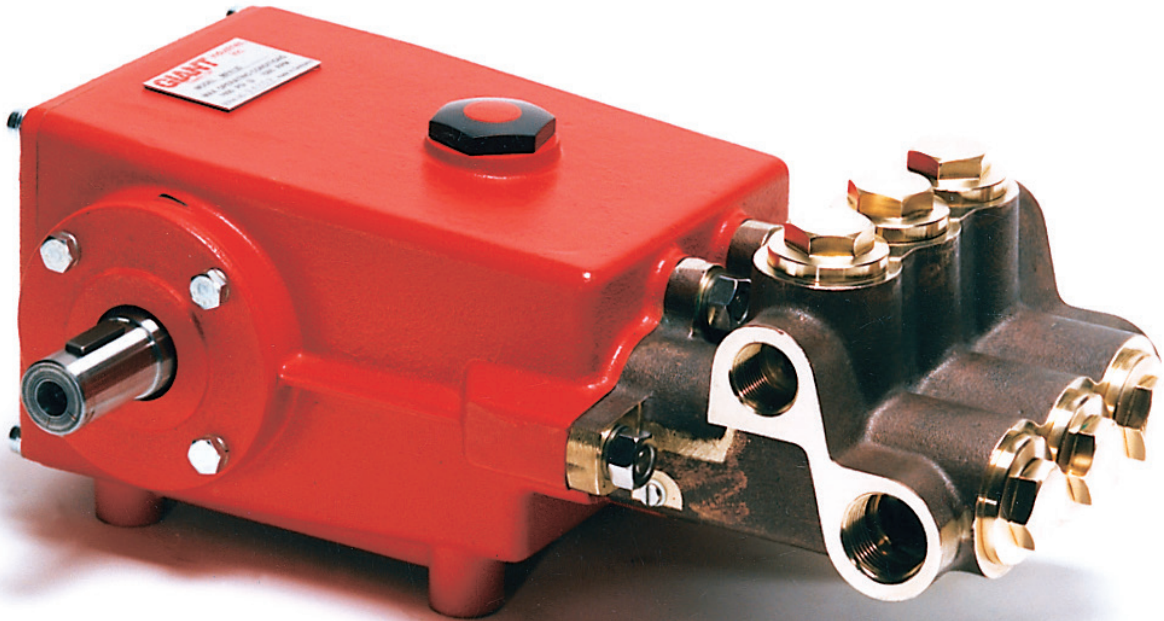


Models

Triplex Ceramic
Plunger Pump
Operating Instructions/
Repair and Service
Manual

MP4130-3100 & MP4135-3100



Updated 02/24

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MP4130-3100 and MP4135-3100 Specifications

Model	Max. Flow		Pressure*		Max. Speed	Max. Temp.*		Power Consumption		Plunger Diameter		Plunger Stroke	
	GPM	l/min	PSI	bar	RPM	°F	°C	BHP	kW	in	mm	in	mm
MP4130-3100	15.4	58.2	1600	110	1100	86	30	17.0	12.7	1.2	30	1.0	26
MP4135-3100	17.9	67.7	1600	110	1100	86	30	19.8	14.8	1.2	30	1.8	30

* 86 °F (30°C) is applicable only for seawater due to reasons of corrosion. For other media, 160 °F (70°C).

Performance

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

For information on intermittent operation and calculating of the performance data, see Giant Industries Plunger Pumps Assembly Instructions.

NPSHR / Inlet pressure

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

Maximum inlet pressure: 29 PSI (2 bar)

Level of noise emission

Emission sound pressure level: ≤ 84 dB(A)

Fields of application

The fields of application of these pump types correspond to the specifications in the Giant Industries Plunger Pumps Assembly Instructions.

Ambient conditions

Ambient temperature: 40°F < T_{Amb.} < 86°F

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

Oil filling

- Filling quantity: 33.8 fl. oz. (1.0 L)
- Quality: Industrial gear oil **ISO VG 220** (e.g. Aral Degol BG220) 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

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 bell housing or belt guard.

To cover the exposed crankshaft end with the shaft guard, position the guard directly over the groove in the middle of the bearing cover and gently tap it into the groove using a plastic hammer.

Direction of pump rotation

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

Suction line filter

Recommended mesh size: 150 µm.

Materials Used

Valve Casing: Aluminum-Bronze

Plunger: Solid Ceramic

Valves: High-Grade Stainless Steel

Seals: Nitrile with fabric reinforcing

O-Rings: Viton

Operation

For information see Giant Industries Plunger Pumps Assembly Instructions.

MP4130-3100 Horsepower Requirements					
RPM	GPM	500 PSI	1000 PSI	1300 PSI	1600 PSI
700	9.8	3.4	6.8	8.8	10.8
800	11.2	3.9	7.7	10.0	12.4
900	12.6	4.3	8.7	11.3	13.9
1000	14.0	4.8	9.7	12.6	15.4
1100	15.4	5.3	10.6	13.8	17.0

MP4135-3100 Horsepower Requirements					
RPM	GPM	500 PSI	1000 PSI	1300 PSI	1600 PSI
700	11.4	3.9	7.9	10.2	12.6
800	13.0	4.5	9.0	11.7	14.4
900	14.6	5.1	10.1	13.1	16.2
1000	16.3	5.6	11.2	14.6	18.0
1100	17.9	6.2	12.3	16.0	19.8

P430-3100 and P435-3100

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 2 (Ø18.5)

Suction and Discharge Valves

Suction Valve:

Remove plugs (42A). Take out spacer pipe (51) and suction valve adaptor (52).

Press the valve parts and if necessary also the spacer pipe (51) out of the suction valve adaptor using a soft tool.

Check and replace worn parts.

Check O-rings (42B, 44A, 53) and replace if necessary.

Discharge Valve:

Remove plugs (48).

Remove spring tension cap (47), valve spring (46) and valve plate (45) from the exposed discharge valve.

Take out valve seat (44) with a size 2 pull-out tool.

Check and replace worn parts.

Check O-rings (44A, 48A) and replace as necessary.

Tighten plugs (42A, 48) to the required torque.

Take care to reassemble in correct sequence.

Seals and Plunger

Remove plugs (42A). Take off nuts (50) and remove valve casing (43) by pulling out to the front, past the plungers. Take out spacer pipe (51), suction valve adaptor (52), tension spring (42) and seal unit (39, 40, 41).

Check plunger surfaces (29B).

Damaged surfaces cause hard wear on seals.

Lime deposits or similar on the plunger must be removed.



Plunger surface must not be damaged in the process.

Check O-rings (42B, 44A, 53) and replace if necessary.

Wet new seals and O-rings thinly with silicone grease or mineral oil and insert carefully. Pay attention to the installation position of the seals. Examine leakage return seal (40) after having removed snap ring (36) and replace if necessary. If the plunger pipe (29B) has to be replaced, remove tension screw (29C), taking it off together with the plunger pipe and the extension (29E) as well. Check and clean plunger (25) surfaces and put the new plunger pipe onto the centring sleeve (29A). Cover thread of tension screw (29C) with a thin coat of threadlocker and tighten carefully to the required torque.



Under no circumstances should threadlocker get between the plunger pipe (29B) and the centring sleeve (29A) nor the extension (29E) if the latter is present.

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.



Install tension spring (42), spring tension disc (54), suction valve adaptor (52) and spacer pipe (51).

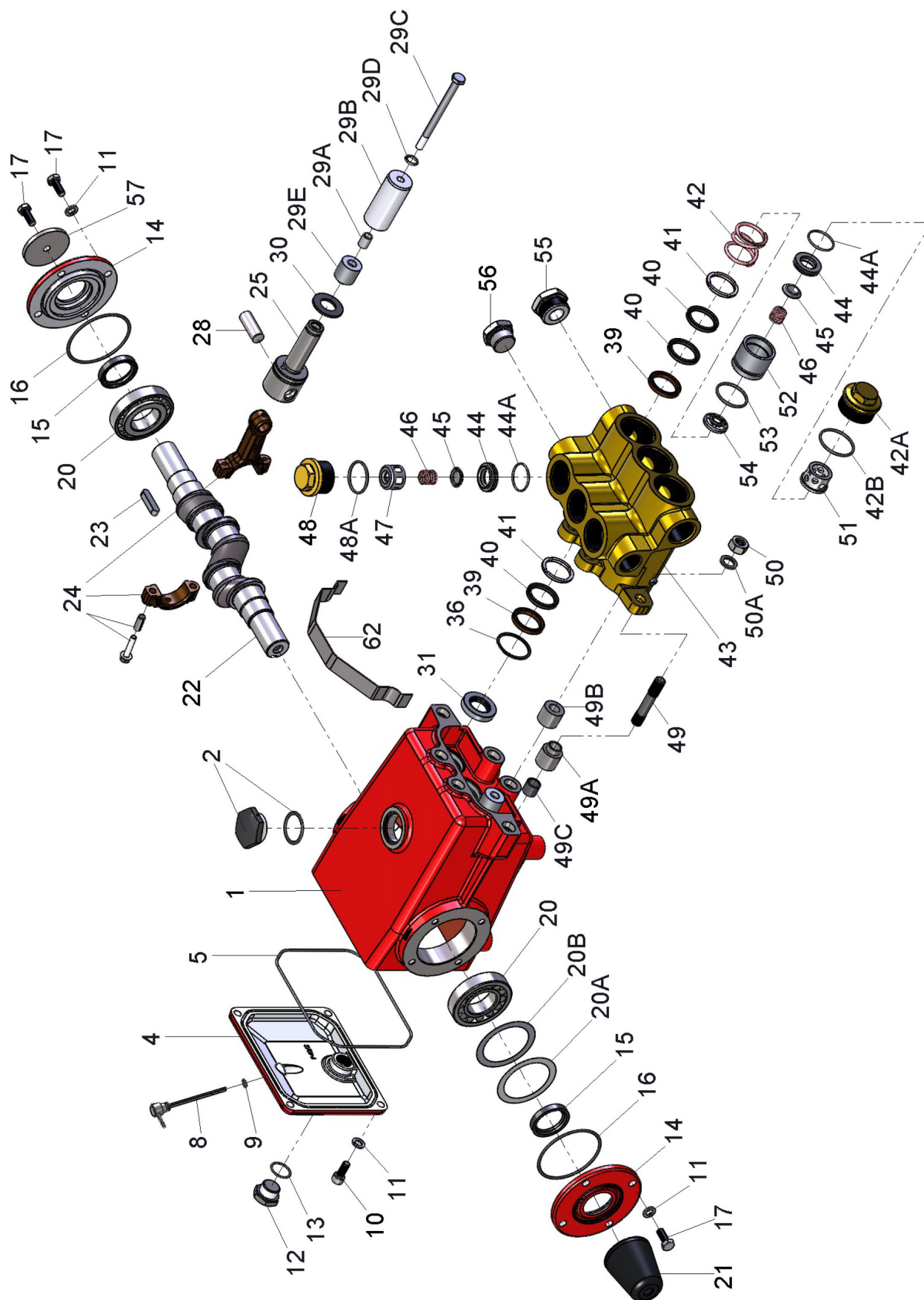
Then tighten plugs (42A) to the required torque.

Fix the valve casing (43) by tightening the nuts (50) evenly and crosswise to the required torque.

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

MP4130-3100 and MP4135-3100 Series Torque Specifications			
Position	Thread	Lubrication Info.	Torque Amount
10	M8		18 ft.-lbs. (25 Nm)
12	1/2" BSP		30 ft.-lbs. (40 Nm)
15		Loctite 403	
17	M8		18 ft.-lbs. (25 Nm)
24	M6		106 in.-lbs. (12 Nm)
29C	M8	Loctite 243	21 ft.-lbs. (28 Nm)
29D		Loctite 577	
31		Loctite 403	
42A	M42x1.5		107 ft.-lbs. (145 Nm)
44		Hylomar	
48	M36x1.5		107 ft.-lbs. (145 Nm)
49	M12	Loctite 638 crankcase side	
50	M12		59 ft.-lbs. (80 Nm)

MP4130-3100 & MP4135-3100 Exploded View



MP4130-3100 & MP4135-3100 Spare 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	06100	Crankcase	1	30	06136	Flinger	3
2	13000	Oil Filler Cap Assy	1	31	07260	Crankcase Oil Seal	3
4	07243	Cover, Crankcase	1	36	07267-0100	Snap Ring	3
5	07244	O-Ring, Crankcase Cover	1	39	07271	Pressure Ring	6
8	01008	Oil Dip Stick	1	40	07272	V-Sleeve	9
9	01009	O-Ring, Dip Stick	1	41	07273	Support Ring	6
10	01010	Hexagon Socket Screw	4	42	07353	Tension Spring	3
11	01011-0400	Spring Washer	12	42A	06103	Tension Plug	3
12	07109-0400	Oil Drain Plug, 1/2" BSP	1	42B	06736	O-Ring, Tension Plug	3
13	06015	O-Ring	1	43	04152	Valve Casing	1
14	07245	Bearing Cover	2	44	07280-0100	Valve Seat	6
15	07247	Seal, Crankshaft	2	44A	06003-0001	O-Ring, Valve Seat	6
16	07627	O-Ring	2	45	06791-0100	Valve Plate	6
17	07114-0100	Hex Screw, Bearing Cover	9	46	07283	Valve Spring	6
20	07248	Roller Bearing, Tapered	2	47	04153	Spring Tension Cap	3
20A	07249	Shim	1-3	48	06964	Plug	3
20B	06962	Fitting Disc	2	48A	06965	O-Ring, Plug	3
21	05375	Shaft Protector	1	49	06139	Stud Bolt	6
22	07251	Crankshaft (MP4130-3100)	1	49A	06140	Fitting Sleeve w/ Extension	2
22	04149	Crankshaft (MP4135-3100)	1	49B	06141	Extension	4
23	13331	Key	1	49C	07319	Hexagon Nut	2
24	07596	Connecting Rod Assembly	3	50	07158	Nut, Manifold Stud	6
24A	05349	Hex Screw with Washer	6	50A	07159	Spring Washer	6
25	07596	Crosshead Assembly	3	51	06110-0100	Spacer	3
28	07255	Crosshead Pin	3	52	06112-0100	Valve Housing	3
29A	07256	Centering Sleeve	3	53	06965	O-Ring	3
29B	07261	Plunger Pipe	3	54	04154	Spring Tension Disc	3
29C	04150	Tension Screw	3	55	06357-0100	Plug, 1" BSP	1
29D	07161-0100	Steel Ring	3	56	13150-0100	Plug, 3/4" BSP	1
29E	04151	Plunger Extension	3	57	13020	Disc for Crankshaft	1
				62	06142	Tin Lid	1

MP4130-3100 & MP4135-3100 SERIES REPAIR KITS

Valve Kit

Part # 09581

<u>Item #</u>	<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
44	07280-0100	Valve Seat	6
44A	06003-0001	O-Ring	6
45	06791-0100	Valve Plate	6
46	07283	Valve Spring	6
47	04153	Spring Tension Cap	3
48A	06965	O-Ring, Plug	3
53	06965	O-Ring	3
54	04154	Spring Tension Disc	3

Seal Kit

Part # 09580

<u>Item #</u>	<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
40	07272	V-Sleeve	9
42B	06736	O-Ring	3
53	06965	O-Ring	3

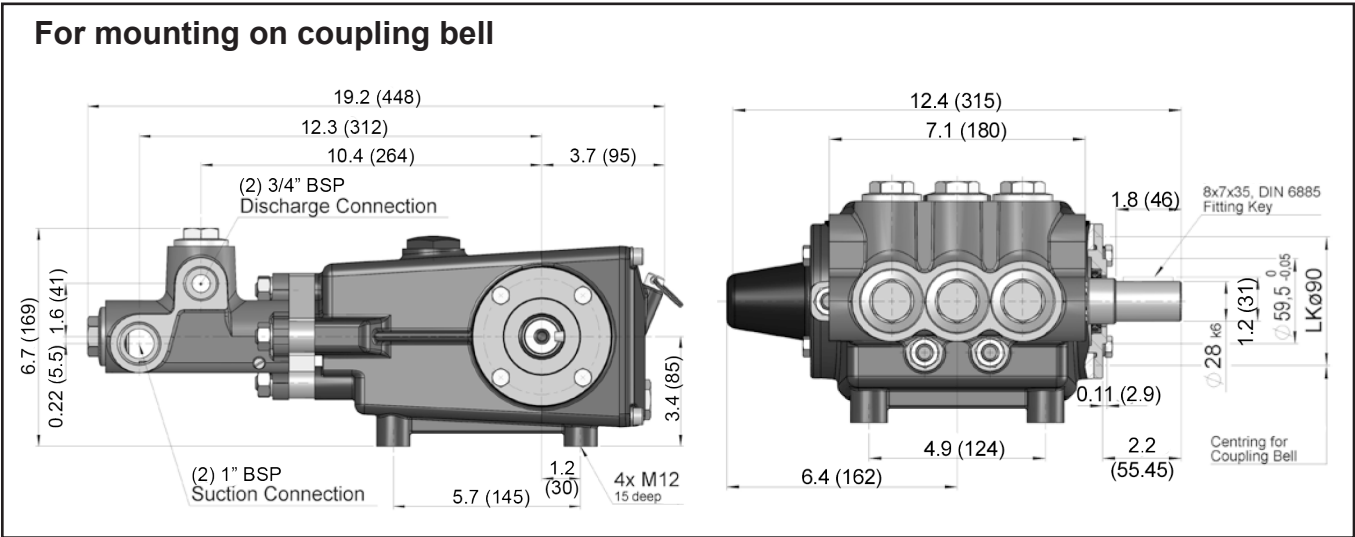
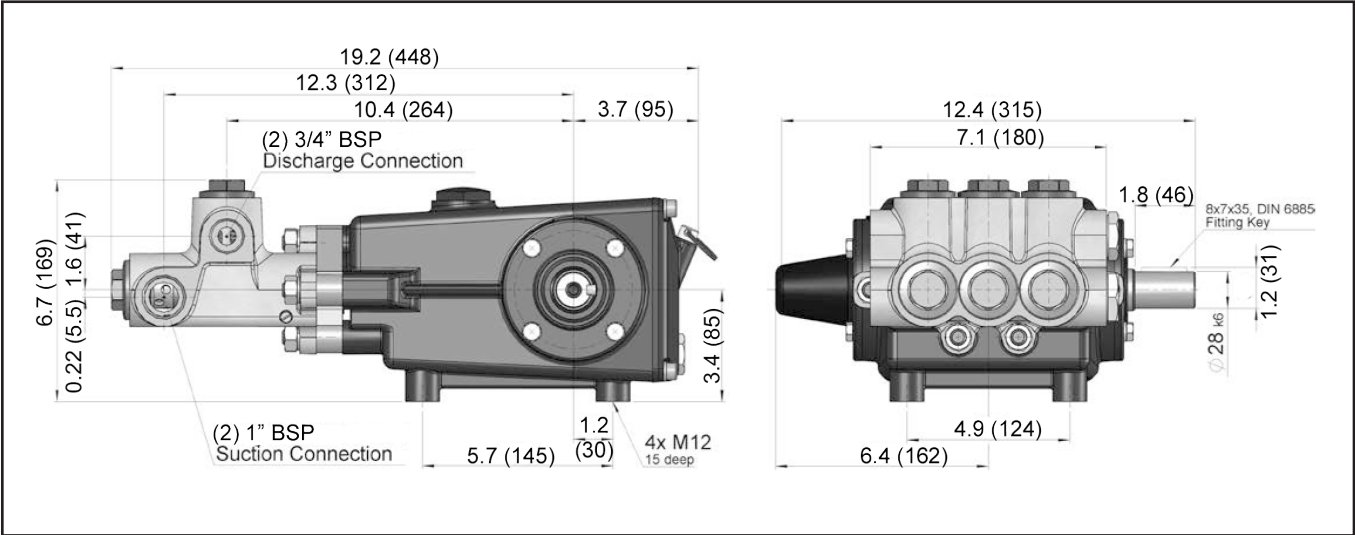
PUMP SYSTEM MALFUNCTION

<u>MALFUNCTION</u>	<u>CAUSE</u>	<u>REMEDY</u>
The Pressure and/or the Delivery Drops	Worn packing seals Broken valve spring Belt slippage Worn or Damaged nozzle Fouled discharge valve Fouled inlet strainer Worn or Damaged hose Worn or Plugged relief valve on pump Cavitation Unloader	Replace packing seals Replace spring Tighten or Replace belt Replace nozzle Clean valve assembly Clean strainer Repair/Replace hose Clean, Reset, and Replace worn parts Check suction lines on inlet of pump for restrictions Check for proper operation
Water in crankcase	High humidity Worn seals	Reduce oil change interval Replace seals
Noisy Operation	Worn bearings Cavitation	Replace bearings, Refill crankcase oil with recommended lubricant Check inlet lines for restrictions and/or proper sizing
Rough/Pulsating Operation with Pressure Drop	Worn packing Inlet restriction Accumulator pressure Unloader Cavitation	Replace packing Check system for stoppage, air leaks, correctly sized inlet plumbing to pump Recharge/Replace accumulator Check for proper operation Check inlet lines for restrictions and/or proper size
Pressure Drop at Gun	Restricted discharge plumbing	Re-size discharge plumbing to flow rate of pump
Excessive Leakage	Worn plungers Worn packing/seals Excessive vacuum Cracked plungers Inlet pressure too high	Replace plungers Adjust or Replace packing seals Reduce suction vacuum Replace plungers Reduce inlet pressure
High Crankcase Temperature	Wrong Grade of oil Improper amount of oil in crankcase	Giant oil is recommended Adjust oil level to proper amount

Preventative Maintenance Check-List & Recommended Spare Parts List

Check	Daily	Weekly	50hrs	Every 500 hrs	Every 1500 hrs	Every 3000 hrs
Oil Level/Quality	X					
Oil Leaks	X					
Water Leaks	X					
Belts, Pulley		X				
Plumbing		X				
Recommended Spare Parts						
Oil Change (1 Quart)			X	X		
Seal Kit (1 kit/pump) (See page 5 for kit list)					X	
Valve Spare Parts (1 kit/pump) (See page 5 for kit list)						X

MP4130-3100 & MP4135-3100 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



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