

GIANT INDUSTRIES PLUNGER PUMPS



Data Sheet with supplementary assembly and safety instructions

In addition to the information in this data sheet, the Giant Industries assembly instructions must be observed.

Performance

	Power Required	Pressure	Max. Speed	Max. Flow	Max. Temp.	Plunger ø	Plunger Stroke	Weight	NPSHR
Model	BHP (kW)	PSI (bar)	RPM	GPM (l/min)	°F (°C)	in (mm)	in (mm)	lbs. (kg)	ft. of head (mWs)
P490	13.0 (9.7)	2000 (140)	1450	15.7 (59.5)	160 (70)	1.18 (30)	0.79 (20)	39.7 (18)	32.8 (10.0)
P490*	21.8 (16.3)	1000 (69)	1750	18.9 (71.7)	160 (70)	1.18 (30)	0.79 (20)	39.7 (18)	32.8 (10.0)
P470	25.8 (19.2)	2000 (140)	1450	18.4 (69.7)	160 (70)	1.18 (30)	0.94 (24)	39.7 (18)	32.8 (10.0)

* Intermittent Rating

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 Plunger Pumps assembly instructions.

NPSHR / Inlet pressure

Required NPSH refers to water at 70 °F (20°C) at maximum permissible pump speed.

Maximum inlet pressure: 29 PSI (2 bar)

Level of noise emission

Emission sound pressure level: ≤ 88 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 °F < T_{Amb.} < 86 °F

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

Oil filling

- Filling quantity: **30.4 fl. oz. (0.9 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 **500 operating hours**, but at the latest after **12 months**

Installation/ Putting into Operation

To Turn Drive Shaft to the Other Side

Remove the valve casing (26), seal casing (21) together with the seal adaptors (20).

Turn the drive 180° round.

Interchange plug (5B) and oil dipstick (2).

Turn the gear cover (3) 180° round.

Mount the valve casing together with the seal casing and seal adaptors (20).

Making sure that the bores in the seal adaptors face downwards.

Direction of pump rotation

When looking at crankshaft with valve casing mounted on left-hand side, counterclockwise direction of rotation.

When looking at crankshaft with valve casing mounted on right-hand side, clockwise direction of rotation.

Suction line filter

Recommended mesh size 150 µm.

Operation

For informations, see Assembly Instructions Giant Industries.

Malfunctions / Remedy

For information, see assembly instructions Giant Industries, Inc.

Material Used

Valve Casing: Special Brass

Plunger: Solid Ceramic

Valves: High-Grade Stainless Steel

Seals: Nitrile with Fabric Reinforcing

O-Rings: Nitrile

Paint

The pump drive is painted in RAL 7004 as standard.

Maintenance and Servicing

For the type of thread locker used and the required tightening torques, observe the table in the exploded view

Special tools required

The following special tools are required for assembly:

- Tool-15
- Pull-out tool size 3

Suction and Discharge Valves

Discharge Valves:

Remove plugs (32) with a socket wrench.

Remove the exposed spring tension cap (30) from valve seat by pushing it sideways using a screwdriver. Remove spring tension cap (30), valve spring (29) and valve plate (28).

Pull out valve seat (27) with a size 3 extractor tool.

Suction Valves:

Remove hexagon socket screws (34) and remove valve casing (26) by pulling it off to the front.



If the seal casing (25) does not separate from the valve casing (26), press both casings apart by placing two flat screwdrivers in the side notches on the seal casing.

Be careful not to damage casing surfaces.

Using two screwdrivers, pry out seal sleeves (21) out of the valve casing (26).



When extracting the valve holders (22), make sure not to scratch the outer bore diameter as this is a sealing surface.

The exposed suction valve parts are to be removed the same way as the discharge valves as described above.

Check valve components for wear and damage.

Check O-rings (21A, 31, 33). Replace worn parts. Pay attention to the sequence of installation when reassembling.

New O-rings slightly coated with oil should be preferably used.

Coat O-rings (25B) with silicon grease and place them in their recesses.

Insert seal sleeves (21) into valve casing (26) before affixing the whole unit by passing it through the plungers.

Tighten screws (34) crosswise and evenly to the required torque.

Tighten plugs (32) to the required torque.

Seals and Plunger pipe

Remove hexagon socket screws (34) and take off valve casing (26).

The seal retainers (20) will remain in the crankcase. Using two screwdrivers, lever the seal casing (25) off the valve casing.

Using two screwdrivers, lever the seal sleeves (21) out of the valve casing (26) or the intermediate casing (25).

Press the grooved rings (23/23A) and support rings (24) out of the intermediate casing (25) using a screwdriver.

Examine O-rings (21A/25B) and seals (23/23A).

Replace seals if worn.

Wet new seals and O-rings thinly with silicone grease or mineral oil and carefully install with Tool-15.

Check plunger surfaces (16).

Damaged surfaces lead to accelerated seal wear.

Deposits of all kinds must be removed from the plungers.



Plunger surfaces are not to be damaged. If there are lime deposits in the pump, care must be taken that the drip-return bore in parts (25) and (26) ensure trouble-free drip-return.

If the plunger pipe (16B) is worn, screw off tension screw (16D) and remove together with plunger pipe. Check and clean plunger (16A) surfaces and mount new plunger pipe.

Cover thread of tension screw (16D) with a thin film of thread-locker and tighten carefully to the required torque.



Under no circumstances should thread-locker get between the plunger pipe (16B) and the centring neck on the plunger (16A).

Tensioning of the plunger pipe due to eccentric tightening of the tensioning screw or due to dirt or damage to the contact surface can lead to breakage of the plunger pipe.



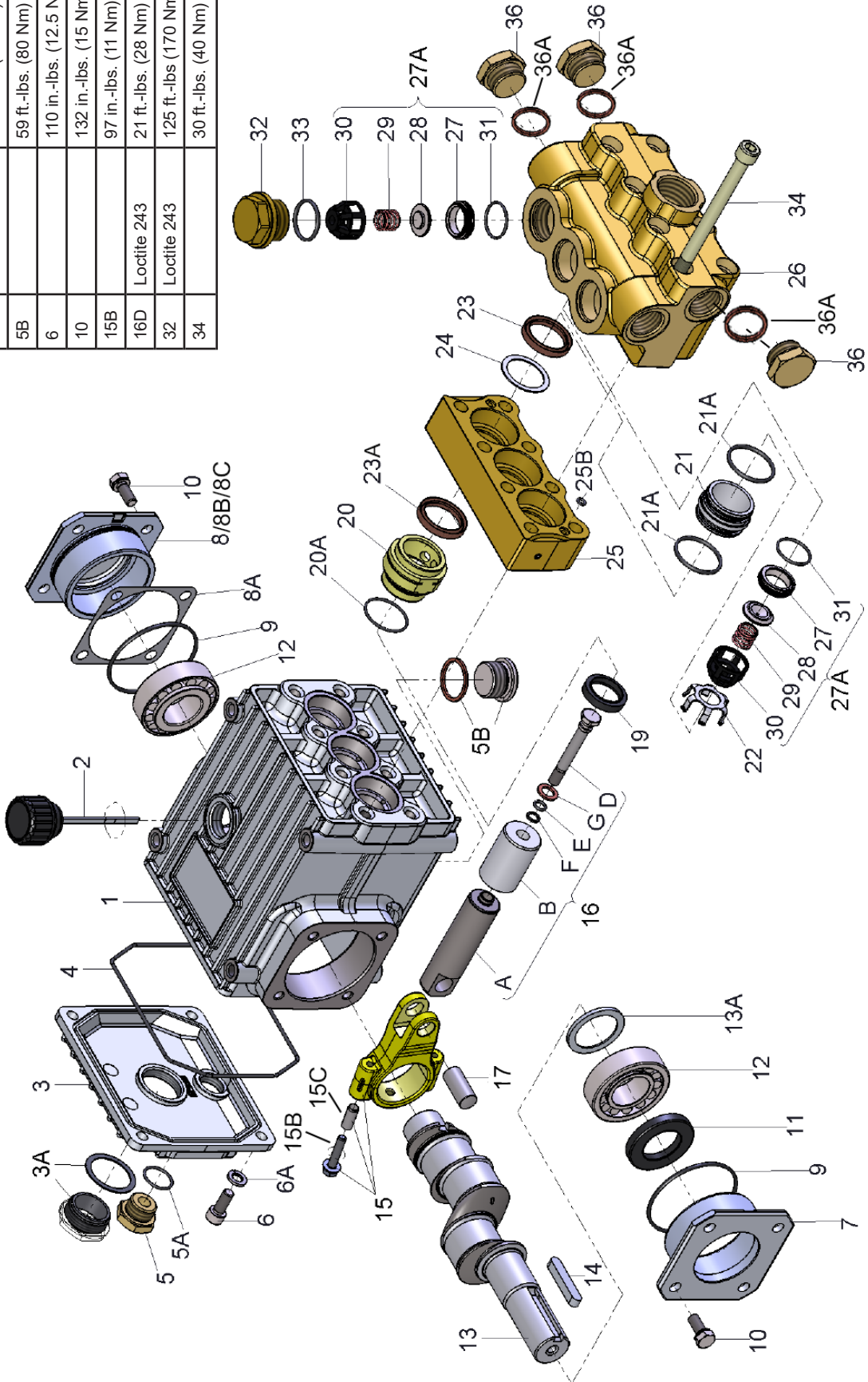
When refitting the seal sleeves (21), the long neck side must be put into the valve casing (26) firstly.

When reassembling, tighten the screws (34) to the required torque.

If required, supplementary Assembly Instructions can be requested from Giant Industries, Inc.

Exploded View - P470A/P490A

P470A/P490A TORQUE SPECIFICATIONS		
Item	Lubrication Info	Torque Amount
3A	Loctite 5910	106 in.-lbs. (12 Nm)
5		59 ft.-lbs. (80 Nm)
5B		59 ft.-lbs. (80 Nm)
6		110 in.-lbs. (12.5 Nm)
10		132 in.-lbs. (15 Nm)
15B		97 in.-lbs. (11 Nm)
16D	Loctite 243	21 ft.-lbs. (28 Nm)
32	Loctite 243	125 ft.-lbs (170 Nm)
34		30 ft.-lbs. (40 Nm)



P470A/P490A 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	08377	Crankcase	1	21	06929	Seal Case	3
2	08378	Oil Fill Plug with Gasket	1	21A	07150	O-Ring	6
3	06479	Crankcase Cover	1	22	06930	Valve Holder	3
3A	07186	Oil Sight Glass w/Gasket	1	23	06931*	Grooved Seal, Brown	3
4	08380	O-Ring	1	23A	03686	Grooved Seal, Black	3
5	07109	Oil Drain Plug	1	24	06932	Support Ring	3
5A	06015	O-Ring	1	25	06933	Intermediate Casing (P470/P490)	1
5B	08092	Plug with Gasket	1	25	06933-7000	Intermediate Casing (P470-7000/P490-7000)	1
6	01010	Screw	4	25A	05934	Thread Plug	2
6A	01011-0400	Spring Washer	4	25B	02009	O-Ring	2
7	04739	Bearing Cover, Open	1	26	06935	Valve Casing (P470/P490)	1
8	05291	Bearing Cover, Closed	1	26	06935-7000	Valve Casing (P470-7000/P490-7000)	1
8A	05292	Shim, 0.1 mm	1-6	27A	04365	Valve Assembly	6
9	01016	O-Ring	2	27	06937	Valve Seat	6
10	07114	Screw with Washer	8	28	06938	Valve Plate	6
11	07459	Radial Shaft Seal	1	29	06959	Valve Spring	6
12	05350	Bearing	2	30	06939	Valve Spring Retainer	6
13	04741	Crankshaft (P470)	1	31	07212	O-Ring	6
13	04740	Crankshaft (P490)	1	32	08373	Plug (P470/P490)	3
13A	04742	Spacer Ring	1	32	08373-0700	Plug (P470-7000/P490-7000)	3
14	08091	Fitting Key	1	33	07214	O-Ring	3
15	08390	Connecting Rod Assy.	3	34	06494	Cap Screw	8
15B	05349	Connecting Red Screw	3	36	07703	Plug, 3/4" BSP (P470/P490)	3
15C	05348	Adapter Sleeve	3	36	07703-0700	Plug, 3/4" BSP (P470-7000/P490-7000)	3
16	05933	Plunger Assembly	3	36A	04529	Copper Ring	3
16A	05352	Plunger Base	3	<p>*Important! If the pump is not used for a long period of time, it is possible the seals (23) could become hard or brittle thus causing the pump to leak when put into operation. If this is the case we recommend these seals be replaced every 4 years.</p>			
16B	06927	Plunger Pipe	3				
16D	08399	Tension Screw	3				
16E	07023	O-Ring	3				
16F	07203	Support Ring	3				
16G	07258	Copper Gasket	3				
17	06790	Crosshead Pin	3				
19	08366	Oil Seal	3				
20	06928	Seal Adapter	3				
20A	08059	O-Ring	3				

P470A/P490A REPAIR KITS

Plunger Packing Kit, #09565A

<u>Item</u>	<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
20A	08059	O-Ring	3
21A	07150	O-Ring	6
23	06931	Grooved Seal, Brown	3
23A	03686	Grooved Seal, Black	3
24	06932	Support Ring	3
25B	02009	O-Ring	2

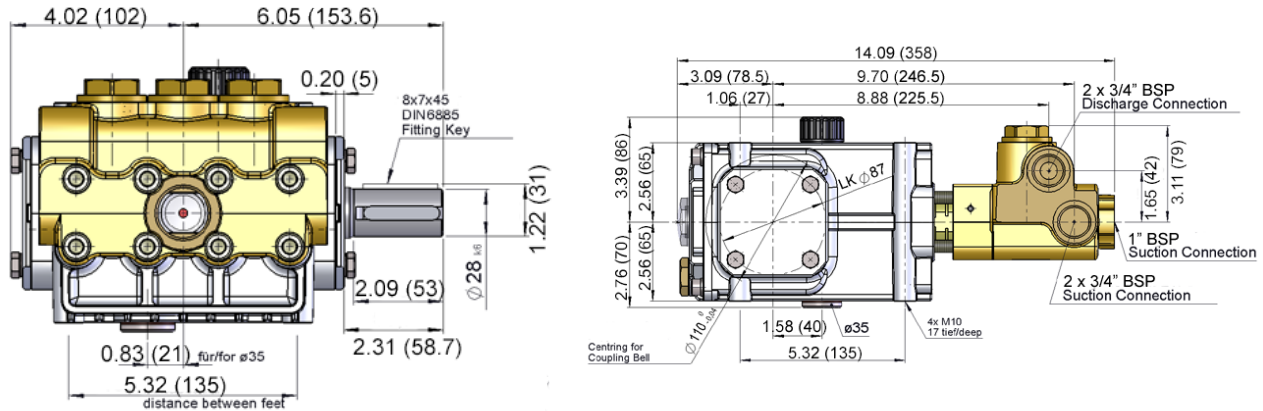
Valve Assembly Kit, #09566

<u>Item</u>	<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
27A	04365	Valve Assembly	6
31	07212	O-Ring	6
33	07214	O-Ring	3

Oil Seal Kit, #09306

<u>Item</u>	<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
19	08366	Oil Seal	3

P470A/P490A Dimensions - in (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
Performance Under Pressure

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