Series D/H/M/HD/PGH
Fixed Displacement
Gear Pumps

Hydraulic Pump/Motor Division
Otsego, MI 49078
Fixed Displacement Gear Pumps
Series D/H/M/HD

Introduction

Quick Reference Data Chart

<table>
<thead>
<tr>
<th>Pump Series</th>
<th>Displacement IN³/REV. (CC/REV.)</th>
<th>Pump Delivery @ 1000 RPM in GPM (LPM)</th>
<th>Weight In Pounds (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>.114 - .641 (1.87 - 10.50)</td>
<td>.5 - 2.7 (1.9 - 10.2)</td>
<td>2 - 3 (.9 - 1.4)</td>
</tr>
<tr>
<td>H</td>
<td>.603 - 2.227 (9.88 - 36.50)</td>
<td>2.5 - 9.3 (9.5 - 35.2)</td>
<td>5 - 7 (2.3 - 3.2)</td>
</tr>
<tr>
<td>M</td>
<td>2.146 - 3.353 (35.17 - 54.95)</td>
<td>9.0 - 14.1 (34.1 - 53.4)</td>
<td>11 - 13 (4.9 - 5.9)</td>
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<tr>
<td>HD</td>
<td>See above</td>
<td>See above</td>
<td>See above</td>
</tr>
</tbody>
</table>

Features
- Pressure Loaded Design
- Efficient, Simple Design — few moving parts
- Exceptionally Compact and Lightweight for Their Capacity
- Efficient At High Pressure Operation
- Resistant to Cavitation Effects
- High Tolerance to System Contamination
- Reliable Under Cold Weather Operation
- Sleeve Bearing Construction
- Multi-Fluid Compatibility

Controls
- Optional Built In Relief Valve On "D" Series
- Optional Built In Relief Valve On "H" Series
- Optional Built In Relief Valve, and Flow Divider On "H" Series
- Consult Factory for Special Controls

Pressure Capabilities
- D — to 2500 PSI (172 Bar) Continuous
- H — to 2500 PSI (172 Bar) Continuous
- M — to 2500 PSI (172 Bar) Continuous

Hydraulic Pump/Motor Division
Otsego, MI 49078
A Parker pressure loaded gear pump consists of two intermeshing, hardened steel, precision ground gear assemblies. These precision gears are enclosed by a high strength, die cast aluminum front cover, back cover and a high yield strength extruded aluminum center section.

Gear assemblies consist of one drive gear shrink fit on precision ground and polished drive shaft. This shaft extends outside the pump to permit coupling to an external prime mover by means of a standard key way. The second gear being the driven gear is also shrink fit on a precision ground and polished driven shaft. Retaining rings installed in grooves provided on the shaft ensure that the gears will not move axially and a key keeps the drive gear from moving radially.

A lip type shaft seal is provided at the drive shaft to prevent external leakage of pump fluid. The sealing lip in contact with the fluid is spring loaded. Vent passages within the housings and driven shaft communicate pump inlet pressure to the rotary seal area, thus imposing the lowest possible pressure at the rotary seal for extended seal life.

The phenolic heat shield, backup gasket, and molded rubber seal form chambers behind the steel backed bronze wearplate. These chambers are connected either to inlet or discharge pressure. Discharge pressure, acting within the chambers, axially loads and deflects the wear plate toward the gear faces to take up gear side clearances. This pressure loading on the wear plate increases pump efficiency by reducing internal leakage to a minimum, providing longer pump life.

Pump rotation is dependent on proper orientation of the heat shield, backup gasket, and rubber seal in the front cover housing, the center section and rear cover oriented respectively.

Pumping action is achieved by connecting the pump drive shaft to a prime mover and rotating the gears away from the inlet port. Rotation causes the gear mesh to increase on the inlet side and decrease on the outlet (pressure) side.

For additional information – call your local Parker Fluidpower Motion & Control Distributor.
Performance Data
Series D Fixed Displacement, Pressure Loaded Gear Pump

Features
• Pressure Loaded Design
• Efficient, Simple Design — Few Moving Parts
• Exceptionally Compact and Lightweight for Their Capacity
• Efficient At High Pressure Operation
• Resistant to Cavitation Effects
• High Tolerance to System Contamination
• Reliable Under Cold Weather Operation
• Sleeve Bearing Construction
• Multi-Fluid Compatibility

Controls
• Optional Built In Relief Valve
• Consult Factory for Special Controls

Specifications
Flow Ratings: .5 GPM (1.9 LPM) to 2.7 GPM (10.2 LPM) (At 1000 RPM) See next page for additional flow data

Pressure Ratings: D05 thru D22 — 2500 PSI (172 Bar) Continuous
                    D27 — 2000 PSI (138 Bar) Continuous

Speed Ratings: D05 thru D22 — 500 to 4000 RPM
                D27 — 3000 RPM

Mounting: SAE-AA — 2 Bolt Flange
           4 Bolt Flange

Housing Material: Die Cast Aluminum

Installation Data
Inlet Conditions: 10 In. Hg. Max. Vacuum Condition (At 1800 RPM)
5 In. Hg. Max. Vacuum Condition (At Max. RPM)
20 PSI (1.4 Bar) Max. Positive Pressure

Operating Temperature Range: −40°F to 185°F
(−40°C to 85°C)

Filtration: Maintain SAE Class 4

Installation Note: See "Installation Information" for specific recommendations pertaining to system cleanliness, fluids, start-up, inlet conditions, shaft alignment, and other important factors relative to the proper installation and use of these pumps.
## Performance Data

**Flow In Gallons Per Minute — GPM (LPM)**

<table>
<thead>
<tr>
<th>Pump Model</th>
<th>Displacement IN³ (CC/REV.)</th>
<th>RPM</th>
<th>100 PSI (6.9 Bar)</th>
<th>1000 PSI (69 Bar)</th>
<th>1500 PSI (103 Bar)</th>
<th>2000 PSI (138 Bar)</th>
<th>2500 PSI (172 Bar)</th>
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<td></td>
<td></td>
<td>1200</td>
<td>.58 (2.20)</td>
<td>.48 (1.82)</td>
<td>.42 (1.59)</td>
<td>.37 (1.40)</td>
<td>.32 (1.21)</td>
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<td></td>
<td></td>
<td>1800</td>
<td>.87 (3.30)</td>
<td>.77 (2.92)</td>
<td>.71 (2.69)</td>
<td>.66 (2.50)</td>
<td>.61 (2.31)</td>
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<tr>
<td></td>
<td></td>
<td>3600</td>
<td>1.73 (6.56)</td>
<td>1.65 (6.25)</td>
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<td>1.56 (5.91)</td>
<td>1.52 (5.76)</td>
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<td></td>
<td></td>
<td>1200</td>
<td>.85 (3.22)</td>
<td>.73 (2.77)</td>
<td>.68 (2.58)</td>
<td>.62 (2.35)</td>
<td>.56 (2.12)</td>
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<td>1.16 (4.40)</td>
<td>1.10 (4.17)</td>
<td>1.05 (3.98)</td>
<td>.99 (3.75)</td>
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<td>1200</td>
<td>1.06 (4.02)</td>
<td>.94 (3.56)</td>
<td>.87 (3.30)</td>
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<td>1200</td>
<td>1.66 (6.29)</td>
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</table>

Data Based on 100 SSU Viscosity Fluids at 120°F (49°C)

For additional information – call your local Parker Fluidpower Motion & Control Distributor.
Fixed Displacement Gear Pumps
Series D

Performance Data

Based On Oil Temperature of 120°F (49°C)
(100 SSU) Atmospheric Inlet

D05, D07

D09, D11

Hydraulic Pump/Motor Division
Otsego, MI 49078
Performance Data

Based On Oil Temperature of 120°F (49°C) (100 SSU) Atmospheric Inlet

D14, D17

D22, D27
Fixed Displacement Gear Pumps
Series D

Technical Information

Dimensions — 2 Bolt Mounting
Millimeter equivalents for inch dimensions are shown in (**)

Clockwise Rotation and "A" Shaft Shown
(Port locations reverse for CCW rotation)

MTG. HOLE .392 (9.96) DIA. THRU 2-HOLES
2.000 (50.80) DIA.
1.998 (50.75)

2.50 (63.50) DIA.

3.25 (82.55)

WOODRUFF KEY
.125 (3.175) WIDE X .625 (15.88) DIA.
.25 (6.35)

50 (12.70)

.500 (12.70)

.499 (12.67)

.42 (10.67) FLANGE THICKNESS

1.56 (39.62)

"A" DIM. (See Chart)

1.31 (33.27)

3.68 (93.47)

FRONT VIEW

SIDE VIEW

REAR VIEW

"A" Dimensions: Inches (mm)

<table>
<thead>
<tr>
<th></th>
<th>D05</th>
<th>D07</th>
<th>D09</th>
<th>D11</th>
<th>D14</th>
<th>D17</th>
<th>D22</th>
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<td>D14</td>
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<td>D17</td>
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Hydraulic Pump/Motor Division
Otsego, MI 49078
Fixed Displacement Gear Pumps
Series D

Technical Information

Dimensions — 4 Bolt Mounting

Millimeter equivalents for inch dimensions are shown in (**

Clockwise Rotation and "A" Shaft Shown
(Port locations reverse for CCW rotation.)

"A" Dimensions: Inches (mm)

<table>
<thead>
<tr>
<th>D05</th>
<th>D07</th>
<th>D09</th>
<th>D11</th>
<th>D14</th>
<th>D17</th>
<th>D22</th>
<th>D27</th>
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<tr>
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<td>3.38</td>
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<td>(81.79)</td>
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<td>(90.93)</td>
<td>(93.98)</td>
<td>(99.06)</td>
<td>(103.89)</td>
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"S" Tang-end Shaft Option — For Use With 4 Bolt Mounting

Primarily used to direct couple to electric motor drive.

For additional information — call your local Parker Fluidpower Motion & Control Distributor.
**Fixed Displacement Gear Pumps**

**Series D**

**Technical Information**

**Dimensions — 2 Bolt Mounting**

(With "L" Back Cover For Tank Mounting)

Millimeter equivalents for inch dimensions are shown in (*)

**Counterclockwise Rotation and "A" Shaft Shown**

(Pump mounting flange opposite side of back cover centerline for CW rotation.)

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**Front View**

- **MTG HOLE**: .392 (9.95) DIA, 2 HOLES
- **.50 (12.70)**
- **3.250 (82.55)**
- **1.625 (41.20)**
- **.531 (13.49)**
- **10**
- **OF DRIVE**

**Side View**

- **RELIEF VALVE ASS'Y 666051**
- **BACK COVER ASS'Y**
- **5.00 (127.00) DIA**
- **2.00 (50.80)**
- **1.998 (50.78)**
- **.50 (12.70)**
- **.25 (6.35)**
- **"A" DIM.** (See Chart)
- **1.56 (39.62)**
- **.135 (3.43)**
- **104 X 157A O-RING**
- **BAFFLE**
- **TORQUE TO 190-210 IN. LBS**
- **CAPSCREW (4 REQ'D)**
- **TANK MTG. 5/16-18 UNC-2B**
- **68 DP, 1-HOLE**
- **34 X 143 WASHER (2 REQ'D)**
- **INLET PORT 1/2 N.P.T.F.**

**Rear View**

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**"A" Dimensions: Inches (mm)**

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<thead>
<tr>
<th>D05</th>
<th>D07</th>
<th>D09</th>
<th>D11</th>
<th>D14</th>
<th>D17</th>
<th>D22</th>
<th>D27</th>
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<tr>
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<td>3.87</td>
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<td>(86.11)</td>
<td>(86.39)</td>
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<td>(92.46)</td>
<td>(95.25)</td>
<td>(98.30)</td>
<td>(103.12)</td>
<td>(108.20)</td>
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Hydraulic Pump/Motor Division
Otsego, MI 49078
Fixed Displacement Gear Pumps

Technical Information

Dimensions — 4 Bolt Mounting
(With "L" Back Cover For Tank Mounting)

Millimeter equivalents for inch dimensions are shown in (**)

Clockwise Rotation and "A" Shaft Shown
(Pump mounting flange opposite side of back cover centerline for CCW rotation.)

<table>
<thead>
<tr>
<th>&quot;A&quot; Dimensions: Inches (mm)</th>
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<td>4.14</td>
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<td>(105.16)</td>
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</table>

"R" Tang-end Shaft Option — For Use With 4 Bolt Mounting

Primarily used to direct couple to electric motor drives.

For additional information – call your local Parker Fluidpower Motion & Control Distributor.
Fixed Displacement Gear Pumps
Series D

Technical Information

Dimensions — Accessories For ‘‘L’’ Back Cover Pump

Millimeter equivalents for inch dimensions are shown in (**) 

Sub-Plate for Supply, Return and Gage Ports — 
Kit No. 735555K

Sub-Plate For Mounting (NFPA D01) Directional Control Valve — 
Kit No. 825602K

Tanks (Hydraulic Reservoir)

2-Quart Capacity Tank — Kit No. 715631 
“B” Dimension 4.67 (118.62) inches

4-Quart Capacity Tank — Kit No. 715632
“B” Dimension 10.17 (258.32) inches

6-Quart Capacity Tank — Kit No. 735560
“B” Dimension 14.17 (359.92) inches

Note: Kit includes: (1) sub-plate, (4) mounting bolts, (3) O-rings, (1) plug.

Note: Kit includes: (1) sub-plate, (4) mounting bolts, (3) O-rings, (1) plug.

Note: Kit includes: (1) reservoir assembly, (1) suction strainer, (1) filler cap.

Hydraulic Pump/Motor Division
Otsego, MI 49078