

# Models

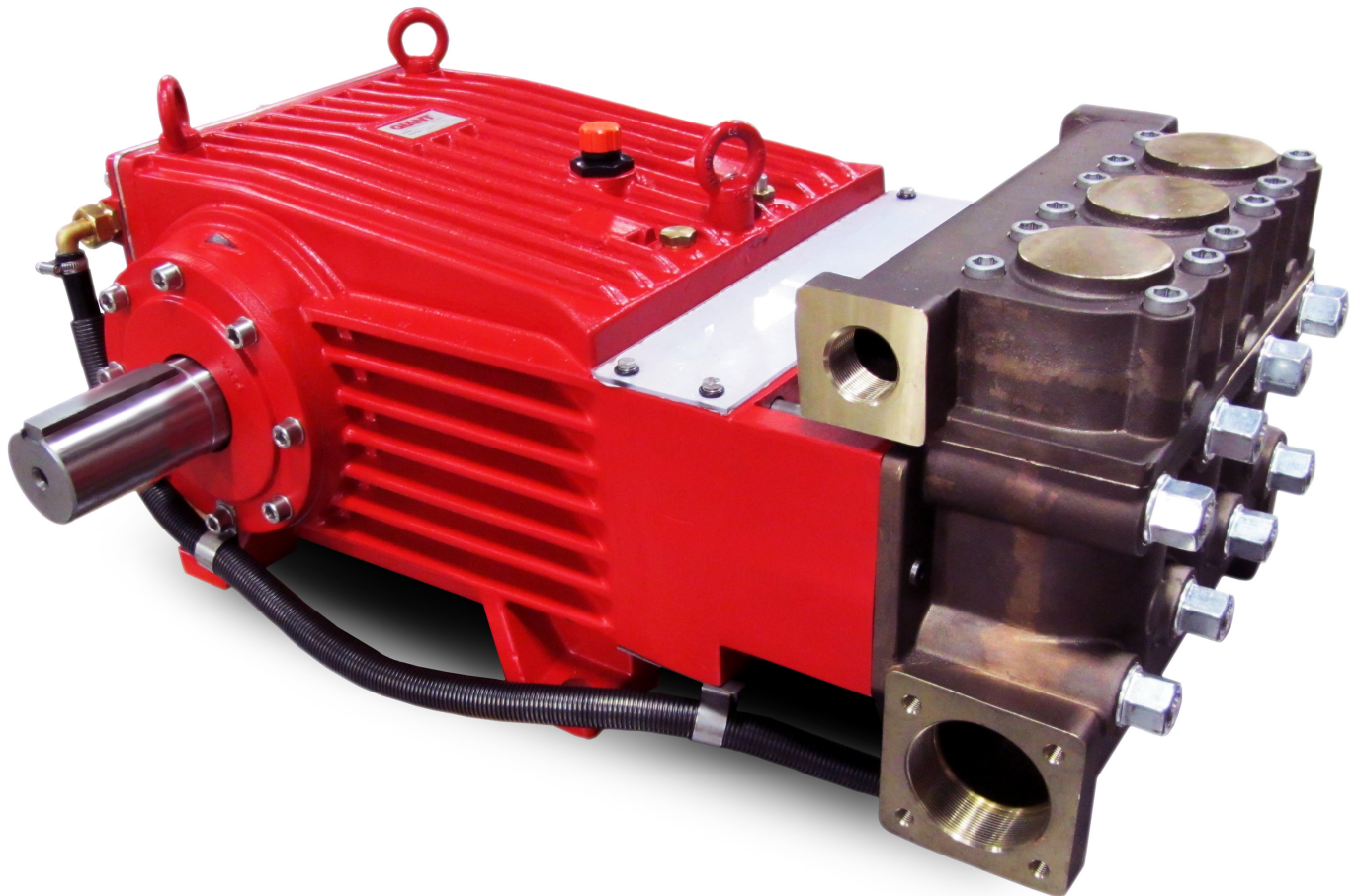
## GP8055-Brine

## GP8060-Brine

## GP8065-Brine

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Triplex Ceramic  
Plunger Pump  
Models Manual



Updated 02/23

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# INSTALLATION INSTRUCTIONS

The stated figures are for maximum pressure and maximum speed (RPM) and apply for interval operation with cold water.

Required NPSH refers to water (specific weight 1kg/dm<sup>3</sup>, viscosity 1°E) at maximum permissible pump revolutions.

Fluid medium: Clean water filter with 50µm.

## Operation and Maintenance

Check oil level prior to starting and ensure trouble-free water supply.

**Important!** If there is a **danger of frost**, the water in the pump and in the pump fittings (particularly the **unloader** valve) must be emptied. The second discharge port can also be used and the pump run “dry” for 1-2 minutes for this purpose.

Oil: Use only 3.3 Gallons (12.5 liters) of ISO VG 220 GL4 (e.g. Aral Degol BG220) or SAE 90 GL4 gear oil (Giant p/n 01154). Initial change after 50 operating hours and then every 1000 operating hours after one year at the latest.

**Important!** When operating in damp places or with high temperature fluctuations, oil must be changed **immediately** should condensate (frothy oil) occur in the gear box.

**NPSH values must be observed.**

## Cooling the Gear Oil

**Important!** The water input pressure must not exceed 2 bar when using the integrated system for cooling the gear oil (standard version).

If a separate cooling circuit (maximum 29 PSI [2 bar]) is installed, it is then possible to have an input pressure of up to maximum 145 PSI (10 bar) on the suction side.

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

**Important!** The pumps can be run without gear oil cooling in continuous operation **up to** a power rating of **107 hp (80 kW)** or with major intermittent operation).

If operation power **exceeds 107 hp (80 kW)** or if continuous operation is the case, the pump must be run with the integrated oil cooling system. The maximum temperature of the water being pumped and which is also fed through the cooling system must not exceed 86 °F (30°C). The amount which is fed into the cooling system depends on the pump speed and is approximately 1.85 GPM (7.0 L/min) at 580 RPM. The cooling water is sucked in by one of the pumping chambers and pumped away.

# Specifications

## Model GP8055-Brine

|                                   | U.S.                           | (Metric)      |
|-----------------------------------|--------------------------------|---------------|
| Volume .....                      | Up to 75.3 GPM .....           | (285 LPM)     |
| Discharge Pressure .....          | Up to 3000 PSI .....           | (200 bar)     |
| Power Consumption .....           | 145 BHP .....                  | 108 kW        |
| Speed .....                       | Up to 580 RPM .....            | 580 RPM       |
| Inlet Pressure.....               | Up to 29 PSI .....             | (2.0 bar)     |
| Plunger Diameter.....             | 2.17" .....                    | 55mm          |
| Plunger Stroke .....              | 2.83" .....                    | 72mm          |
| Crankshaft Diameter .....         | 2.76" .....                    | 70mm          |
| Key Width .....                   | 0.55" .....                    | 14mm          |
| Crankshaft Mounting.....          | Either side                    |               |
| Shaft Rotation .....              | Top of pulley towards manifold |               |
| Temperature of Pumped Fluids..... | Up to 86° F* .....             | (30° C)*      |
| Inlet Ports.....                  | (2) 3" BSP                     |               |
| Discharge Ports .....             | (2) 1-1/4" BSP                 |               |
| Weight.....                       | 767 lbs. ....                  | (348kg)       |
| Crankcase Oil Capacity .....      | 3.3 Gal. ....                  | (12.5 liters) |
| Fluid End Material.....           | Nickle Aluminum Bronze         |               |
| NPSHR .....                       | 23.0 ft-head.....              | 7.0 mWs       |

\*Higher water temperatures possible with separate crankcase cooling system; the manufacturer is to be contacted in this case.

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.

| GP8055 HORSEPOWER REQUIREMENTS |      |         |          |          |          |
|--------------------------------|------|---------|----------|----------|----------|
| RPM                            | GPM  | 500 PSI | 1000 PSI | 2000 PSI | 3000 PSI |
| 300                            | 39   | 13.9    | 27.9     | 55.7     | 83.6     |
| 400                            | 52   | 18.6    | 37.1     | 74.3     | 111.4    |
| 500                            | 65   | 23.2    | 46.4     | 92.9     | 139.3    |
| 580                            | 75.5 | 27.0    | 53.9     | 107.9    | 161.8    |

### 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:

$$\frac{\text{GPM} \times \text{PSI}}{1450} = \text{HP}$$

### SPECIAL NOTE:

The theoretical gallons per revolution (gal/rev) is 0.130. To find specific outputs at various RPM, use the formula:

$$\text{GPM} = 0.130 \times \text{RPM}$$

# Specifications

## Model GP8060-Brine

|                                   | U.S.              | (Metric)                       |
|-----------------------------------|-------------------|--------------------------------|
| Volume.....                       | Up to 89.0 GPM    | (340 LPM)                      |
| Discharge Pressure .....          | Up to 2465 PSI    | (170 bar)                      |
| Power Consumption .....           | 142 BHP           | 106 kW                         |
| Speed .....                       | Up to 580 RPM     | 580 RPM                        |
| Inlet Pressure.....               | Up to 29 PSI      | (2.0 bar)                      |
| Plunger Diameter.....             | 2.36"             | 60mm                           |
| Plunger Stroke .....              | 2.83"             | 72mm                           |
| Crankshaft Diameter.....          | 2.76"             | 70mm                           |
| Key Width .....                   | 0.55"             | 14mm                           |
| Crankshaft Mounting.....          |                   | Either side                    |
| Shaft Rotation .....              |                   | Top of pulley towards manifold |
| Temperature of Pumped Fluids..... | Up to 86° F*      | (30° C)*                       |
| Inlet Ports.....                  |                   | (2) 3" BSPP                    |
| Discharge Ports .....             |                   | (2) 1-1/4" BSPP                |
| Weight.....                       | 767 lbs.          | (348kg)                        |
| Crankcase Oil Capacity .....      | 3.3 Gal.          | (12.5 liters)                  |
| Fluid End Material.....           |                   | Nickle Aluminum Bronze         |
| NPSHR .....                       | 26.2 ft-head..... | 8.0 mWts                       |

\*Higher water temperatures possible with separate crankcase cooling system; the manufacturer is to be contacted in this case.

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.

| GP8060 HORSEPOWER REQUIREMENTS |     |         |          |          |          |
|--------------------------------|-----|---------|----------|----------|----------|
| RPM                            | GPM | 500 PSI | 1000 PSI | 2000 PSI | 2500 PSI |
| 300                            | 47  | 16.8    | 33.6     | 67.1     | 83.9     |
| 400                            | 62  | 22.1    | 44.3     | 88.6     | 110.7    |
| 500                            | 78  | 27.9    | 55.7     | 111.4    | 139.3    |
| 580                            | 89  | 32.1    | 64.3     | 128.6    | 160.7    |

### 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:

$$\frac{\text{GPM} \times \text{PSI}}{1450} = \text{HP}$$

### SPECIAL NOTE:

The theoretical gallons per revolution (gal/rev) is 0.155. To find specific outputs at various RPM, use the formula:

$$\text{GPM} = 0.155 \times \text{RPM}$$

# Specifications

## Model GP8065-Brine

|                                    | U.S.                           | (Metric)      |
|------------------------------------|--------------------------------|---------------|
| Volume .....                       | Up to 105.7 GPM .....          | (400 LPM)     |
| Discharge Pressure .....           | Up to 2000 PSI .....           | (140 bar)     |
| Power Consumption .....            | 147 BHP .....                  | 110 kW        |
| Speed .....                        | Up to 580 RPM .....            | 580 RPM       |
| Inlet Pressure .....               | Up to 29 PSI .....             | (2.0 bar)     |
| Plunger Diameter .....             | 2.55" .....                    | 65mm          |
| Plunger Stroke .....               | 2.83" .....                    | 72mm          |
| Crankshaft Diameter .....          | 2.76" .....                    | 70mm          |
| Key Width .....                    | 0.55" .....                    | 14mm          |
| Crankshaft Mounting .....          | Either side                    |               |
| Shaft Rotation .....               | Top of pulley towards manifold |               |
| Temperature of Pumped Fluids ..... | Up to 86° F* .....             | (30° C)*      |
| Inlet Ports .....                  | (2) 3" BSPP                    |               |
| Discharge Ports .....              | (2) 1-1/4" BSPP                |               |
| Weight .....                       | 767 lbs. ....                  | (348kg)       |
| Crankcase Oil Capacity .....       | 3.3 Gal. ....                  | (12.5 liters) |
| Fluid End Material .....           | Nickle Aluminum Bronze         |               |
| NPSHR .....                        | 23.6 ft-head .....             | 7.2 mWs       |

\*Higher water temperatures possible with separate crankcase cooling system; the manufacturer is to be contacted in this case.

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.

| GP8065 HORSEPOWER REQUIREMENTS |     |         |         |          |          |
|--------------------------------|-----|---------|---------|----------|----------|
| RPM                            | GPM | 500 PSI | 750 PSI | 1000 PSI | 2000 PSI |
| 300                            | 54  | 19.3    | 28.9    | 38.6     | 77.1     |
| 400                            | 72  | 25.7    | 38.6    | 51.4     | 102.9    |
| 500                            | 91  | 32.5    | 48.8    | 65.0     | 130.0    |
| 580                            | 106 | 37.5    | 56.3    | 75.0     | 150.0    |

### 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:

$$\frac{\text{GPM} \times \text{PSI}}{1450} = \text{HP}$$

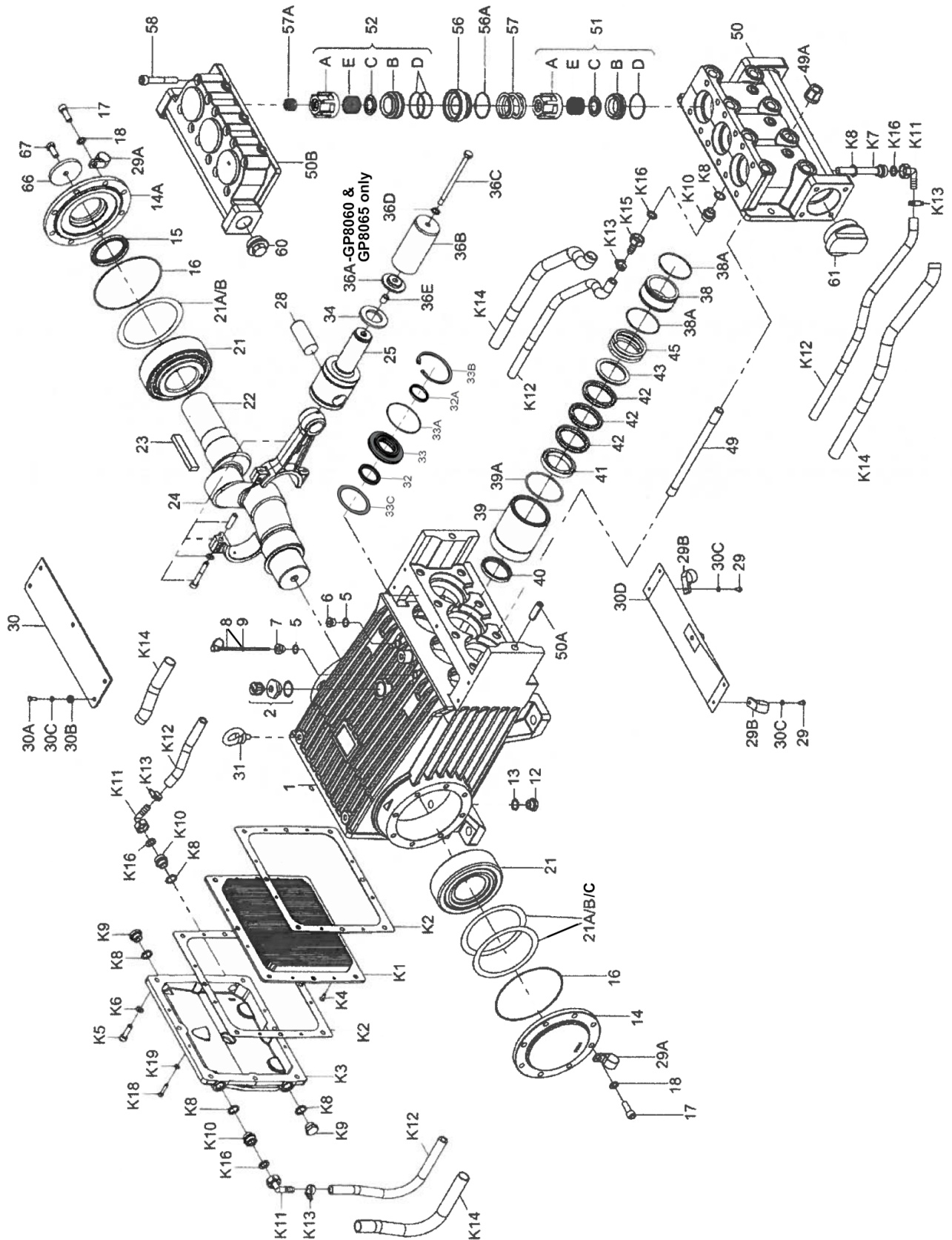
### SPECIAL NOTE:

The theoretical gallons per revolution (gal/rev) is 0.181. To find specific outputs at various RPM, use the formula:

$$\text{GPM} = 0.181 \times \text{RPM}$$



# Exploded View - GP8055/GP8060/GP8065 - Brine



## Part List - GP8055/GP8060/GP8065 - Brine

| Item | Part       | Description                               | Qty | Item | Part       | Description                       | Qty |
|------|------------|---|-----|------|------------|-----------------------------------|-----|
| 1    | 05380      | Crankcase                                 | 1   | 40   | 06996      | Seal Ring (GP8065)                | 3   |
| 2    | 06893      | Oil Filler Plug Assembly with Vent        | 1   | 41   | 05276      | Pressure Ring (GP8055)            | 3   |
| 5    | 22929      | Copper Washer                             | 2   | 41   | 05068      | Pressure Ring (GP8060)            | 3   |
| 6    | 12256      | Plug, 3/8" BSP                            | 1   | 41   | 05117      | Pressure Ring (GP8065)            | 3   |
| 7    | 05656      | Plug for Oil Dipstick                     | 1   | 42   | 05277      | V Sleeve (GP8055)                 | 9   |
| 8    | 05035      | Oil Dipstick Assembly                     | 1   | 42   | 05069      | V Sleeve (GP8060)                 | 9   |
| 9    | 06225      | O-Ring                                    | 1   | 42   | 06997      | V Sleeve (GP8065)                 | 9   |
| 12   | 07109      | Plug, 1/2" BSP                            | 2   | 43   | 05278      | Sleeve Support Ring (GP8055)      | 3   |
| 13   | 07182      | Seal                                      | 2   | 43   | 05070      | Sleeve Support Ring (GP8060)      | 3   |
| 14   | 05036      | Bearing Cover Closed                      | 1   | 43   | 05118      | Sleeve Support Ring (GP8065)      | 3   |
| 14A  | 05298      | Bearing Cover Open                        | 1   | 45   | 05279      | Seal Tension Spring (GP8055)      | 3   |
| 15   | 05112      | Radial Shaft Seal                         | 1   | 45   | 05071      | Seal Tension Spring (GP8060)      | 3   |
| 16   | 05037      | O-Ring                                    | 2   | 45   | 05119      | Seal Tension Spring (GP8065)      | 3   |
| 17   | 05038      | Hexagon Socket Screw                      | 16  | 49   | 05072      | Stud Bolt                         | 8   |
| 18   | 05039      | Spring Ring                               | 16  | 49A  | 05073      | Hexagon Nut                       | 8   |
| 21   | 05044      | Tapered Roller Bearing                    | 2   | 50   | 05074-3000 | Inlet Valve Casing                | 1   |
| 21A  | 05042      | Fitting Disc                              | 1-5 | 50A  | 13162      | Centering Stud                    | 2   |
| 21B  | 05043      | Fitting Disc                              | 1-5 | 50B  | 05075-3000 | Discharge Valve Casing            | 1   |
| 21C  | 05113      | Fitting Disc                              | 1-5 | 51   | 05076-0100 | Suction Valve Assembly            | 3   |
| 22   | 05299      | Crankshaft                                | 1   | 51A  | 04166      | Spring Tension Cap                | 3   |
| 23   | 05300      | Fitting Key                               | 1   | 51B  | 05078-0100 | Suction Valve Seat                | 3   |
| 24   | 05047      | Connecting Rod Assembly                   | 3   | 51C  | 05079-0100 | Valve Plate                       | 3   |
| 25   | 05048      | Crosshead c/w Plunger                     | 3   | 51D  | 07658-0001 | O-Ring, Viton                     | 3   |
| 28   | 05049      | Crosshead Pin                             | 3   | 51E  | 05080      | Valve Spring                      | 3   |
| 29   | 05051      | Hexagon Screw                             | 5   | 52   | 05082-0100 | Discharge Valve Assembly          | 3   |
| 29A  | 05381      | Bracket 1 for Cooling Hose                | 2   | 52A  | 04166      | Spring Tension Cap                | 3   |
| 29B  | 05383      | Bracket 2 for Cooling Hose                | 2   | 52B  | 05084-0100 | Discharge Valve Seat              | 3   |
| 30   | 05052      | Cover Plate                               | 1   | 52C  | 05079-0100 | Valve Plate                       | 3   |
| 30A  | 07225-0100 | Hexagon Screw                             | 5   | 52D  | 05613      | O-Ring, Viton                     | 6   |
| 30B  | 13136      | Grommet                                   | 5   | 52E  | 05080      | Valve Spring                      | 3   |
| 30C  | 08280      | Washer                                    | 10  | 56   | 05085-0100 | Discharge Valve Adaptor           | 3   |
| 30D  | 05050      | Splash Cover                              | 1   | 56A  | 05613      | O-Ring, Viton                     | 3   |
| 31   | 07623      | Eye Bolt                                  | 4   | 57   | 05086      | Pressure Spring                   | 3   |
| 32   | 05058      | Radial Shaft Seal                         | 3   | 57A  | 07210-0100 | Pressure Spring                   | 3   |
| 32A  | 03118      | Oil Scraper                               | 3   | 58   | 05087-0100 | Hexagon Socket Screw              | 12  |
| 33   | 03119      | Seal Retainer                             | 3   | 60   | 06909      | Plug, 1 1/4" BSP                  | 1   |
| 33A  | 05056      | O-Ring                                    | 3   | 61   | 05088      | Plug, 3" BSP                      | 1   |
| 33B  | 05054      | Clip Ring                                 | 3   | 66   | 05303      | Disc for Crankshaft               | 1   |
| 33C  | 05059      | Fitting Disc                              | 3   | 67   | 13358      | Hexagon Screw                     | 1   |
| 34   | 05060      | Oil Shield                                | 3   | K1   | 05026-0100 | Cooling Vane Plate                | 1   |
| 36A  | 05063      | Cover for Plunger Pipe<br>(GP8060/GP8065) | 3   | K2   | 05027      | Seal for Gear Cover               | 2   |
| 36B  | 05280      | Plunger Pipe (GP8055)                     | 3   | K3   | 05028      | Gear Cover                        | 1   |
| 36B  | 05061      | Plunger Pipe (GP8060)                     | 3   | K4   | 05029      | Hexagon Head Countersunk<br>Screw | 4   |
| 36B  | 05115      | Plunger Pipe (GP8065)                     | 3   | K5   | 07381      | Hexagon Socket Screw              | 8   |
| 36C  | 05062      | Tension Screw                             | 3   | K6   | 08041      | Washer                            | 8   |
| 36D  | 07665      | Copper Washer                             | 3   | K7   | 05030      | Connection for Oil Cooler         | 1   |
| 36E  | 06900      | Centering Sleeve                          | 3   | K8   | 07661      | Copper Seal                       | 6   |
| 38   | 05283      | Seal Case (GP8055)                        | 3   | K9   | 07109      | Plug, 1/2" BSP                    | 2   |
| 38   | 05064      | Seal Case (GP8060/GP8065)                 | 3   | K10  | 05031      | Connecting Branch                 | 3   |
| 38A  | 13286-0001 | O-Ring, Viton (GP8055)                    | 6   | K11  | 05032      | Hose Adaptor                      | 3   |
| 38A  | 06667-0001 | O-Ring, Viton (GP8060/GP8065)             | 6   | K12  | 05033      | Tube for Cooler                   | 2   |
| 39   | 05275      | Seal Sleeve (GP8055)                      | 3   | K13  | 05402      | Hose Clamp                        | 4   |
| 39   | 05065      | Seal Sleeve (GP8060)                      | 3   | K14  | 05403      | Hose Guard                        | 2   |
| 39   | 05116      | Seal Sleeve (GP8065)                      | 3   | K15  | 05404      | Hose Coupling Nut                 | 1   |
| 39A  | 05066      | O-Ring                                    | 3   | K16  | 05405      | Flat Gasket                       | 4   |
| 40   | 07723      | Seal Ring (GP8055)                        | 3   | K18  | 04158      | Hexagon Socket Screw              | 4   |
| 40   | 05067      | Seal Ring (GP8060)                        | 3   | K19  | 05053      | Washer                            | 4   |

# Pump Repair Kits - GP8055/GP8060/GP8065 - Brine

## Plunger Packing Kits

### GP8055 - #09616

| Item | Part # | Description  | Qty. |
|------|--------|--------------|------|
| 38A  | 13286  | O-Ring       | 6    |
| 38B  | 05281  | Support Ring | 6    |
| 39A  | 05066  | O-Ring       | 3    |
| 40   | 07723  | Seal Ring    | 3    |
| 42   | 05277  | V-Sleeve     | 9    |

### GP8060 - #09617

| Item | Part # | Description | Qty. |
|------|--------|-------------|------|
| 38A  | 06667  | O-Ring      | 6    |
| 39A  | 05066  | O-Ring      | 3    |
| 40   | 05067  | Seal Ring   | 3    |
| 42   | 05069  | V-Sleeve    | 9    |

### GP8065 - #09586

| Item | Part # | Description | Qty. |
|------|--------|-------------|------|
| 38A  | 06667  | O-Ring      | 6    |
| 39A  | 05066  | O-Ring      | 3    |
| 40   | 06996  | Seal Ring   | 3    |
| 42   | 06997  | V-Sleeve    | 9    |

## Oil Seal Kit - #09584

| Item | Part # | Description       | Qty. |
|------|--------|-------------------|------|
| 32   | 05058  | Radial Shaft Seal | 3    |
| 33A  | 05056  | O-Ring            | 3    |

## Inlet Valve Kit - #09587-0100

| Item | Part #     | Description          | Qty. |
|------|------------|----------------------|------|
| 51   | 05076-0100 | Inlet Valve Assembly | 3    |
| 56A  | 05613      | O-Ring               | 3    |

## Discharge Valve Kit - #09588-0100

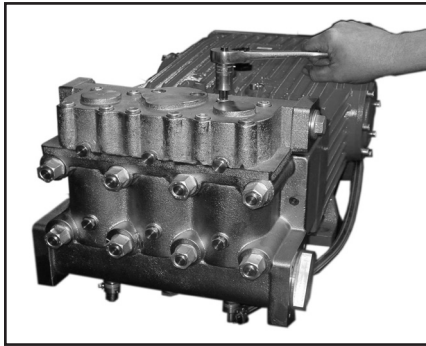
| Item | Part #     | Description              | Qty. |
|------|------------|--------------------------|------|
| 52   | 05082-0100 | Discharge Valve Assembly | 3    |
| 56A  | 05613      | O-Ring                   | 3    |

| GP8055/GP8060/GP8065 - Brine<br>TOOL LIST AND TORQUE SPECIFICATIONS |            |                                     |                       |   |
|---|------------|-------------------------------------|-----------------------|---|
| ITEM  | PART #     | DESCRIPTION                         | TORQUE<br>Ft-lbs (NM) | TOOL NEEDED                                   |
| 17  | 05038      | Hexagon Socket Screw                | 64 (87)               | 10mm allen wrench                             |
| 24  | 05047      | Connecting Rod Hexagon Socket Screw | 37 (50)               | 8mm allen wrench                              |
| 33B   | 05054      | Clip Ring                           | n/a                   | Industrial Snap ring pliers                   |
| 36C   | 05062      | Tension Screw                       | 30 (40)               | 16mm socket                                   |
| 49A   | 05073      | Hexagon Nut (manifold)              | 265 (360)             | 30mm socket                                   |
| 51  | 05076-0100 | Valve Assemblies                    | n/a                   | Valve puller (p/n 07662) - included with pump |
| 52  | 05082-0100 | Valve Assemblies                    | n/a                   | Valve puller (p/n 07662) - included with pump |
| 58  | 05087      | Hexagon Socket Screw                | 132 (180)             | 12mm allen wrench                             |
| K5  | 07381      | Hexagon Socket Screw                | n/a                   | 8mm allen wrench                              |

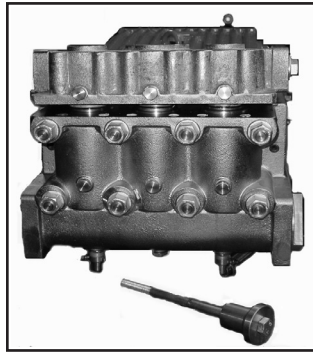
| GP8055/GP8060/GP8065 - Brine<br>Troubleshooting |   |   |
|---|---|---|
| Problem   | Cause   | Solution  |
| Pressure drops, water leaks                     | V-sleeves leak                                    | Replace V-sleeves, examine surface of plunger   |
| Pressure drops, pump becomes loud               | Discharge or suction valve leaks                  | Replace valve   |
|   | Steam formation (cavitation)                      | Reduce suction height, reduce flow resistance in inlet line, clean inlet filter, lower water temperature  |
| Irregular pressure                              | Worn valves                                       | Examine valves  |
|   | O-Ring on the valves or inlet valve adapter leaks | Examine O-ring, examine valve casing for unevenness on the sealing surfaces   |
| Oil leaks at visible part of plunger            | Gear sealing is leaky                             | Examine seals and running surface of plunger  |
| Dirty mile-colored frothy oil                   | Oil has mixed with water                          | Replace oil immediately, find and fix the cause   |
| Oil leakage on the crankshaft                   | Shaft seal ring leaks                             | Check seal and shaft  |
| Noise increases without loss of pressure        | Worn bearing                                      | Dismantle gear, examine all parts, replace worn parts, check oil level. If service life was too short, check for excess strain or whether lubrication intervals were too long. Only specified lubricants are to be used |



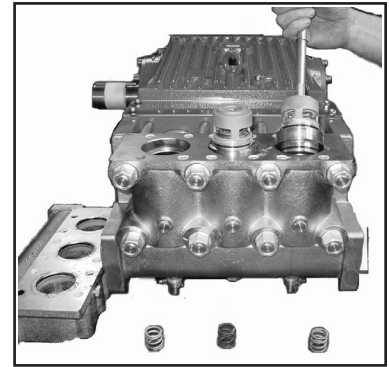
# Pump Repair Instructions - GP8055/GP8060/GP8065 - Brine Valve Inspection and Repair



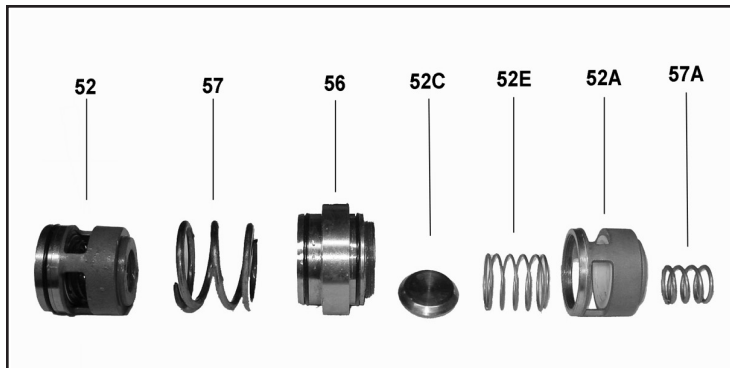
1) Remove bolts (58).



2) Remove discharge casing (50B) up and away.

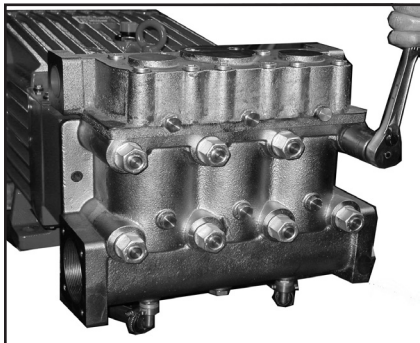


3) Take out pressure springs (57A). Pull out assembled valves (51 & 52) with fitting tool.



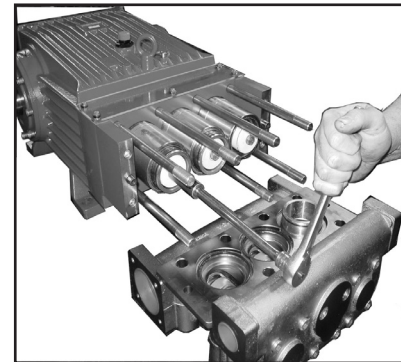
4) The spring tension cap (51A, 52A) is screwed together with the valve seat (51B or 52B). Screw off spring tension cap. Takeout springs (51E, 52E) and valve plate (51C, 52C). Check sealing surfaces and O-rings (51D, 52D). Replace worn parts. Coat threads of valve seat with silicon grease or molycote anti-seize Cu-7439 when reassembling. Before refitting the valves, clean the sealing surfaces in the casing and check for any damage. Tighten caps (58) at 133 Ft-lbs; check torque tension after 8-10 operating hours.

## To Check Seals and Plunger Pipe



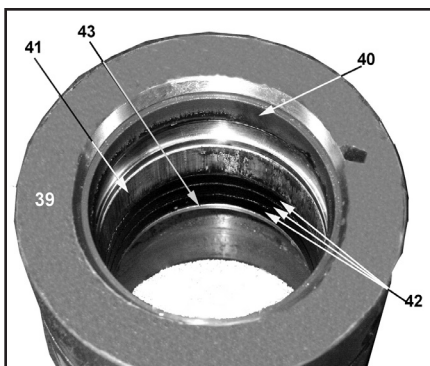
5) Remove hexagon nuts (49A) and valve casing together with seal case (38) from crankcase (1). If necessary, carefully tap the valve casing (50) past the centering stud (50A) using a rubber hammer.

**IMPORTANT!** If necessary, support the valve casing by resting it on wooden blocks or by using a pulley.



6) Remove tension screw (36C) and take seal sleeve (39) together with all mounted parts out of the drive. Pull plunger pipe out of the seal assembly and check for any damage. Carefully, remove seal rings (40) and sleeves (42) with a screw driver.

# Pump Repair Instructions - GP8055/GP8060/GP8065 - Brine

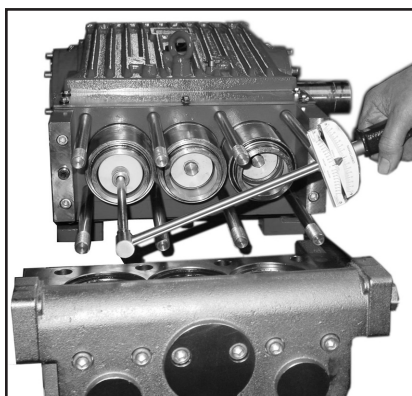


7) **Important!** Be careful not to damage the seal sleeve (39) and pressure ring (41). Check the inner diameter of the pressure ring for wear and if necessary replace together with seals (40) and (42). Clean all parts. New parts should be lightly coated with silicon grease before installation. Inert the seal unit (40, 41, 42 43) into the sleeve. Push the ceramic plunger carefully through the seals from the crankcase side. If necessary, the seals can be held tightly using a suitable pipe support held on the other side of the seal sleeve.



8) Take out the seal case (38) from the valve (if necessary secure 2 screwdrivers in the front O-ring groove to extract seal casing from valve casing). Coat seals with silicon grease before installing.

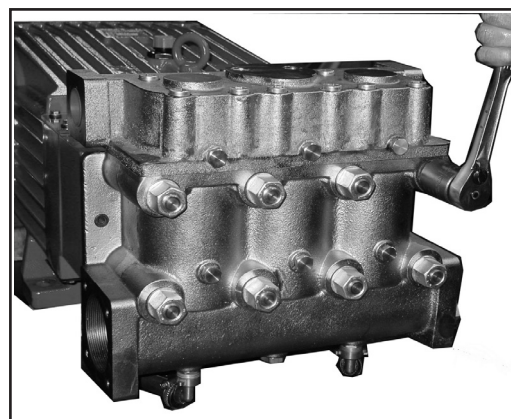
**Important!** Mounting surfaces of the crankcase and the valve casing must be clean and free of damage. The components must lie exactly and evenly on one another. The same exactness applies for all centering positions in the crankcase, pressure and valve casing.



9) Coat the seal sleeve lightly with anti-corrosive grease (e.g. molycot no. Cu-7439) in its fitted area towards the crankcase. Insert the seal sleeves in to their crankcase fittings. Coat the threads of the tension screw (36C) lightly with thread glue and insert it together with a new copper ring (36D) through the ceramic pipe. Turn the pump per hand until the plunger (25) rests against the plunger pipe. Tighten the tension screw at 30 Ft.-lbs.

**Important!** Thread glue must never come between the plunger pipe (36B) and centering sleeve (36E). Overtensioning of the plunger pipe by excessive tightening of the tension screw and/or dirt or damage on the mounting surfaces can lead to plunger pipe breakage. Insert the seal tension spring (45) and O-ring (39A) in to the seal sleeve (39).

**Replacing Valve Casing:**

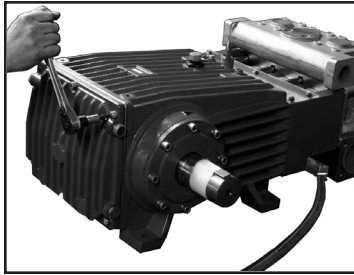


10) Put seal cases (38) in the centering holes of the valve casing, then push valve casing carefully on to centering studs (50A). Tighten hexagon screws (49A) evenly and crosswise at 266 Ft.-lbs.

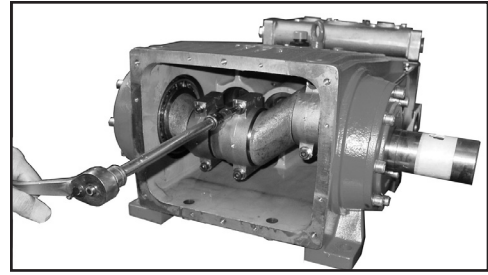
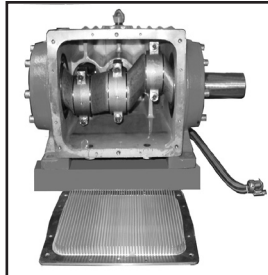
**Important!** The torque tension on the screws (49A) must be checked after 8-10 operating hours; the pump must be at zero pressure. Thereafter, the tension is to be checked every 200 operating hours.

# Pump Repair Instructions - GP8055/GP8060/GP8065 - Brine

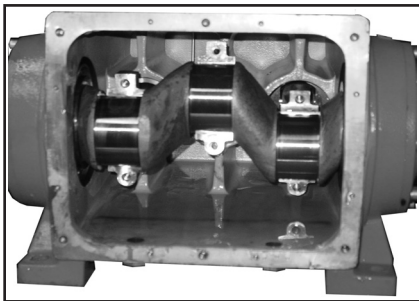
## To Dismantle Crankcase Gear



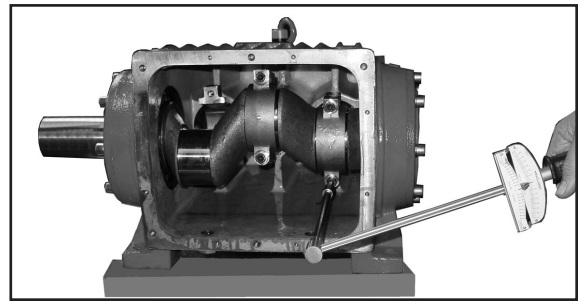
11) Take out plungers and seal sleeves as described above. Drain the oil by taking off the plug (12). After removing the clip ring (33B), lever out the seal retainer (33) with a screwdriver. Open hose adaptor (K11) and remove gear cover (K3). Remove the cooling vane plate (K1) by removing the screws (K4)



12) Remove the connecting rod screws (24). **Important!** Connecting rods are marked 1 to 3 for identification. Do not twist connecting rod halves or interchange them. When reassembling, the connecting rod must be fitted in their exact original position on the crankshaft journals.



13) Push connecting rod halves together with the crosshead as far as possible into the crosshead guide. Take out bearing cover (14/14A) and push out crankshaft taking particular care that the con rod doesn't get bent. Check surfaces on the connecting rods (24), crankshaft (22) and crossheads (25). Check the surfaces of the crosshead guides in the crankcase for any unevenness.

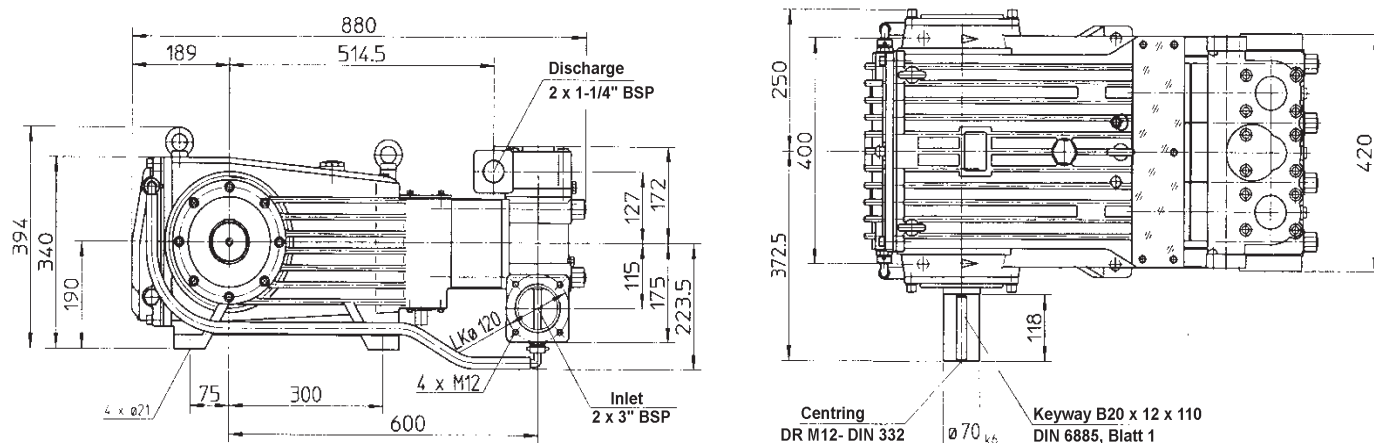


14) Reassemble in reverse order. Thread the long end of the crankshaft together with the inner bearing rings into the crankcase; then mount outer bearing ring (20) and spacer ring (22A). Mount connecting rod halves in their exact original position and tighten at 37 Ft-lbs. **Important!** Connecting rods must be able to move slightly sideways on the stroke journals.

15) Mount bearing cover (14A) and tighten screws (17) to 64 Ft-lbs. Adjust axial play (clearance) on the crankshaft to minimum 0.1 mm / max. 0.15 mm using shims (21A/21B). The shaft should turn easily with little clearance. Connecting rod must sit exactly in the middle of each crank pin. Fit the bearing cover (14) and tighten the screws (17) at 64 Ft-lbs. Seal (32A) must always be installed so that the seal lip on the inside diameter faces the oil. Possible axial float of the seal adaptor (33) to be compensated with shims (33C).

Mount cooling plate (K1) and gear cover (K3) with their respective seals (K2). When assembling the cooling circuit line, make sure that the oil cooler connection (K7) is always joined to the upper connection (K3) of the gear cover.

## Pump Dimensions (mm) - GP8055/GP8060/GP8065 - Brine



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