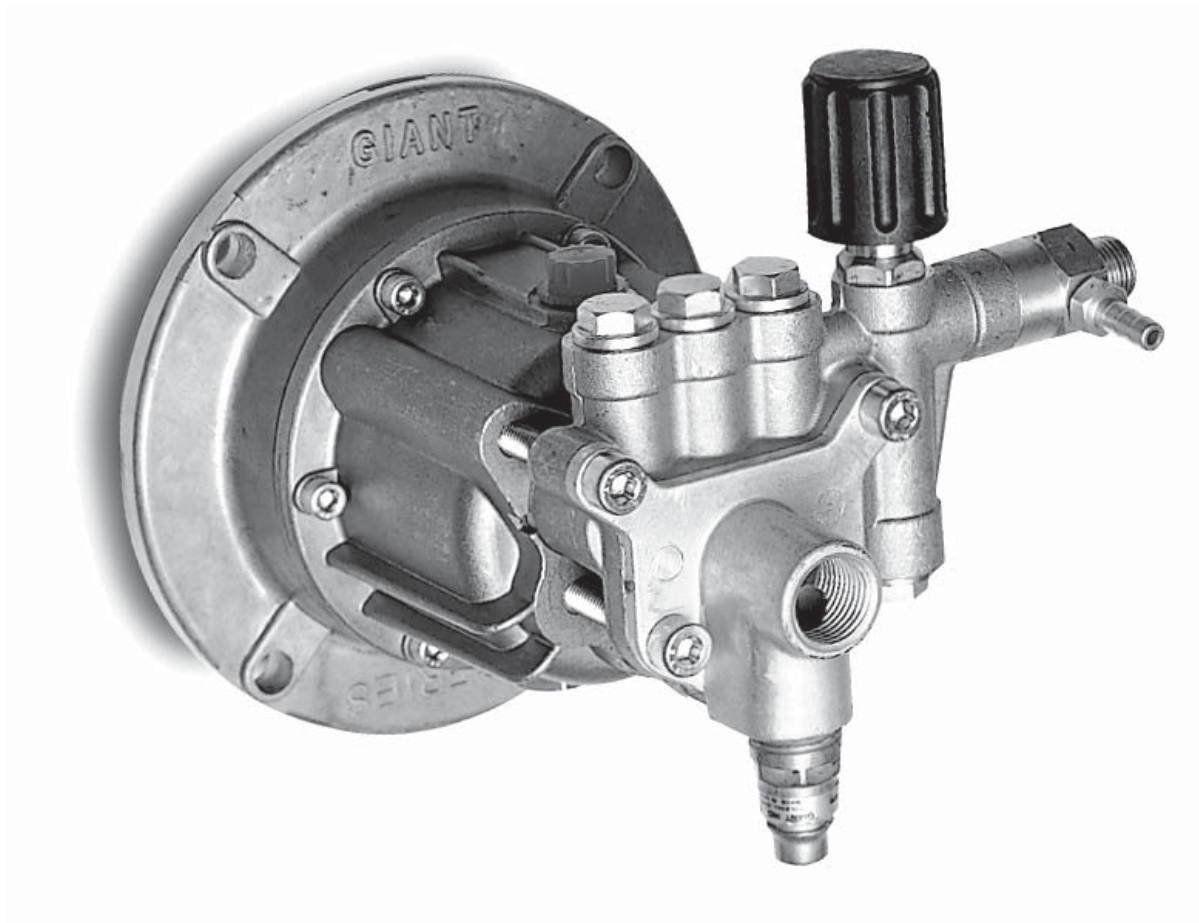


Model GX Series

Triplex
Plunger Pump
Operating Instructions/
Repair Instructions
Manual

Consumer Pump

Horizontal/Vertical Pump
with built-in Thermal
Relief Valve and Siphon
Injector



GIANT

MADE IN THE USA



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Updated 3/04

INSTALLATION INSTRUCTIONS

Installation of the Giant Industries, Inc., pump is not a complicated procedure, but there are some basic steps common to all pumps. The following information is to be considered as a general outline for installation. If you have unique requirements, please contact Giant Industries, Inc. or your local distributor for assistance.

1. The pump should be installed flat on a base to a maximum of a 15 degree angle of inclination to ensure optimum lubrication.
2. The inlet to the pump should be sized for the flow rate of the pump with no unnecessary restrictions that can cause cavitation. Teflon tape should be used to seal all joints. Maximum inlet fluid temperature is 80°F.
3. The discharge plumbing from the pump should be properly sized to the flow rate to prevent line pressure loss to the work area. It is essential to provide a safety bypass valve between the pump and the work area to protect the pump from pressure spikes in the event of a blockage or the use of a shut-off gun.

4. Use of a dampener is necessary to minimize pulsation at drive elements, plumbing, connections, and other system areas. The use of a dampener with Giant Industries, Inc. pumps is optional, although recommended by Giant Industries, Inc. to further reduce system pulsation. Dampeners can also reduce the severity of pressure spikes that occur in systems using a shut-off gun. A dampener must be positioned downstream from the unloader.

6. Before beginning operation of your pumping system, remember: Check that the crankcase and seal areas have been properly lubricated per recommended schedules. Do not run the pump dry for extended periods of time. Cavitation will result in severe damage. Always remember to check that all plumbing valves are open and that pumped media can flow freely to the inlet of the pump.

Finally, remember that high pressure operation in a pump system has many advantages. But, if it is used carelessly and without regard to its potential hazard, it can cause serious injury.

IMPORTANT OPERATING CONDITIONS

Failure to comply with any of these conditions invalidates the warranty.

1. Prior to initial operation, Check for proper oil level. **DO NOT OVERFILL.**

Use Giant Oil.

Crankcase oil should be changed after the first 50 hours of operation, then at regular intervals of 500 hours or less depending on operating conditions.

2. Pump operation must not exceed rated pressure, volume, or RPM. A pressure relief

device must be installed in the discharge of the system.

3. Acids, alkalines, or abrasive fluids cannot be pumped unless approval in writing is obtained before operation from Giant Industries, Inc.

4. Run the pump dry approximately 10 seconds to drain the water before exposure to freezing temperatures.

NOTE: Contact Giant Industries for Service School Information. Phone: (419)-531-4600

Specifications Model GX Series

| | |
|-------------------------------------|--|
| Volume | 2.5 GPM |
| Maximum Discharge Pressure | 2500 PSI (172 bar) |
| Maximum Inlet Pressure | Up to 90 PSIG ¹ |
| RPM | 3450 |
| Plunger Diameter | 16mm |
| Stroke | 5.1mm (7.1 ° angle) |
| Crankcase Oil Capacity | 4.7 fl. oz. (138 ml) |
| | (4.1 fl.oz. horizontal)(121 ml horizontal) |
| Temperature of Pumped Fluids | Up to 80 °F (27 °C) |
| Inlet Port | 1/2" NPT |
| Discharge Ports | 3/8" NPT |
| Shaft Rotation | Either Direction ² |
| Weight | 9 lbs. |
| Width | 8.325" |
| Height | 6.45" |
| Swash Plate Bore (Horizontal) | 3/4" x 3/16" Keyway |
| Swash Plate Bore (Vertical) | 7/8" x 3/16" Keyway |
| Valve Type | Polyamide Plastic |

¹ A 25 PSIG minimum inlet pressure is **required**.

² The pump itself can be driven in either direction of rotation; however, the cooling fan on TEFC motors must always be positioned so that the cooling air is drawn from the non-drive end of the motor towards the pump.

| GX2025 HORSEPOWER REQUIREMENTS | | | | | |
|---------------------------------------|-----|----------|----------|----------|----------|
| RPM | GPM | 1000 PSI | 1500 PSI | 1700 PSI | 2500 PSI |
| 3450 | 2.0 | 1.4 | 2.1 | 2.7 | 3.4 |

| GX2325 HORSEPOWER REQUIREMENTS | | | | | |
|---------------------------------------|-----|----------|----------|----------|----------|
| RPM | GPM | 1000 PSI | 1500 PSI | 1700 PSI | 2500 PSI |
| 3450 | 2.3 | 1.6 | 2.4 | 3.2 | 3.9 |

| GX2525 HORSEPOWER REQUIREMENTS | | | | | |
|---------------------------------------|-----|----------|----------|----------|----------|
| RPM | GPM | 1000 PSI | 1500 PSI | 2000 PSI | 2500 PSI |
| 3450 | 2.5 | 1.7 | 2.6 | 3.4 | 4.3 |

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:

$$HP = (GPM \times PSI) / 1460$$

For example, a GXV2325-111 is a GX pump that produces 2.3 GPM @ 2500 PSI, has a injector with a 1.8mm Oriface, 1/2" thermal relief valve & 3/4" swash plate bore.

GX SERIES PARTS LIST

| ITEM# | Part# | Description | QTY. | ITEM# | Part# | Description | QTY. |
|-------|------------|--|------|-----------------|------------|---------------------------------------|------|
| 1 | 07805 | Radial Shaft Seal | 1 | 29 | 06227 | 8mm Ball | 1 |
| 2 | 06310 | Adapting Flange | 1 | 30 | 07917A | Washer | 1 |
| 3 | 06294 | O-Ring (86 x 2.5mm) | 1 | 31 | 07918A | Adjusting Spring | 1 |
| 4 | 06300 | Rear Bearing | 1 | 32 | 07919 | Pressure Spring | 1 |
| 5 | 06326 | Wobble plate 7.1 degree horizontal, 3/4" | 1 | 33*** | 06524 | Adjusting Screw | 1 |
| 5 | 06331 | Wobble plate 7.1 degree vertical, 7/8" | 1 | 34*** | 06324 | Adjusting Screw Plug | 1 |
| 6 | 06301 | Front Bearing | 1 | 35 | 06286 | Manifold | 1 |
| 7 | 06289 | Spring Disk | 3 | 36 | 06295 | Discharge Valve Cone | 3 |
| 8 | 06287 | 16mm Plunger | 3 | 38 | 07910A | Triangle O-Ring | 1 |
| 9 | 06288 | Plunger Spring | 3 | 39 | 06298 | Suction Flange | 1 |
| 10 | 06299 | Socket Bolt (1/4-20x3/4 10.9 GRD) | 6 | 40 | 06302 | Stud Bolt (M8x1.25x50mm GRD 8.8 SHCS) | 4 |
| 11 | 08192 | Gasket | 1 | 41**** | 12326 | Kick Back O-Ring | 1 |
| 12 | 06273 | Oil Drain Plug | 1 | 42**** | 12325 | Kick Back Valve Cone | 1 |
| 13 | 06282 | Crankcase | 1 | 43**** | 12328 | Kick Back Spring | 1 |
| 14 | 08083 | Vent Cap (Horizontal Only) | 1 | 44 ^A | 06727 | Oriface, 1.8mm | 1 |
| 15 | 06316 | 16mm Oil Seal (TTO) | 3 | 44 ^A | 06339 | Oriface, 2.1mm | 1 |
| 17 | 06292 | Spacer | 3 | 44 ^A | 06340 | Oriface, 2.3mm | 1 |
| 18 | 07374 | Valve Spring | 6 | 45 | 06312 | O-Ring in Nozzle | 1 |
| 19 | 06267 | Guided P-Valve | 3 | 46 | 07913 | O-Ring | 1 |
| 20 | 06290 | Pressure Ring | 3 | 47**** | 06303 | Injector Retainer | 1 |
| 21 | 06315 | 16mm V-Sleeve | 3 | 48 | 23009 | Spring | 1 |
| 22 | 06296 | Discharge Plug | 4 | 49 | 23010-0100 | Ball | 1 |
| 23*** | 12007 | O-Ring | 5 | 50 | 12516-0001 | O-Ring | 1 |
| 24 | 06304 | Piston | 1 | 51 | 12517 | Hose Barb | 1 |
| 25 | 12031-0002 | Back-up ring | 2 | 52 | 07939 | Nut | 1 |
| 26*** | 07937 | O-Ring | 2 | 53 | 07044 | Locknut | 1 |
| 27 | 08638 | O- Ring of Push Seat | 1 | 54 | 07045 | Handwheel | 1 |
| 28 | 06256 | Push in Seat | 1 | 55 | 07068 | Locking Nut W/Nylon Insert | 1 |
| | | | | 56 | 07046 | Cover | 1 |
| | | | | 75 | 23422-N | Thermal Relief Valve | 1 |

^A = See pump numbering system on page 7.

- * **When ordering 06310, please order 17026 which includes 06300, 07805, and 06294**
- ** **When ordering 06331, please order 17032 which includes 06331, 06301, and shaft ring.**
- *** **Optional Non-Handle Model** - (Item 23) o-ring p/n 12007, (Item 26) o-ring p/n 07937, (item 33) adjusting screw p/n 06323, (item 34) adjusting screw plug p/n 06324
- **** **Optional Non-Injector Model** - (item 41) kick back valve o-ring p/n 12326, (item 42) kick back valve cone p/n 12325 (item 43) kick back spring p/n 12328, (item 47) kick back valve retainer p/n 12340
- + **When ordering 06326, please order 17020 which includes 06326, 06301, and shaft ring.**

MOUNTING ACCESSORIES (Sold Separately)

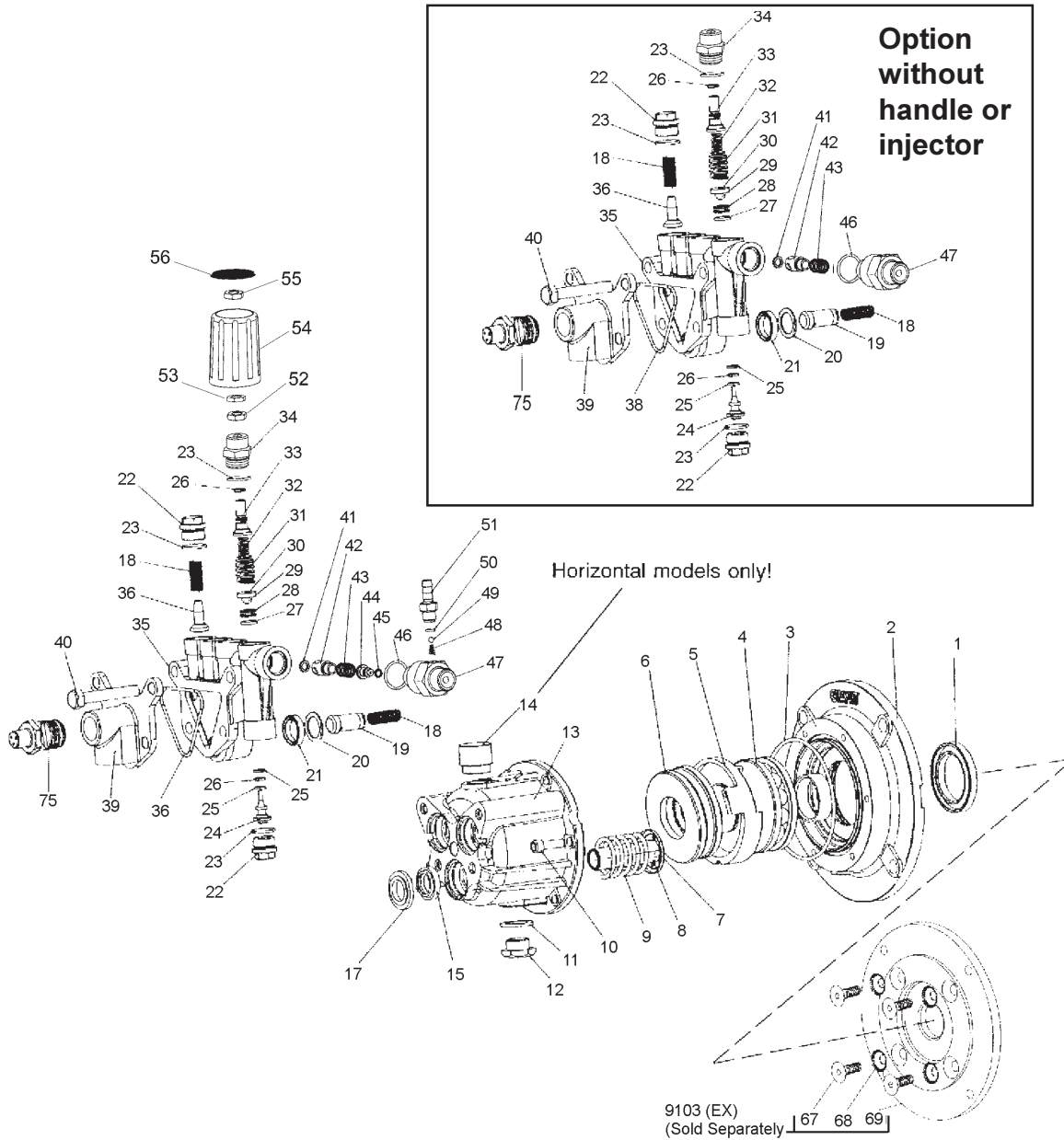
| Item# | Description |
|------------------------|---------------------|
| 09103(EX) ¹ | Gasoline Flange Kit |
| 07435 | Bolts for 09103 |

¹ "EX" Suffix added for engines requiring an external pilot

GX SERIES TORQUE SPECIFICATIONS

| <u>Position</u> | <u>Item#</u> | <u>Description</u> | <u>Torque Amount (ft.-lbs)</u> |
|-----------------|--------------|--------------------|--------------------------------|
| 10 | 06299 | Socket Bolt | 100 in.-lbs. |
| 40 | 06302 | Stud Bolt | 150 in.-lbs. |

GX Series EXPLODED VIEW



Plunger Packing Kit # 09465

| Item | Part # | Description | Qty. |
|------|--------|--------------|------|
| 20 | 06290 | Support Ring | 3 |
| 21 | 06315 | V-Sleeve | 3 |

Oil Seal Kit # 09468

| Item | Part # | Description | Qty. |
|------|--------|------------------|------|
| 15 | 06316 | Plunger Oil Seal | 3 |

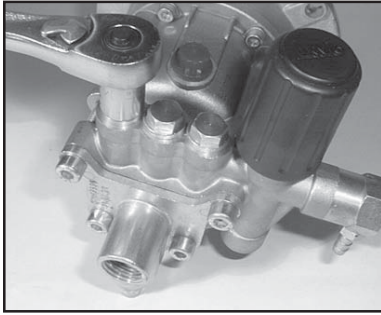
Valve Assembly Kit # 09466

| Item | Part # | Description | Qty. |
|------|--------|----------------------|------|
| 18 | 07374 | Valve Spring | 6 |
| 19 | 06267 | Guided P-Valve | 3 |
| 36 | 06295 | Discharge Valve Cone | 3 |

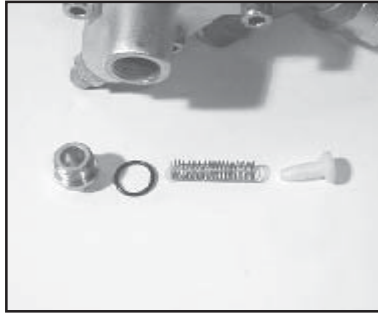
Unloader Repair Kit # 09467

| Item | Part # | Description | Qty. |
|------|------------|--------------|------|
| 23 | 12007 | O-Ring | 2 |
| 25 | 12031-0002 | Back-up Ring | 2 |
| 26 | 07937 | O-Ring | 2 |
| 27 | 08638 | O-Ring | 1 |
| 28 | 06256 | Seat | 1 |
| 29 | 06227 | 8mm Ball | 1 |
| 41 | 12326 | O-Ring | 1 |

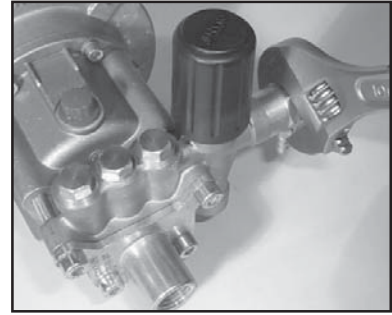
REPAIR INSTRUCTION - GX SERIES



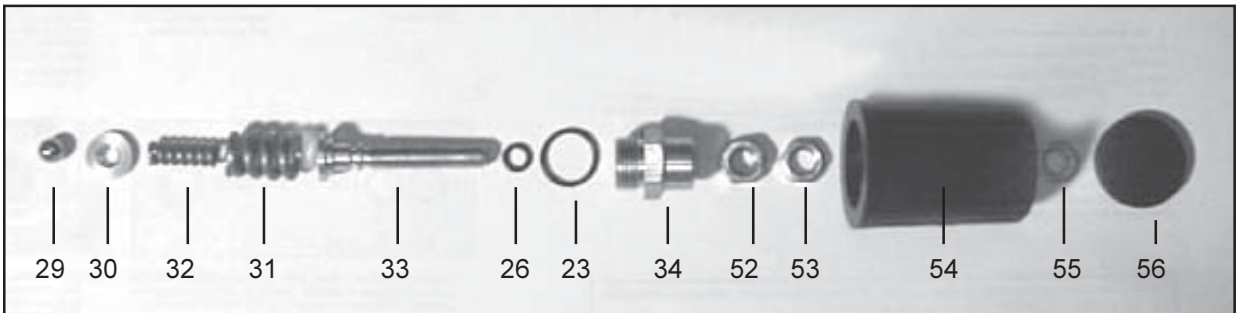
1. With a 14mm socket wrench, remove the three discharge valve plugs (22). Inspect the valve plug o-rings (23) for wear, and replace as necessary.



2. Remove the valve spring (18) and valve cone (36) from the manifold (35). Inspect the parts for wear and replace as necessary.

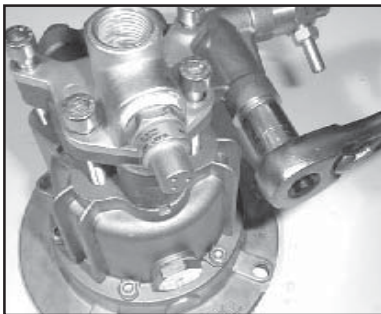


3. With a crescent wrench, remove the kickback valve spring retainer (47). Inspect the o-ring (46) for wear and replace as necessary. Remove the kickback valve spring (43), kickback valve cone (42), and the o-ring (41) from the manifold (35). Inspect the parts for wear and replace as necessary.

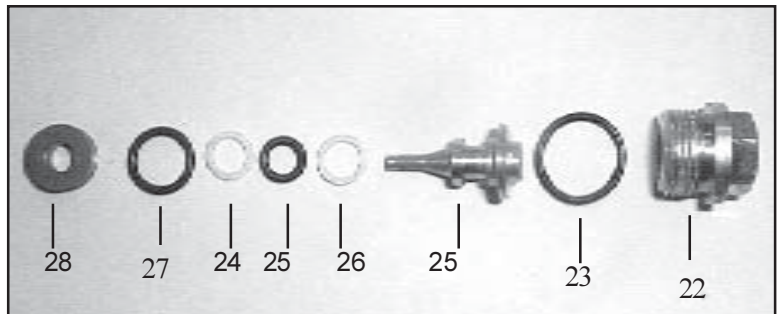


4. With a 19mm wrench, remove the adjusting screw plug (34). Unscrew the adjusting screw (33) from the adjusting screw plug (34). Inspect the o-rings (23 & 26) for wear and replace as necessary.
5. Remove the adjusting spring (31), pressure spring (32), washer (30) and by pass valve ball (29) from the manifold (35). Inspect the parts for wear and replace as necessary.

Optional pump without handle - exclude items (52, 53, 54, 55, 56).

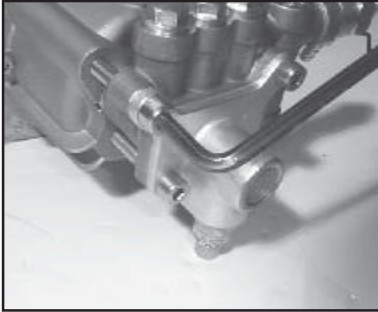


6. With a 14mm socket wrench, remove the guide plug (22) and o-ring (23).

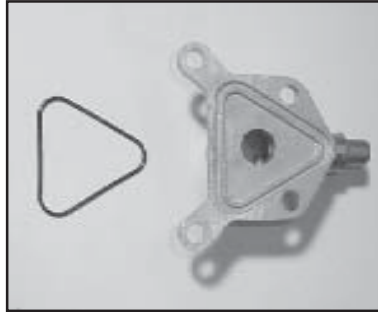


7. Remove the piston (24), o-ring (26), and backup rings (25). Remove the bypass valve seat (28). Inspect the parts for wear and replace as necessary. **IMPORTANT! Make sure that the shoulder on bypass valve seat (28) is facing the discharge plug (22).**

GX2525 EXPLODED VIEW

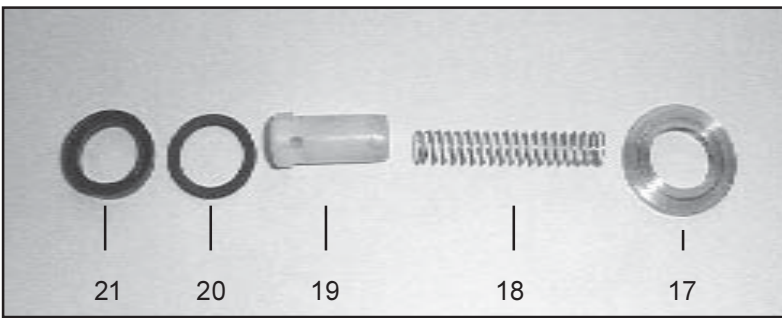


8. Next, remove the four manifold bolts (40) with a 6mm allen wrench.

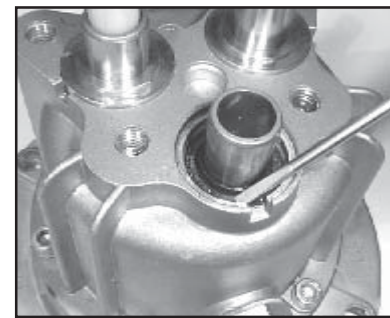


9. Remove the suction flange (39) and flange o-ring (38). Inspect the o-ring for wear and replace as necessary.

10. Tap the back of the manifold (35) with a rubber mallet to dislodge, and slide off the plungers. (8). Take note of the position of the discharge port so as to place the manifold in the same position during reassembly.



11. Remove the guided p-valve, (19), valve springs (18), v-sleeves (21) and pressure rings (20). Inspect for wear and replace as necessary. Remove the spacer ring (17) from the plungers (8).



12. If the crankcase oil seals (15) are to be replaced, they can be removed by prying loose with a screwdriver. Take care not to make contact with the plunger (8) and pry out the oil seals from their housing. Seals should not be re-installed until after step #16.

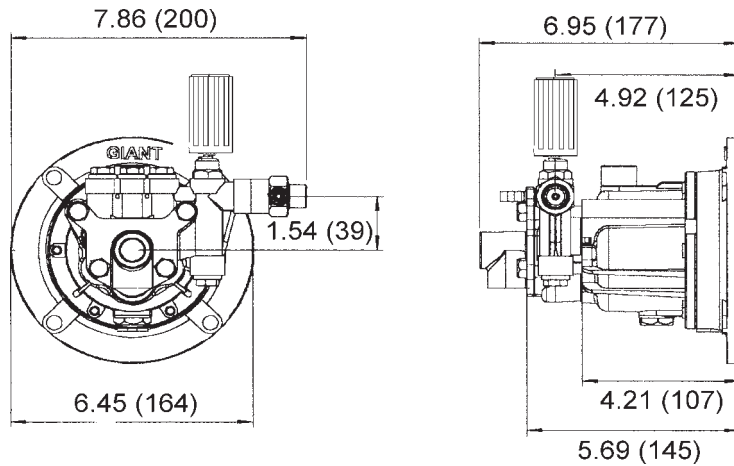
13. Reassemble in reverse order. Fill the crankcase with the proper amount of oil (see specifications page 3) The pump is now ready for operation.

GX and HR Pump Part Numbering System

| GX or HR Series | Flow | Pressure (in 100 psi increments) | | Injector Size | Thermal Relief Valve | Wobble Plate Shaft Bore |
|-----------------|--------|----------------------------------|---|---------------|----------------------|-------------------------|
| Vertical | 20=GPM | 25=2500 PSI | | 1=2.1 mm | 1=1/2" | 2=7/8" |
| Horizontal | 23=GPM | | | 2=1.8mm | | 1=3/4" |
| | 25=GPM | | | 3=2.3mm | | 3=1" |
| | | | | | | 4=5/8" |
| GX or HR | 2.5 | 25 | - | 1 | 1 | 1 |

For example, a GXV2525-112 is a GX pump that produces 2.5 GPM @ 2500 PSI, has a injector with a 2.1mm Oriface, 1/2" thermal relief valve and 7/8" wobble plate bore.

GX Series 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. For portable pressure washers and self-service car wash applications, the discharge manifolds are guaranteed for the life of the pump. Our other pump parts, used in portable pressure washers and in car wash applications, are warranted for five years from the date of shipment for all pumps used in NON-SALINE, clean water applications.
2. One (1) year from the date of shipment for all other Giant industrial and consumer pumps.
3. Six (6) months from the date of shipment for all rebuilt pumps.
4. 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.



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