Gerotor® Pumps
Single and Double

0.3 to 43 gpm (1.1 to 163 l/min)
to 2000 psi (140 bar)
Fixed Delivery
Design Features
Gerotor hydraulic pumps are simple, positive displacement units. .................................. 1

Specifications and Performance
Ten sizes of B, H and O pumps operate singly or paired in one assembly. They function at speeds to 3600 rpm and deliver from .3 to 43 gpm at pressures to 2000 psi .......................... 2

Single Pumps
Most of the single pumps may be combined with double-end shafts, reversible operation features, counterclockwise rotation and adaptations for fire resistant fluids ......................... 6

Double Pumps
Gerotor pumps may be combined into a double pump driven by a common shaft to offer compactness and reduced application costs ....................................................... 10

Accessories
A low pressure 'D' pump may be mounted to series 'H' pumps to furnish lubrication or pilot pressure. And valve panels for two system operation or for two separate circuits use provide integrated unloading and relief ..................... 14

Model Code
In ordering, customers tailor pumps to the volume, pressure and other requirements of each application .......................................................... 14

Gerotor is a trademark of Double A Products Co., a subsidiary of Brown & Sharpe Manufacturing Company.
design features

Low Maintenance
Viton shaft seals are compatible with most hydraulic fluids. No other seals are used. Thus, leak possibility is greatly reduced. All but B series Gerotors use journal bearings with bronze and Teflon wear surfaces. B series use needle bearings.

Tolerant of Contaminents
Due to the design of the pump elements, filtration (although still important) is not as critical as in other pump designs.

Fire Resistant Fluids Compatible
Gerotor pumps accept phosphate ester fluids without seal change. Double A Gerotors are compatible with low lubricity fluids up to 60% water and 40% lubricating medium.

High Efficiencies
Gerotors offer high volumetric efficiency because of close manufacturing tolerances and fluid tight contact between the moving elements.

Quiet, Uniform Delivery
Porting is designed to reduce noise level and give maximum smoothness of flow.

The Gerotor Principle
Gerotors, known for their low cost-to-horsepower ratio and extraordinary dependability, feature simple design. They provide smooth, continuous fluid flow from inlet to outlet without reciprocating parts... the only moving parts are the gears themselves.

Pump elements consist of an internal and external gear, one within the other. The inner gear is keyed to the shaft and has one less tooth than the outer gear. Each tooth of the inner gear is in constant sliding, fluid tight contact with the outer gear as they revolve.

Spaces between rotating teeth increase to take in fluid during the first half of each turn. They decrease in the last half to force fluid into the discharge port. With one more tooth, the outer gear turns slower than the inner.
specifications and performance

<table>
<thead>
<tr>
<th></th>
<th>Fixed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output</td>
<td>See performance curves</td>
</tr>
<tr>
<td>Maximum Pressures</td>
<td>See performance curves</td>
</tr>
<tr>
<td>Minimum Recommended Inlet Pressure</td>
<td>5&quot; Hg Vacuum</td>
</tr>
<tr>
<td>Recommended Filtration</td>
<td>System absolute – 25 Micron Inlet – 149 Micron</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>60° to 140°F</td>
</tr>
<tr>
<td>Viscosity Range</td>
<td>80 – 600 SSU</td>
</tr>
<tr>
<td>Speeds—</td>
<td></td>
</tr>
<tr>
<td>Minimum (all pumps)</td>
<td>400 rpm</td>
</tr>
<tr>
<td>Maximum</td>
<td></td>
</tr>
<tr>
<td>'B' Pump</td>
<td>3600 rpm</td>
</tr>
<tr>
<td>'H' Pump (H-12)</td>
<td>1800 rpm</td>
</tr>
<tr>
<td>'O' Pump (O-40)</td>
<td>1200 rpm</td>
</tr>
<tr>
<td>Shaft Rotation</td>
<td>Clockwise or counterclockwise as viewed from shaft end</td>
</tr>
<tr>
<td>Mounting Position</td>
<td>Optional, but shaft cannot transmit axial or radial loads</td>
</tr>
</tbody>
</table>

PUMP RATINGS
FOR SYNTHETIC FLUIDS

<table>
<thead>
<tr>
<th>Models</th>
<th>H-3, H-5 H-8</th>
<th>H-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water/Oil Emulsions 60/40 HF-B</td>
<td>Contineus PSI</td>
<td>1000</td>
</tr>
<tr>
<td>Intermittent PSI</td>
<td>2000</td>
<td>1600</td>
</tr>
<tr>
<td>RPM</td>
<td>1800*</td>
<td>1800</td>
</tr>
<tr>
<td>Phosphate Ester HF-C</td>
<td>Contineus PSI</td>
<td>2000</td>
</tr>
<tr>
<td>Intermittent PSI</td>
<td>2000</td>
<td>1600</td>
</tr>
<tr>
<td>RPM</td>
<td>1800</td>
<td>1200</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Models</th>
<th>0-20</th>
<th>0-30</th>
<th>0-40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water/Oil Emulsions 60/40 HF-B</td>
<td>Contineus PSI</td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td>Intermittent PSI</td>
<td>1500</td>
<td>1500</td>
<td>1500</td>
</tr>
<tr>
<td>RPM</td>
<td>1800*</td>
<td>1200</td>
<td></td>
</tr>
<tr>
<td>Phosphate Ester HF-D</td>
<td>Contineus PSI</td>
<td>1500</td>
<td>1500</td>
</tr>
<tr>
<td>Intermittent PSI</td>
<td>1500</td>
<td>1500</td>
<td>1500</td>
</tr>
<tr>
<td>RPM</td>
<td>1800*</td>
<td>1200</td>
<td></td>
</tr>
</tbody>
</table>

*Operation at this speed is usually satisfactory with optimum suction conditions.
**Consult fluid manufacturer for applications which may exceed 1000 psi continuous pressure.
***Pump suction conditions are critical.
Pump data based on hydraulic fluid at 120°F with a viscosity of 190 SSU. Inlet pressure 5 inches Hg vacuum.

NOTE: Broken lines indicate intermittent operation up to 6 seconds duration maximum. 90% of pump operation must be within maximum rated pressure.
Pump data based on hydraulic fluid at 120°F with a viscosity of 190 SSU. Inlet pressure 5 inches Hg vacuum.

NOTE: Broken lines indicate intermittent operation up to 6 seconds duration maximum. 90% of pump operation must be within maximum rated pressure.
O SERIES

1200 RPM

1800 RPM

Pump data based on hydraulic fluid at 120°F with a viscosity of 190 SSU, inlet pressure 5 inches Hg vacuum.

NOTE: Broken lines indicate intermittent operation up to 6 seconds duration maximum. 90% of pump operation must be within maximum rated pressure.
Double A offers three series of heavy duty Gerotor hydraulic pumps — Series B, Series H, and Series O. All these pumps can be furnished with optional thru shafts for driving auxiliary equipment.

Standard internally drained B and H series pumps can be easily converted in the field to reverse shaft rotation if required. The O pump cannot be changed in the field because of its construction.

An external drain option is available on both B and Gerotor pumps.

**NOTE:** Clockwise or counterclockwise rotation is available with external drain models which have drain plugs at both positions. Inlet pressures over 15 psi also requires use of external drain arrangement (option 30 and 40).

<table>
<thead>
<tr>
<th>THRU SHAFT</th>
<th>STANDARD SHAFT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B SERIES</strong></td>
<td></td>
</tr>
<tr>
<td><img src="image1" alt="B Series Diagram" /></td>
<td><img src="image2" alt="B Series Diagram" /></td>
</tr>
<tr>
<td><img src="image3" alt="B Series Diagram" /></td>
<td><img src="image4" alt="B Series Diagram" /></td>
</tr>
<tr>
<td><strong>H SERIES</strong></td>
<td></td>
</tr>
<tr>
<td><img src="image5" alt="H Series Diagram" /></td>
<td><img src="image6" alt="H Series Diagram" /></td>
</tr>
<tr>
<td><img src="image7" alt="H Series Diagram" /></td>
<td><img src="image8" alt="H Series Diagram" /></td>
</tr>
<tr>
<td><strong>O SERIES</strong></td>
<td></td>
</tr>
<tr>
<td><img src="image9" alt="O Series Diagram" /></td>
<td><img src="image10" alt="O Series Diagram" /></td>
</tr>
<tr>
<td><img src="image11" alt="O Series Diagram" /></td>
<td><img src="image12" alt="O Series Diagram" /></td>
</tr>
</tbody>
</table>

‘O’ SERIES PUMPS CANNOT BE FIELD CONVERTED FOR SHAFT ROTATION.
Nominal pump sizes: .4, .75, 1.5 gpm
Port sizes: Inlet and discharge 3/8" NPTF
External drain (optional): 1/8" NPTF

pilot mounting

External drain models only 1/8 NPTF conn. to tank without restriction

1/2 NPTF port outlet - clockwise rotation
inlet - counterclockwise rotation
(as viewed from shaft end)

1/2 NPTF port inlet - clockwise rotation
outlet - counterclockwise rotation
(as viewed from shaft end)

base and flange mounting

Elongated holes 11.2 wide x 14.2 long
4 - holes

No. 3 Woodruff Key .125 x .50

Approximate Weight

<table>
<thead>
<tr>
<th></th>
<th>LB</th>
<th>KG</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUMP</td>
<td>6.5</td>
<td>2.95</td>
</tr>
<tr>
<td>FLANGE MOUNT</td>
<td>2.5</td>
<td>1.1</td>
</tr>
<tr>
<td>BASE MOUNT</td>
<td>3.0</td>
<td>1.4</td>
</tr>
</tbody>
</table>

P550

P551
H SERIES

Nominal pump sizes: 3, 5, 8, 12 gpm
Port sizes: Inlet and discharge 1" NPTF
External drain (optional): 1/4" NPTF

pilot mounting

Approximate Weights

<table>
<thead>
<tr>
<th></th>
<th>LB</th>
<th>KG</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUMP</td>
<td>25.5</td>
<td>11.6</td>
</tr>
<tr>
<td>FLANGE</td>
<td>3.0</td>
<td>1.4</td>
</tr>
<tr>
<td>MOUNT</td>
<td>4.0</td>
<td>1.8</td>
</tr>
</tbody>
</table>

base and flange mounting

Elongated holes:
11.2 (1.44) wide
6 holes

11.9 (0.47)
50.6 (2.00)
36.6 (1.44)
108.0 (4.25)

14.2 (0.55) R
4 places
11.2 (0.44) Dia.
4 holes
0 SERIES

Nominal pump sizes: 20, 30, 40 gpm
Port sizes: Inlet 1½” NPTF
Discharge 1½” NPTF

pilot mounting

Approximate Weight

<table>
<thead>
<tr>
<th>PUMP</th>
<th>LB</th>
<th>KG</th>
</tr>
</thead>
<tbody>
<tr>
<td>020/030</td>
<td>52</td>
<td>23.6</td>
</tr>
<tr>
<td>040</td>
<td>60</td>
<td>27.3</td>
</tr>
<tr>
<td>FLANGE MOUNT</td>
<td>12</td>
<td>5.5</td>
</tr>
<tr>
<td>BASE MOUNT</td>
<td>15</td>
<td>6.8</td>
</tr>
</tbody>
</table>

base and flange mounting

P556

P557

Dia. Hole for Mtg.
6 Places on 7.375 Dia. B.C.
Gerotor double pumps are comprised of two single pumps assembled as one. Each pump section contains a Gerotor driven by a common shaft (B-B series) or by two shafts which are coupled (H-B, H-H and O-H series).

B-B and O-H series pumps are provided with two intake and two discharge ports located opposite each other. Flow direction is determined in the same manner as in single pumps. Flow direction and shaft rotation can be reversed in pumps of the B-B series in the same way as the B series. (Drain plugs in each section must be relocated in internal drain models).

H-B and H-H series pumps consist of two sections and a center body containing the ports. Pump sections share a common intake port and discharge through two ports located on the opposite side. (In the H-B series, ports and passages contained in the B section are plugged). Service literature can be obtained from Double A for reversing shaft rotation and port location. Installation is the same as for single pumps. In addition, pump deliveries may be combined by the use of manifolds or piping without affecting the pressure rating of either section. If not combined, separate pressure controls are required for each circuit.

<table>
<thead>
<tr>
<th>THRU SHAFT</th>
<th>STANDARD SHAFT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B-B SERIES</strong></td>
<td><strong>H-B and H-H SERIES</strong></td>
</tr>
<tr>
<td>Thru shaft is not available for this double pump.</td>
<td>(Thru shaft is not available for H-B series)</td>
</tr>
</tbody>
</table>

| **O-H SERIES** | SEE SERVICE LITERATURE TO CHANGE SHAFT ROTATION. |
| **O' SERIES PUMPS CANNOT BE FIELD CONVERTED FOR SHAFT ROTATION.** | |
double pumps continued

B-B SERIES

Nominal pump sizes: 4, .75, 1.5 gpm
Port sizes: Inlet and discharge ½" NPTF
External drain: 1/8" NPTF

pilot mounting

External Drain Models
Only ½'' NPTF (Opposite Side) Connect to Tank
Without Restriction

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Dim. &quot;X&quot;</th>
<th>Dim. &quot;Y&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>B4 B.4</td>
<td>190 (7.44)</td>
<td>66.8 (2.63)</td>
</tr>
<tr>
<td>B.75 B.75</td>
<td>198.4 (7.81)</td>
<td>71.3 (2.81)</td>
</tr>
<tr>
<td>B1.5 B1.5</td>
<td>216 (8.50)</td>
<td>80.3 (3.16)</td>
</tr>
<tr>
<td>B.75 B.4</td>
<td>193.8 (7.63)</td>
<td>71.3 (2.81)</td>
</tr>
<tr>
<td>B1.5 B.4</td>
<td>202.4 (7.97)</td>
<td>80.3 (3.16)</td>
</tr>
<tr>
<td>B1.5 B.75</td>
<td>207.3 (8.16)</td>
<td>80.3 (3.16)</td>
</tr>
</tbody>
</table>

base and flange mounting

Elongated holes
11.2 long
4 holes
12.7 (.50)
**H-B AND H-H SERIES**

Nominal pump sizes:  
- **B Section 1.5 gpm**  
- **H Sections 3, 5, 8, 12 gpm**

Port sizes:  
- **Inlet 1¼” NPTF**  
- **Discharge ¾” NPTF**  
- **External drain ¼” NPTF**

**pilot mounting**

**base and flange mounting**

Approximate Weight

<table>
<thead>
<tr>
<th>Description</th>
<th>LB.</th>
<th>KG.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUMP H-H</td>
<td>50</td>
<td>22.7</td>
</tr>
<tr>
<td>PUMP H-B</td>
<td>50</td>
<td>22.7</td>
</tr>
<tr>
<td>FLANGE MOUNT</td>
<td>20</td>
<td>9.1</td>
</tr>
<tr>
<td>BASE MOUNT</td>
<td>17</td>
<td>7.7</td>
</tr>
</tbody>
</table>

Model Code  
Symbol “B”  
Model Code  
Symbol “F”

**Dia. Hole for Mounting**  
5 Places on 7.375 Dia. B.C.
O-H SERIES

Nominal pump sizes: H Sections 3, 5, 8, 12 gpm
O Sections 20, 30, 40 gpm
Port sizes: Inlet H - 1" O - 1½" NPTF
Clockwise Rotation
Discharge H - 1, O - 1¾" NPTF
Clockwise Rotation

pilot mounting

1" NPT Outlet

IN

OUT

PUMP
72
32.7

FLANGE MOUNT
12
6.8

BASE MOUNT
15
5.5

Approximate Weight

LB.
KG.

base and flange mounting

14.2 (.56) Dia. Hole for Mtg. 4 Places

1.9 (.07) Dia. Hole for Mtg. 6 Places on 7.375 Dia. B.C.
**Model Code**

**Single Pumps**

- **Model Series**
  - B: Single Pump
  - H: Single Pump
  - O: Single Pump

- **Pump Size (nom.)**
  - B: 4 H: 3 O: 20
  - B: 75 H: 5 O: 30
  - B: 8 H: 8 O: 40
  - B: 12

- **Mounting**
  - B - Base
  - F - Flange
  - P - Pilot

- **Rotation**
  - No Symbol: Clockwise
  - C: Counterclockwise

- **Shaft and Drain**
  - 10: Standard Drain
  - 20: Thru Shaft
  - 30: External Drain
  - 40: Thru Shaft with External Drain

- **Design Series**
  - Subject to change.
  - Installation dimensions remain as shown for design Nos. 1 thru 9.

- **Auxiliary Pump**
  - No Symbol: Not used
  - D1.0: 1 gpm

---

**Mounting Kits**

<table>
<thead>
<tr>
<th>Mounting</th>
<th>Single Pumps</th>
<th>Double Pumps</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>P550</td>
<td>P550</td>
</tr>
<tr>
<td>H</td>
<td>P554</td>
<td>P554</td>
</tr>
<tr>
<td>O</td>
<td>P556</td>
<td>P556</td>
</tr>
</tbody>
</table>

---

**Double Pumps**

- **Model Series**
  - H8: Double Pump
  - HH: Double Pump
  - OH: Double Pump

- **Pump Size (nom.)**
  - B: 4 H: 3 O: 20
  - B: 75 H: 5 O: 30
  - B: 8 H: 8 O: 40
  - B: 12

- **Mounting**
  - B - Base
  - F - Flange
  - P - Pilot

- **Rotation**
  - No Symbol: Clockwise
  - C: Counterclockwise

- **Shaft and Drain**
  - 10: Standard Shaft
  - 20: Thru Shaft
  - 30: External Drain
  - 40: Thru Shaft with External Drain

- **Design Series**
  - Subject to change.
  - Installation dimensions remain as shown for design Nos. 1 thru 9.

- **Auxiliary Pump**
  - No Symbol: Not used
  - D1.0: 1 gpm

---

**Accessories**

**'D' Pump**

A 'D' series pump for pressures to 200 psig may be attached to the head end of H, H-H, and OH pumps to supply auxiliary requirements such as lubrication or pilot pressure is available and is rated at 1.0 gpm.

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**Dimensions**

- Length: 3 1/8
- Diameter: 4 1/8
- Ports: 1/4 NPTF

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**Double A**

Continuous Flow & Sump Pumps

Manchester, Michigan 48158

(313) 428-8312

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