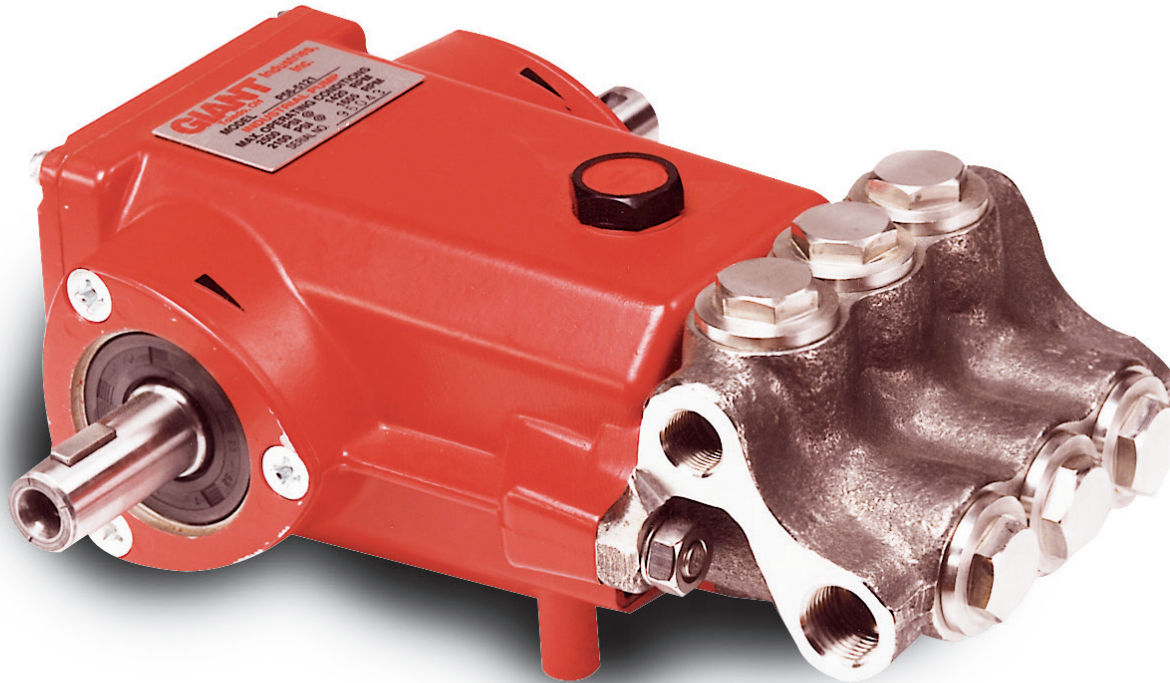


Models

Triplex Ceramic
Plunger Pump
Operating Instructions/
Repair and Service Manual

P55-5121 and P56-5121

316 Stainless Steel Pumps with Teflon Packing and Viton O-Rings



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Updated 02/24

Specifications

Model	Max. Flow		Pressure*		Max. Speed	Max. Temp.		Plunger Diameter		Power Consumption		NPSHR	
	GPM	l/min	PSI	bar	RPM	°F	°C	in	mm	BHP	kW	Ft.-Head	mWs
P55-5121	3.9	14.7	1500	100	1420	160	70	0.71	18	3.9	2.9	18.0	5.5
P56-5121	6.1	23.1	1900	130	1420	160	70	0.79	20	7.9	5.9	18.0	5.5

*The operating pressure should be reduced to 100 bar when teflon seals (31) are used as higher pressure on teflon leads to reduced service life.

Installation Instructions

Performance data shown is for intermittent operation.
For continuous operation, consult Giant.

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: ≤ 78 dB(A)

Ambient conditions

Ambient temperature: 41 °F < T_{Amb.} < 86 °F
Ambient temperature: 5°C < T_{Amb.} < 30°C

Oil

- Filling quantity: **12.5 fl. oz. (0.37 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 **1000 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 (17), the driven shaft side and coupling by a bell housing.

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.

P55-5121 Horsepower Requirements				
RPM	GPM	500 PSI	1000 PSI	1500 PSI
851	2.3	0.79	1.6	2.4
967	2.7	0.93	1.9	2.8
1084	3.0	1.0	2.1	3.1
1201	3.3	1.1	2.3	3.4
1317	3.6	1.2	2.5	3.7
1420	3.9	1.4	2.7	4.0

P56-5121 Horsepower Requirements					
RPM	GPM	500 PSI	1000 PSI	1500 PSI	1900 PSI
851	3.7	1.3	2.5	3.8	4.8
967	4.2	1.4	2.9	4.3	5.5
1084	4.7	1.6	3.2	4.8	6.1
1201	5.2	1.8	3.6	5.3	6.8
1317	5.7	2.0	3.9	5.9	7.4
1420	6.1	2.1	4.2	6.3	7.9

P55-5121 and P56-5121 PUMP REPAIR INSTRUCTIONS

Maintenance and Servicing

For the type of threadlocker used and the required tightening torques, observe the table below.

Special tools required

The following special tools are required for assembly:
 - Pull-out tool Size 1 Ø15 / Ø12 mm

Suction and Discharge Valves

Screw out plugs (41).
 Take out suction valve adaptor (39) together with suction valve.
 Push valve parts out of suction valve adaptor using a soft tool. Check and replace worn parts.
 Check O-rings (38,40,42) and replace as necessary.
 Tighten plugs (41) to the required torque.
 Take care to reassemble in correct sequence.

Seals and Plunger

Screw out plugs (41).
 Loosen nuts (46) and remove valve casing from plungers, pulling it out to the front.
 Take out suction valve adaptor (39), tension spring (33) and seal-unit (30, 31, 32).
 Check surfaces of plunger pipes as damaged surfaces cause fast wear to the seals.
 Check O-rings (40, 42) and V-sleeve (31) and replace as necessary.
 When replacing, 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.

If plunger pipe (24A) has to be replaced, loosen tension screw (24B) and remove it together with the plunger pipe. Check and clean plunger (22) surfaces and install new plunger pipe.
 Cover thread of tension screw (24B) with a fine film of thread-locker and tighten carefully to the required torque.



Under no circumstances should thread-locker get between the plunger pipe (24A) and the centering neck on the plunger (22).
 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 (33) and suction valve adaptor (39), then tighten plug (41) to the required torque.
 Fix valve casing by tightening nuts (46) evenly to the required torque.

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

Spare Parts

When **ordering spare parts**, please specify **pump type, pump number, year of manufacture, and spare parts code no.**
 This data can be found on the nameplate and in the spare parts list.

Materials Used

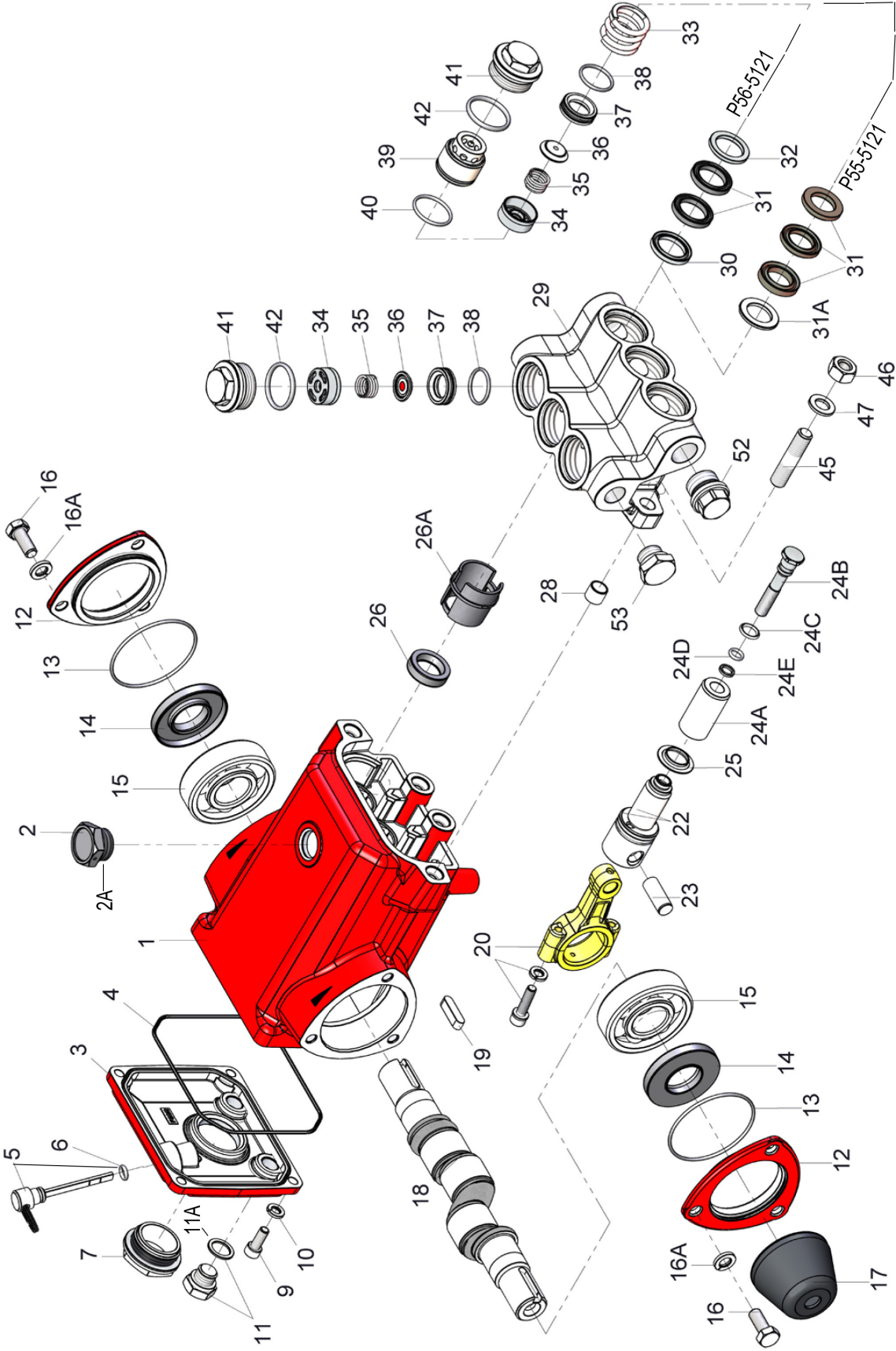
Valve Casing: AISI 316L
 Plunger: Solid ceramic
 Valves: High-Grade Stainless Steel
 Seals: Teflon
 O-Rings: Viton

Paint

The pump drive is painted in RAL 3001 as standard.

P55-5121 and P56-5121 Series Torque Specifications				
Position	Description	Thread	Lubrication Info.	Torque Amount
7	Oil Sight Glass	1" BSP	Loctite 5910	106 in.-lbs. (12 Nm)
9	Screw, Crankcase cover	M6		89 in.-lbs. (10 Nm)
11	Oil Drain Plug w/Gasket	1/4" BSP		22 ft.-lbs. (30 Nm)
16	Screw, Bearing Cover	M8		133 in.-lbs. (15 Nm)
20	Screw, Connecting Rod	M6		106 in.-lbs. (12 Nm)
24B	Tension Screw, Plunger	M8	Loctite 243	17 ft.-lbs. (22.5 Nm)
24C	Steel Ring		Loctite 577	
41	Plug, Manifold	M30x1.5		52 ft.-lbs. (70 Nm)
46	Stud Nuts	M10		35 ft.-lbs. (47.5 Nm)

Exploded View - P55-5121 and P56-5121 Pumps



P55-5121 and P56-5121 Pump 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	07180	Crankcase	1	24A	06066	Ceramic Plunger	
2	07181	Oil Filler Plug w/Gasket	1			(P56-5121)	3
2A	07182	Gasket, Oil Filler Cap	1	24B	08456-0100	Bolt	3
3	07183	Cover, Crankcase	1	24C	07204-0100	Steel Ring	3
4	07184	O-Ring, Crankcase Cover	1	24D	07023	O-Ring	3
5	07185	Oil Dip Stick Assembly	1	24E	07203	Support Ring	3
6	01009	O-Ring, Dip Stick	1	25	07205	Flinger	3
7	07186	Oil Sight Glass w/Gasket	1	26	07206	Crankcase Oil Seal	3
9	07188	Screw, Crankcase Cover	4	26A	13346	Oil Seal Retainer	3
10	07189	Spring Washer	4	28	07207	Shim, Manifold Stud	2
11	07190-0100	Oil Drain Plug w/Gasket	2	29	07369-5000	Manifold Head	1
11A	07191	Gasket, Oil Drain Plug	2	30	07221-0100	Pressure Ring (P56-5121)	3
12	07192	Bearing Cover	2	31	03666	Seal Pack, Teflon	
13	07193	O-Ring, Bearing Cover	2			(P55-5121)	3
14	01166	Radial Shaft Seal	2	31	06064-0020	V-Sleeve, Teflon	6
15	01086	Ball Bearing	2	31A	03667	Support Disc (P55-5121)	3
16	07196	Screw, Bearing Cover	6	32	07209-0100	Support Ring (P56-5121)	3
16A	01011-0400	Spring Washer	6	33	07210-0100	Pressure Spring	3
17	05023	Shaft Protector	1	34	07325-0100	Retainer, Spring	6
18	12128	Crankshaft, P55-5121	1	35	06017-0100	Valve Spring	6
18	03665	Crankshaft, P56-5121	1	36	06016-0100	Valve Plate	6
19	01024	Key	1	37	06014-0100	Valve Seat	6
20	07199	Connecting Rod		38	06015-0001	O-Ring, Valve Seat	6
		w/ Screws	3	39	07211-0100	Adapter, Inlet Valve	3
21	01027	Connecting Rod Screw		40	07212-0001	O-Ring, Adapter	3
		w/ Washer	6	41	07213-0100	Plug, Manifold	6
22	07201	Plunger Base		42	07214-0001	O-Ring, Manifold Plug	6
		w/ S.S. Crosshead	3	45	07215	Stud, Manifold	4
23	01031	Crosshead Pin	3	46	08040-0100	Hex Nut, Manifold Stud	4
24A	07021	Ceramic Plunger		47	08041	Spring Washer, Stud	4
		(P55-5121)	3	52	12250	Inlet Plug, 1/2" BSP	1
				53	12138	Discharge Plug, 3/8" BSP	1

P55-5121 and P56-5121 Pump Repair Kits

Plunger Packing Kits

P55-5121 - #09572-0021

<u>Item</u>	<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
31	03666	Seal Pack, Teflon	3
31A	03667	Support Disc	3
38	06015-0001	O-Ring, Viton	3
40	07212-0001	O-Ring, Viton	3
42	07214-0001	O-Ring, Viton	3

P56-5121 - #09573-0021

<u>Item</u>	<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
31	06064-0020	V-Sleeve, Teflon	6
38	06015-0001	O-Ring, Viton	3
40	07212-0001	O-Ring, Viton	3
42	07214-0001	O-Ring, Viton	3

Valve Assembly Kit

#09041-0100

<u>Item</u>	<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
34	07325-0100	Retainer, Spring	6
35	06017-0100	Valve Spring	6
36	06016-0100	Valve Plate	6
37	06014-0100	Valve Seat	6
38	06015-0001	O-Ring, Valve Seat	6
40	07212-0001	O-Ring, Adapter	3
42	07214-0001	O-Ring, Manifold Plug	6

Oil Seal Kit

#09202

<u>Item</u>	<u>Part #</u>	<u>Description</u>	<u>Qty.</u>
26	07206	Oil Seal	3

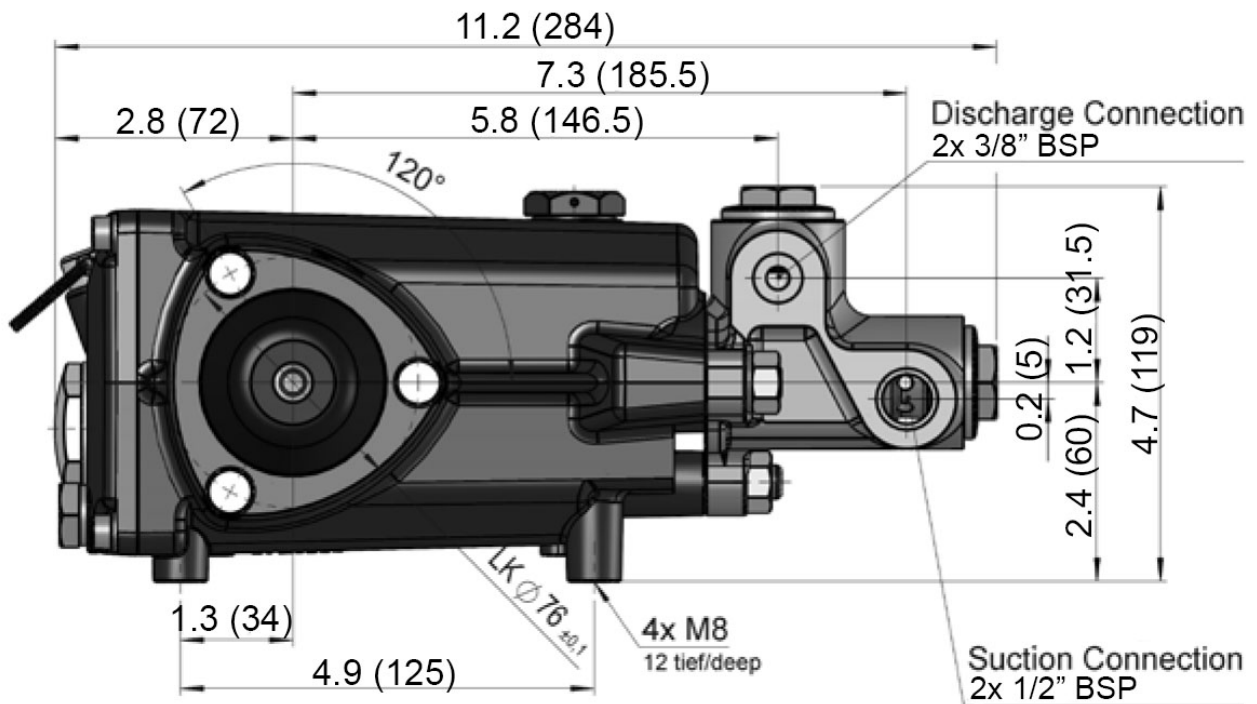
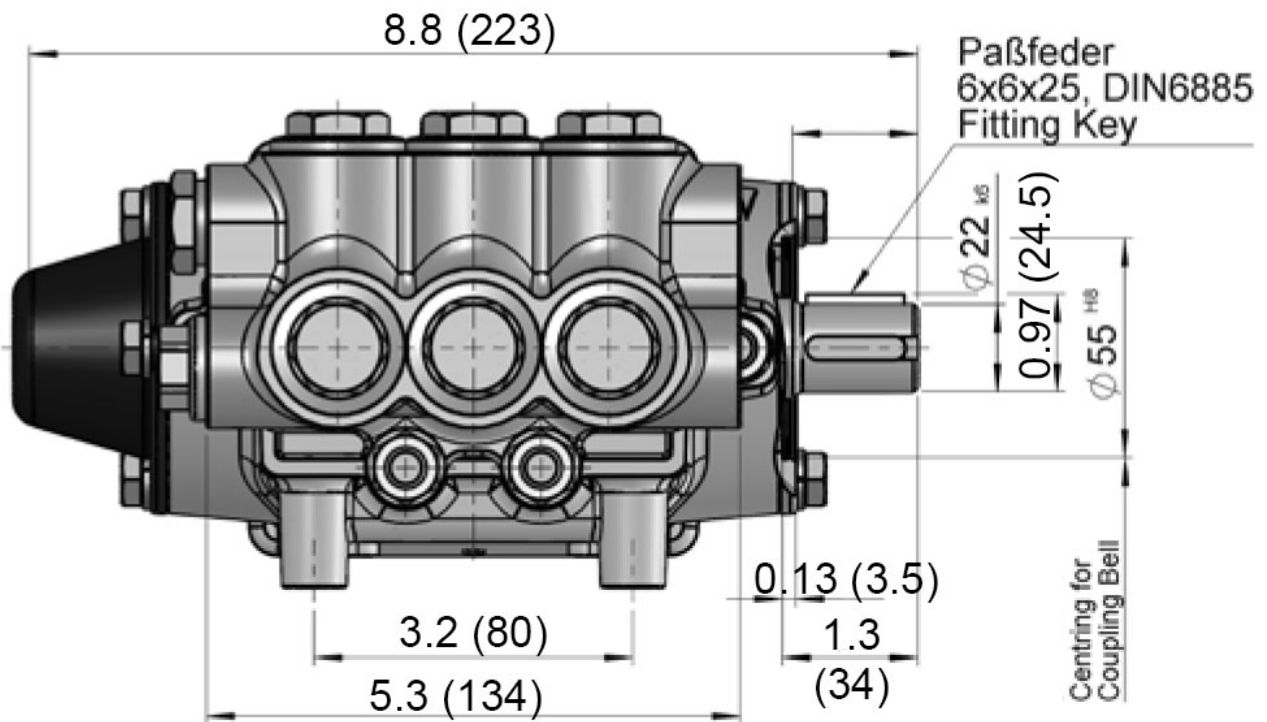
PUMP SYSTEM MALFUNCTION

<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 (p/n 1154)			X	X		
Plunger Packing Kits (1 kit/pump-See page 5 for kit list)					X	
Valve Assembly Kit (1 kit/pump-See page 5 for kit list)					X	
Oil Seal Kit (1 kit/pump) (See page 5 for kit list)						X

P55-5121 & P56-5121 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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