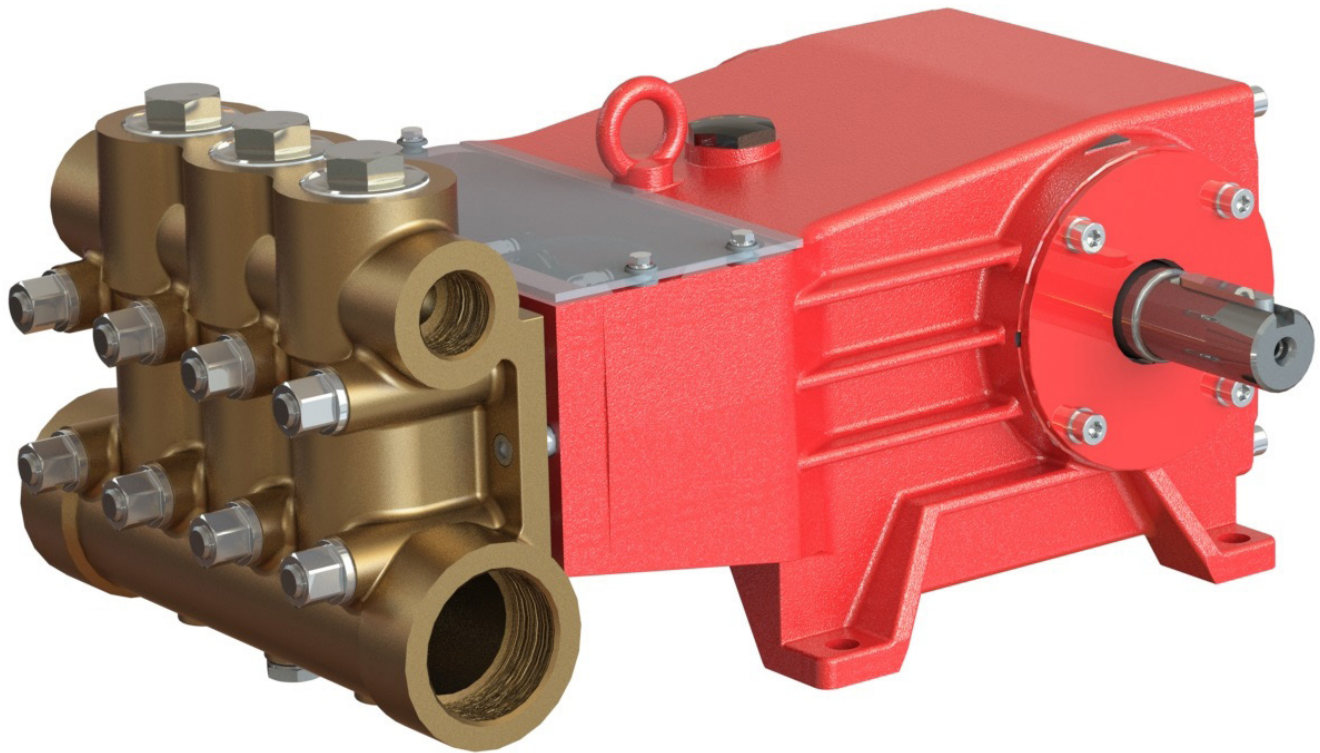


Models

GP6140 and GP6145

Triplex Ceramic
Plunger Pump
Operating Instructions/
Manual



GIANT
Performance Under Pressure

Updated 07/25

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SPECIFICATIONS

	Max. Flow		Pressure		Max. Speed	Max. Inlet Pressure		Plunger Diameter		Power Req'd	
Model	GPM	l/min	PSI	bar	RPM	PSI	bar	in	mm	BHP	kW
GP6140	36.7	139	2175	150	800	145	10	1.57	40	57.0	42.5
GP6145	46.5	175.9	1740	120	800	145	10	1.77	45	57.8	43.1

	U.S.	Metric
Plunger Stroke	1.89"	48mm
Crankshaft Diameter	1.78"	45mm
Key Width	0.47"	12mm
Crankshaft Mounting		Either side
Shaft Rotation		Top of pulley towards manifold
Temperature of Pumped Fluids (max). ...	140 °F	60 °C
Inlet Ports		(2) 2-1/2" BSP
Discharge Ports		(2) 1-1/4" BSP
Weight	309 lbs.	140 Kg
Crankcase Oil Capacity	1.1 Gal.	4.2 Liters
Fluid End Material.....		Aluminum Bronze
NPSHR (GP6140)	26.9 ft. of head	8.2 m of head
NPSHR (GP6145)	29.5 ft. of head	9.0 m of head

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:

$$HP = (GPM \times PSI) / 1450$$

GP6140 HORSEPOWER REQUIREMENTS					
RPM	GPM	500 PSI	1000 PSI	1500 PSI	2175 PSI
400	18.4	6.6	13.1	19.7	28.5
500	22.9	8.2	16.4	24.6	35.6
600	27.5	9.8	19.7	29.5	42.8
700	32.1	11.5	22.9	34.4	49.9
800	36.7	13.1	26.2	39.3	57.0

GP6145 HORSEPOWER REQUIREMENTS					
RPM	GPM	500 PSI	1000 PSI	1500 PSI	1740 PSI
400	23.3	8.3	16.6	24.9	28.9
500	29.1	10.4	20.8	31.1	36.1
600	34.9	12.5	24.9	37.4	43.3
700	40.7	14.5	29.1	43.6	50.6
800	46.5	16.6	33.2	49.8	57.8

INSTALLATION INSTRUCTIONS

Performance data for intermittent operation, data for continuous operation on request.

For information on intermittent operation and calculating of the performance data, see the Giant Industries assembly instructions.

NPSHR / Inlet pressure

Required NPSH refers to water (at 68 °F [20°C]) at maximum permissible pump speed.

The inlet pressure on the suction side must not exceed 29 PSI (2 bar).

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

Level of noise emission

Emission sound pressure level: ≤ 92 dB(A)

Fields of application

The fields of application of these pump types correspond to the specifications in the assembly instructions Giant Industries.

Ambient conditions

Ambient temperature: $41\text{ °F} < T_{\text{Amb.}} < 86\text{ °F}$

Ambient temperature: $5\text{ °C} < T_{\text{Amb.}} < 30\text{ °C}$

Oil filling

Filling quantity: 1.1 gallons (4.2 L)

- Quality: Industrial gear oil **ISO VG 220** or automotive gear oil **SAE 90 GL4 (Giant's p/n 01154)**
- Intervals: first oil change after **50 operating hours**, then every **1000 operating hours**, but at the latest after **12 months**.

6. Installation/ Putting into Operation

6.1 Shaft protector

When the pump is in operation, the open shaft end must be covered up by shaft protector (21), the driven shaft side and coupling by a contact-protector and the plunger room by cover (30).

6.2 Direction of pump rotation

Set the direction of rotation of the drive unit according to the direction of rotation arrow on the crankcase.

6.3 Suction line filter

Recommended mesh size 150 µm.

7. Operation

For informations, see assembly instructions Giant Industries, Inc.

GP6140 and GP6145 Series Torque Specifications			
Position	Thread	Lubrication Info.	Torque Amount
10	M10		33 ft.-lbs. (45 Nm)
12	1/2" BSP		59 ft.-lbs. (80 Nm)
15		Loctite 403	
24	M10		30 ft.-lbs. (40 Nm)
32		Loctite 403	
36			33 ft.-lbs. (45 Nm)
38	M10	Loctite 243	30 ft.-lbs (40 Nm)
40		Copper Pase Crankcase Side	
46	1/8" BSP	Loctite 5400	
49		Loctite 648 Crankcase Side	
49A	M16		133 ft.-lbs. (180 Nm)
56	M60x1.5	Anti-Seize 350	162 ft.-lbs. (220 Nm)

This exploded view diagram illustrates the assembly of a 4-cylinder engine. The main components are shown in a disassembled state to show their relative positions and assembly sequence. The parts are numbered as follows:

- Engine Block and Base:** 1 (Engine Block), 2 (Gasket), 30 (Base Plate), 30A, 30B, 30C (Base Bolts), 4 (Base Mount), 5 (Base Mount Gasket), 8 (Screwdriver), 9 (Screwdriver).
- Cylinder Head Assembly:** 10 (Head Gasket), 11 (Head Bolts), 12 (Head Bolt Washers), 13 (Head Bolt Nuts), 14 (Head Gasket), 15 (Head Gasket), 16 (Head Gasket), 20 (Head Gasket), 20A (Head Gasket), 21 (Head Gasket), 21A (Head Gasket).
- Piston and Connecting Rod Assembly:** 22 (Piston Pin), 23 (Piston Pin Retainer), 24 (Piston Pin Retainer), 25 (Piston Pin Retainer), 26 (Piston Pin Retainer), 27 (Piston Pin Retainer), 28 (Piston Pin Retainer), 29 (Piston Pin Retainer), 30 (Piston Pin Retainer), 31 (Piston Pin Retainer), 32 (Piston Pin Retainer), 33 (Piston Pin Retainer), 33A (Piston Pin Retainer), 33B (Piston Pin Retainer), 33C (Piston Pin Retainer), 34 (Piston Pin Retainer), 35 (Piston Pin Retainer), 36 (Piston Pin Retainer), 37 (Piston Pin Retainer), 38 (Piston Pin Retainer), 39 (Piston Pin Retainer).
- Valve Train Assembly:** 40 (Valve), 41 (Valve), 42 (Valve), 43 (Valve), 44 (Valve), 45 (Valve), 46 (Valve), 47 (Valve), 48 (Valve), 49 (Valve), 50 (Valve), 51 (Valve), 51A (Valve), 51B (Valve), 51C (Valve), 51D (Valve), 51E (Valve), 52 (Valve), 53 (Valve), 54 (Valve), 55 (Valve), 56 (Valve), 57 (Valve), 58 (Valve), 59 (Valve), 60 (Valve), 61 (Valve).
- Other Components:** 62 (Screwdriver), 63 (Screwdriver), 64 (Screwdriver), 65 (Screwdriver), 66 (Screwdriver), 67 (Screwdriver).

GP6140 & GP6145 PARTS LIST

ITEM	PART	DESCRIPTION	QTY.	ITEM	PART	DESCRIPTION	QTY.
1	13200	Crankcase	1	39	07665	Copper Ring	3
2	13000	Oil Filler Plug Assembly	1	40	12555	Seal Sleeve (GP6140)	3
4	13201	Crankcase Cover	1	40	12556	Seal Sleeve (GP6145)	3
5	13202	O-Ring for 4	1	41	12557	Seal Case	3
8	06894	Oil Dipstick Assembly	1	41A	07721	O-Ring for 41	3
9	01009	O-Ring for 8	1	41C	13141	O-Ring for 41	3
10	13133	Hexagon Screw	12	42	13297	Tension Spring	3
11	06725	Spring Washer	12	43	12558	Sleeve Support Ring (GP6140)	3
12	07109	Drain Plug	3	43	13296	Sleeve Support Ring (GP6145)	3
13	06272	Seal for 12	2	44	05308	Sleeve (GP6140)	6
14	12549	Bearing Cover	2	44	13294	Sleeve (GP6145)	6
15	13205	Radial Shaft Seal	2	44A	05309	Pressure Ring (GP6140)	3
16	08055	O-Ring for 14	2	44A	13293	Pressure Ring (GP6145)	3
20	13206	Taper Roller Bearing	2	45	12561	Leakage Seal (GP6140)	3
20A	13207	Fitting Disc	1-5	45	13290	Leakage Seal (GP6145)	3
21	05881	Shaft Guard	1	45A	12562	Spacer Disc (GP6140) only	3
21A	05645	Shaft Protector	1	46	05169	Threaded Pipe	3
22	06895	Crankshaft	1	49	13159	Stud Bolt	8
23	08213	Fitting Key	1	49A	13160	Hexagon Nut	8
24	06896	Connecting Rod Assembly	3	49C	13162	Centring Stud	2
25	12550	Crosshead Assembly	3	50	05191	Valve Casing	1
28	06898	Crosshead Pin	3	51	03676	Valve Assembly (51A-E)	6
30	13214	Cover Plate	1	51A	12564	Valve Seat	6
30A	07225-0100	Hexagon Screw	4	51B	03383	Valve Plate	6
30B	13136	Grommet	4	51C	03673	Valve Spring	6
30C	05053	Disc	4	51D	03674	Spacer Pipe	6
31	07623	Eye Bolt	1	51E	03675	Valve Spring Guide	6
32	06118	Radial Shaft Seal	3	52	05166	O-Ring for 51	6
33	13216	Seal Retainer	3	56	05171	Plug	3
33A	07721	O-Ring for 33	3	57	05167	O-Ring for 56	3
33B	13217-0100	Circlip for 33	3	59	07661	Copper Seal for 12	1
33C	12551	Fitting Disc	3	60	13151	Plug 1-1/4" BSP	1
34	13218	Oil Scraper	3	61	13171	Plug 2-1/2" BSP	1
36	12552	Plunger Connection	3	66	13362	Disc for Crankshaft	1
36A	07125	Centering Sleeve	3	67	13358	Hexagon Screw	1
37	12553	Plunger Pipe (GP6140)	3				
37	05157	Plunger Pipe (GP6145)	3				
38	12554	Tensioning Screw	3				

GP6140 & GP6145 REPAIR KITS

Plunger Packing Kits

GP6140 - # 09867

Item	Part #	Description	Qty.
41A	07721	O-Ring	3
41C	13141	O-Ring	3
44	05308	Sleeve	6
45	12561	Grooved Ring	3

GP6145 - # 09868

Item	Part #	Description	Qty.
41A	07721	O-Ring	3
41C	13141	O-Ring	3
44	13294	Sleeve	6
45	13290	Grooved Ring	3

Valve Assembly Kit - #09869

Item	Part #	Description	Qty.
51A	12564	Valve Seat	6
51B	03383	Valve Plate	6
51C	03673	Valve Spring	6
51E	03675	Valve Spring Guide	6
52	05166	O-Ring	6
57	05167	O-Ring	3

Oil Seal Kit - 09870

Item	Part #	Description	Qty.
32	06118	Radial Shaft Seal	3
33A	07721	O-Ring	3
33B	13217-0100	Circlip	3

GP6140 & GP6145 REPAIR INSTRUCTIONS

Maintenance and Servicing

For the type of threadlocker used and the required tightening torques, observe the table on page 3.

Special tools required

The following special tools are required for assembly:

- Pull-out tool size 5

Suction and Discharge Valves

Loosen plugs (56).

Take out complete valve assembly (51) with pull-out tool size 5.

The O-rings (52) between the suction and discharge valve and under the suction valve, can be taken out with a bent piece of wire.

Dismantle valves:

The valve seat (A) is pushed out of the spacer pipe (D) by hitting the valve plate (B) carefully with a bolt. Check sealing surfaces and replace worn parts. Check O-rings.

When reinstalling the valve, particular care must be taken that the O-rings sit properly in their fittings in the valve casing.

Tighten plugs (56) to the required torque.

Seals and Plunger

Loosen nuts (49A) and remove pump head (50).

Separate plunger connection (36) from crosshead assembly (25) by means of an open-end wrenches (size 27).

Pull seal sleeves (40) out of their fittings in the crankcase.

Take seal case (41) out of seal sleeve (40).

Remove tension spring (42).

Examine plunger parts (36-39), seals (44,45) and O-rings. Replace worn parts.

When replacing plunger pipe (37), tighten tension screw (38) to the required torque.

Grease seals with Silicone before installing.



Don't loosen the 3 plunger screws (36) before the valve casing has been removed.

Otherwise the tension screw (38) could hit against the spacer pipe (51D) when the pump is being turned.

Seal unit (43, 44, 44A) is pretensioned by spring (42). 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.

When reassembling, tighten plunger screws (36) to the required torque.

Mounting Valve Casing:

Check O-rings on seal case (41).

Clean surfaces of seal sleeves in gear box and sealing surfaces of valve casing.

Push valve casing carefully onto O-rings of seal case and centring studs (49C).

Tighten nuts (49A) to the required torque.

If required, supplementary assembly instructions can be requested from Giant Industries.

Spare Parts

When **ordering spare parts**, please specify **pump type, pump number, year of manufacture**, and **parts code-number**.

This data can be found on the spare parts list.

For information, see assembly instructions Giant Industries.

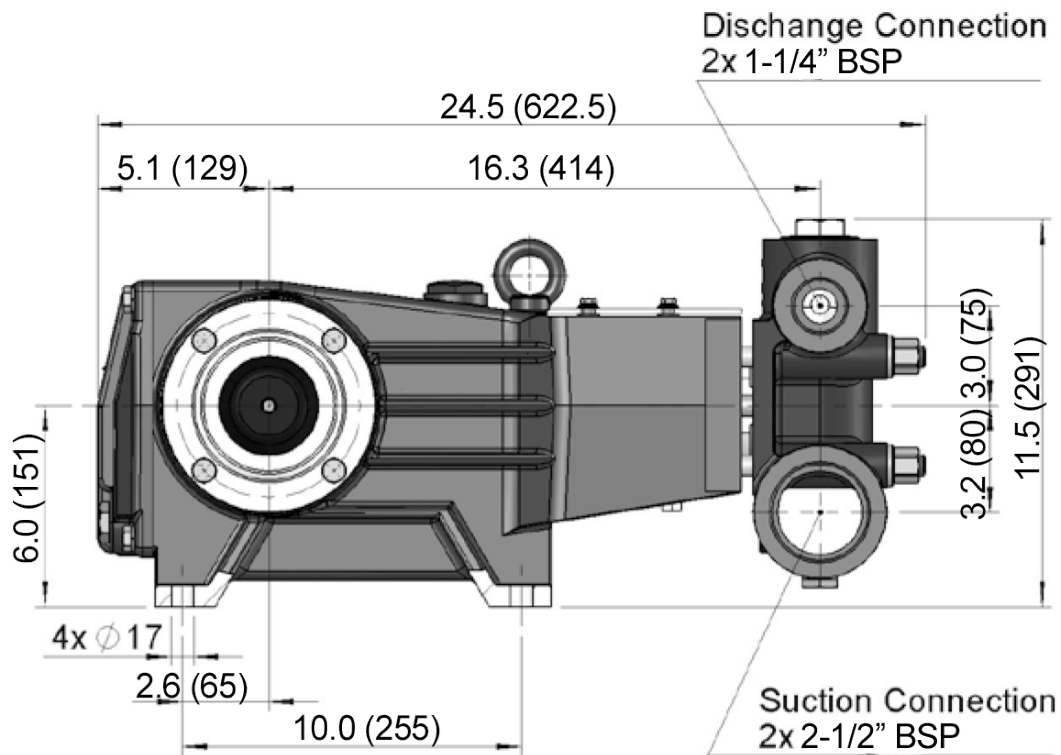
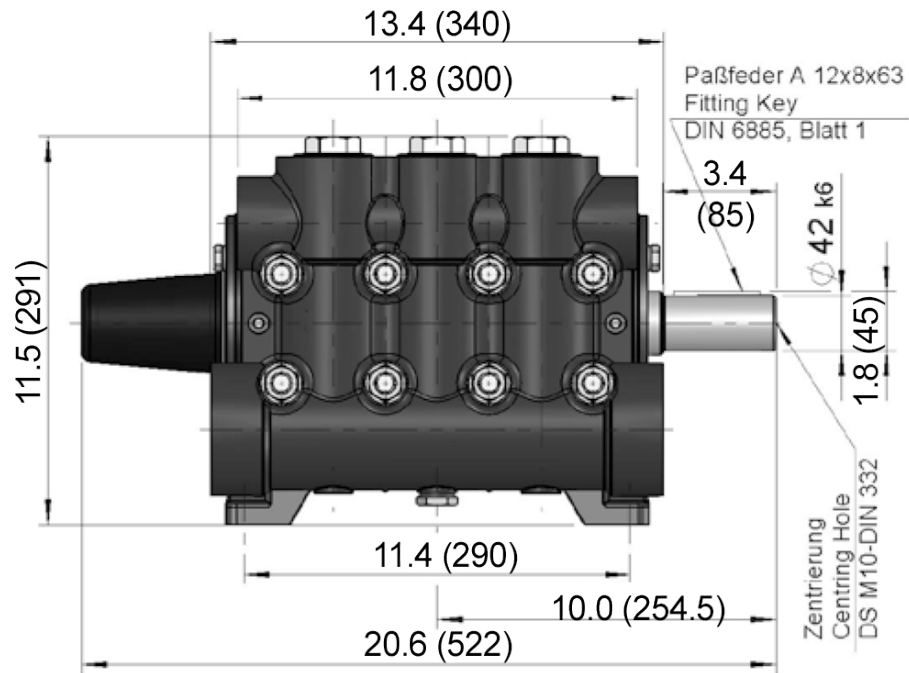
Materials Used

Valve Casing:	Aluminum-Bronze
Plunger:	Solid ceramic
Valves:	High-Grade Stainless Steel
Seals:	Nitrile with fabric reinforcing
O-Rings:	Nitrile

Paint

The pump drive is painted in RAL 3001 as standard.

GP6140 & GP6145 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. 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
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