

# GP7645GBHS/GP7650GBHS/GP7655GBHS PUMP SPECIFICATIONS

## 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) |
| GP8135 | 142 (106)      | 7250 (500) | 580        | 29.1 (110)  | 86 (30)    | 1.38 (35) | 2.83 (72)      | 800 (363) | 27.9 (8.5)        |
| GP8140 | 146 (109)      | 5510 (380) | 580        | 39.6 (150)  | 86 (30)    | 1.57 (40) | 2.83 (72)      | 800 (363) | 24.6 (7.5)        |

1) Figures given for maximum pressure and maximum speed (rpm) apply to intermittent operation with cold water.

### Definition of intermittent operation:

Operation at full performance for not more than altogether 20 minutes an hour, with the pump running without pressure or turned off in between.

For example, this can be full load operation for 5 minutes four times an hour with 10 minute breaks in between or continuous full load operation for 20 minutes followed by a 40 minute break.

2) Higher water temperatures are possible with a separate external crankcase cooling system.

The manufacturer is to be contacted in this case.

3) The maximum pressure is to be reduced by 10% where continuous operation with a cooler (with or without gear) is involved.

### NPSHR / Inlet pressure

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



The suction side input pressure must not exceed 29 PSI (2 bar) if the integrated gear oil cooling system (standard version) is connected.

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

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

### Level of noise emission

Emission sound pressure level: ≤ 70 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:  $41^{\circ}\text{F} < T_{\text{Amb.}} < 86^{\circ}\text{F}$

Ambient temperature:  $5^{\circ}\text{C} < T_{\text{Amb.}} < 30^{\circ}\text{C}$

### Oil filling

- Filling quantity: **4.2 gal (16.0 l)**
- Quality: Industrial gear oil **ISO VG 220** oil 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**.



If the pump is mounted on a vehicle (possible inclined position during operation) and/or if the pump speed is between 300 rpm and 500 rpm, the required oil quantity increases by **0.26 gallons (1 liter)**.

### Installation/ Putting into Operation

#### Shaft protector

When the pump is in operation, the driven shaft side and coupling by a contact-protector and the plunger room by cover (30).

Do not step onto the protective plate (30) nor put heavy objects on it.

#### Direction of pump rotation

The GP8135/GP8140 series has a black arrow on the reduction gear which shows the preferred direction of rotation.

The pumps can be delivered either with the gear on the left side or right side which eases the planning of assembling units with regard to rotational direction.

Gear on right side from behind pump = optimal rotation to the left

Gear on left side from behind pump = optimal rotation to the right

The indicated direction ensures that oil is correctly distributed on and into the crosshead guides via optimal conrod motion thus providing best possible lubrication particularly with regard to continuous operation.

The pump can also be run against the recommended direction of rotation if operated periodically or at reduced pressure.

If so, the pump must be run in in this direction to smoothen the bearing areas.

This is done by initially operating the pump at zero pressure for 30 minutes; thereafter the pressure is to be slowly increased over a period of an hour to the desired maximum operating pressure.

Check the oil temperature during this process.

### Suction line filter

Recommended mesh size 50 µm.

### Gear oil cooling



The pumps can be run without gear oil cooling in continuous operation **up to** a power rating of **93.9 HP (70 kW)** or with major intermittent operation at full performance.

If operational power exceeds **93.9 HP (70 kW)** or in continuous operation, 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 water amount which is fed into the cooling system depends on the pump speed and is approximately 1.9 GPM (7.0 l/min) at 580 pump rpm. The cooling water is sucked in by one of the pumping chambers and pumped away.



If higher medium temperatures or liquids other than water are involved or aggressive media such as seawater, demineralised water etc., pump must be fitted with a separate cooling circuit. The separate cooler must have a cooling efficiency of 1700 watts.

If there is a danger of frost, an appropriate amount of antifreeze must be mixed into the cooling circuit.

### Valve Casing



The torque tension on the valve casing nuts (49A) is to be checked after approximately 200 operating hours. Please see the section 'Maintenance and Servicing' concerning the torque values.

The pump must be at zero pressure when checking the torque tension.

### Operation

When starting up for work, the pump must run first at zero pressure for approximately 1 minute.



The pump and cooling system must be emptied if there is a danger of frost. Note that travel wind, for example, can cause water in pumps fitted on open vehicles to freeze even if the outside temperature is above freezing point.

Empty the pump through the second unused suction and discharge connection using compressed air, for example.

Bottom plugs (59) on the suction channel can be opened as well.

The pump can also be run "dry" for 1-2 minutes to aid emptying.

Empty the cooling system by removing screw joints (K10) on the pump head (50) and by blowing the hoses (K12) with compressed air on the (K10/K7) side.

Anti-freeze is recommended to guard against frost where a separate cooling circuit is used.



The service life of the seals is maximized if a minimal amount of leakage is present.

A few drops of water can drip from each plunger every minute.

Leakage has to be examined every day; the plunger seals must be changed should leakage become excessive (=constant dripping).

### 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:

- Assembling tool (code no. 15.0038)

### Suction and Discharge Valves

Loosen screws (58), lift discharge casing (53A – GP8135), (50B – GP8140) up and away.

Take out pressure springs (57).

Pull out assembled valves (51 and 52) with fitting tool (p/n 07662).

### To dismantle valves:

The spring tension cap (51A, 52A) is screwed together with the valve seat (51B or alternatively 52B).

Screw off spring tension cap, take out springs (51E, 52E) and valve plate (51C, 52C).

Check sealing surfaces and O-rings (51D/F, 52D/F, 56A).

Replace worn parts.

Before re-fitting the valves, clean the sealing surfaces in the casing and check for any damage.

Tighten screws (58) to the required torque.

Check torque tension after 8-10 operating hours.