K15), re-move pump head together with seal case (38) and intermediate casing (62) from crankcase (1). If necessary, carefully tap the valve casing (50) past the centring stud (50A) using a rubber hammer.

**IMPORTANT!** If necessary, support the pump head by resting it on wooden blocks or by using a pulley.

Take off flat leakage seal (62D) and check.

Screw off Plunger (36) from crosshead w. plunger (25) and take seal sleeve (39) together with all mounted parts out of the drive.

Pull plunger out of seal assembly and check for any damage. Clean centring and top-surface of crosshead w. plunger (25). Take out tension spring (45) Lever whole seal unit (41-44) carefully out off the seal sleeve with a screwdriver from the backside. Check plunger surface and seals. Check O-rings (39).

Renew damaged parts.

Check Leakage seal (40) and O-ring (40A) after removing off clip-ring (40C) and pressure ring (40B) and renew if necessary.

**IMPORTANT!** Be careful not to damage seal sleeve (39) pressure ring (41) and guide ring (41A). Check the inner diameter of the pressure ring and guide ring for wear and if necessary replace together with seals (42) and support ring (44). Clean all parts. New parts should be lightly coated with silicon grease before installation.

Insert the seal unit (41-45) in to the sleeve. Push the plunger (36) care-fully through the seals from the crankcase side. If necessary, the seals can be held tightly using a suitable pipe support held on the other side of the seal sleeve.

Take out the seal case (38) from the intermediate casing (62) and check O-rings (38A) (if necessary secure 2 screwdrivers in the front O-ring groove to extract seal casing from intermediate casing). Coat O-rings with silicon grease before installing.

**IMPORTANT!** Mounting surfaces of the crankcase, seal sleeves, in-termediate casing and valve casing must be clean and free of damage. The components must lie exactly and evenly on one another. The same exactness applies for all centring positions in the crankcase, intermedi-ate casing, pressure- and valve casing.

Coat the seal sleeve lightly with anti-corrosive grease (e.g. molybdate no. Cu-7439) in its fitted area towards the crankcase. Insert seal sleeves in to their crankcase fittings.

**IMPORTANT!** Watch the even milled surfaces on the seal sleeves. They must stand vertically on each other.

Turn the pump per hand until the plunger (25) rests against the plunger (36). Tighten plunger (36) with 33 ft.-lbs. (45 Nm).

Insert the seal tension spring (45) in to the seal sleeve (39).

# Repair Instructions - GP8035(A) & GP8040(A) Pumps

## Mounting Valve Casing:

Press seal cases (38) with the stepped OD dia. 65 carefully to its stop in the centring holes of the intermediate casing. Mount flat leakage seal (62D).

**IMPORTANT!** The flat leakage seal (62D) must be positioned with its  $\varnothing 3$  bore onto the notched pin (62C) on the intermediate casing. The leakage return bores in the intermediate casing and in the seal sleeves must stay open by the cut-outs in the seal (62D).

Push valve casing (50) together with intermediate casing (62) carefully on to the centring studs (50A).

Tighten hexagon nuts 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

Take out plungers and seal sleeves as described above.

Drain oil by removing plug (12).

After removing the clip ring (33B), lever out the seal retainer (33) with a screwdriver. Open hose adaptor (K11).

Screw off gear cover (K3) and remove the cooling vane plate (K1) by removing the screws (K4). Screw off 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 rods must be fitted in their exact original position on the crankshaft journals.

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 not to bend the connecting rod.

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.

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 .

Mount connecting rod halves in their exact original position and tighten at 37 ft.lbs. (50 Nm).

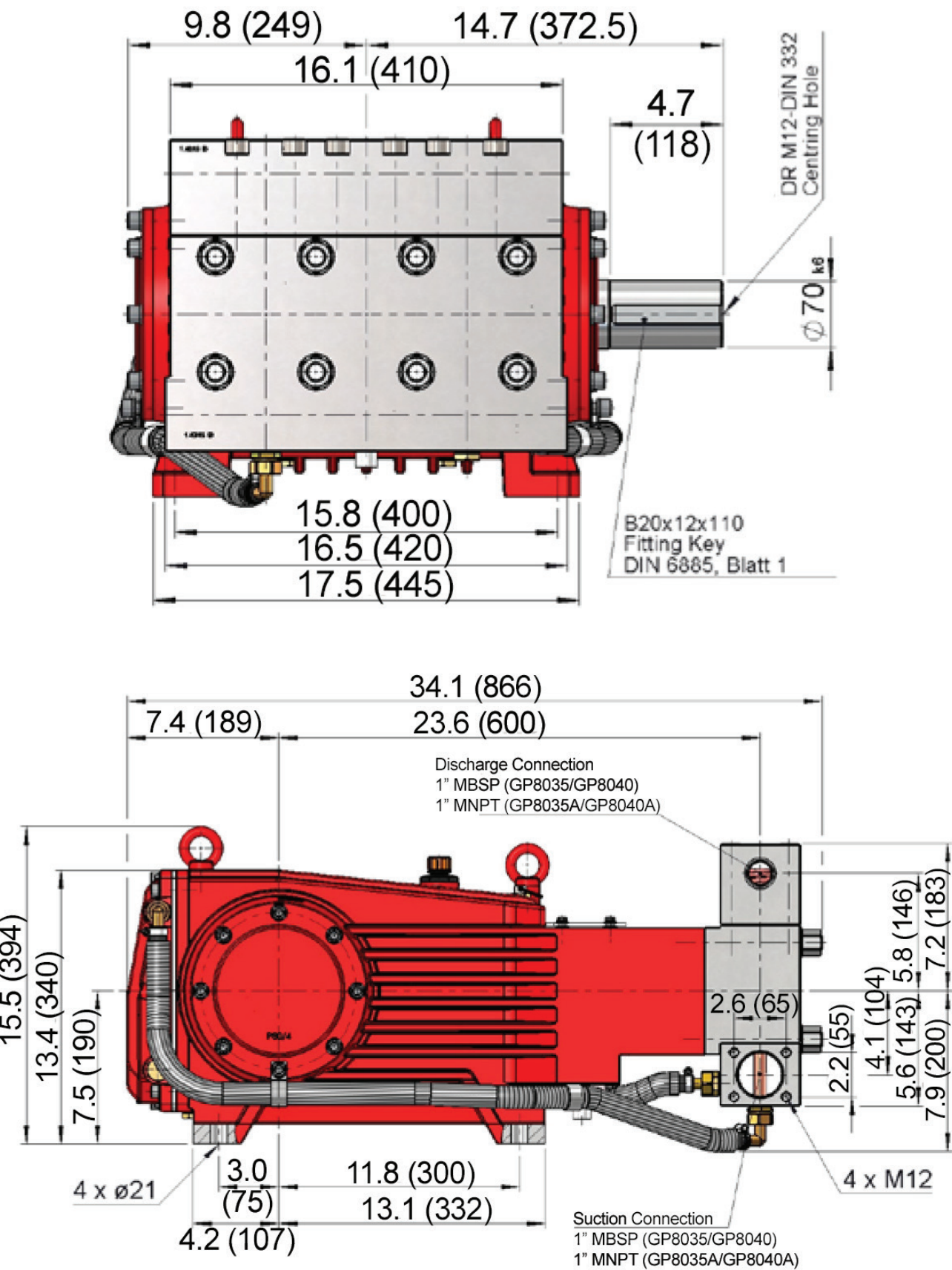
**IMPORTANT!** Connecting rods must be able to move slightly sideways on the stroke journals. Mount bearing cover (14A) and tighten screws (17) at 64 ft.-lbs. (87 Nm).

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 rods must sit exactly in the middle of each crank pin. Fit the bearing cover (14) and tighten the screws (17) at 64 ft.lbs. (87 Nm).

**IMPORTANT!** Possible axial float of the seal adaptor (33) to be compensated with shims (33C).

Mount cooling plate (K1) and gear cover (K3) with their respective seals (K2). When assembling the cooling circuit line, make sure the oil cooler connection (K7) is always joined to the upper connection (K3) of the gear cover.

Pump Dimensions - GP8035(A) & GP8040(A) Pumps - 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. 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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