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This information was removed from:
*Series 45 Axial Piston Open Circuit Pumps Technical Information Manual* 520L0519
Rev E November 2006

For more information regarding the Series 45 product line refer to the current version of 520L0519.
Technical Information  Series 45 G Frame Pumps

Design

Series 45 Frame G pumps have a dual servo piston design with a cradle-type swashplate set in polymer-coated journal bearings. The bias piston increases swashplate angle. The displacement piston decreases swashplate angle. At equal pressure, the larger diameter displacement piston overpowers the bias piston. Nine reciprocating pistons displace fluid from the pump inlet to the pump outlet as the cylinder block rotates on the pump input shaft. The block spring holds the piston slippers to the swashplate via the slipper retainer. The cylinder block rides on a bi-metal valve plate optimized for high volumetric efficiency and low noise. Tapered roller bearings support the input shaft and a viton lip-seal protects against shaft leaks.

An adjustable one spool (PC only, not shown) or two spool (LS) control senses system pressure and load pressure (LS controls). The control ports system pressure to the displacement piston to control pump output flow.

Frame G cross section

![Frame G cross section diagram]

- LS control (attached to endcap)
- LS spool
- PC spool
- LS adjustment
- PC adjustment
- Displacement piston
- Swashplate
- Cylinder block
- Valve plate
- Cylinder block spring
- Tapered roller bearing
- Slipper retainer
- Shaft seal
- Input shaft
- Slipper
- Piston
- Bias piston
- Bias spring
- Bias piston guide
Specifications

For general operating parameters, including fluid viscosity, temperature, and inlet and case pressures, see page 13. For system design parameters, including installation, filtration, reservoir, and line velocities, see page 15.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Unit</th>
<th>Model</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Displacement</td>
<td>cm³ [in³]</td>
<td>G74B</td>
<td>74 [4.52]</td>
<td>90 [5.49]</td>
</tr>
<tr>
<td>Flow at rated speed (theoretical)</td>
<td>l/min [US gal/min]</td>
<td>G74B</td>
<td>177.6 [46.9]</td>
<td>198 [52.3]</td>
</tr>
<tr>
<td>Input torque at maximum displacement (theoretical)</td>
<td>N•m/bar [lbf•in/1000 psi]</td>
<td>G74B</td>
<td>1.178 [719]</td>
<td>1.432 [874]</td>
</tr>
<tr>
<td>Mass moment of inertia of internal rotating components</td>
<td>kg•m² [slug•ft²]</td>
<td>G74B</td>
<td>0.00630 [0.00465]</td>
<td>0.00650 [0.00480]</td>
</tr>
<tr>
<td>Weight</td>
<td>Axial ports</td>
<td>kg [lb]</td>
<td>29 [63]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Radial ports</td>
<td></td>
<td>36 [80]</td>
<td></td>
</tr>
<tr>
<td>Rotation</td>
<td></td>
<td>Clockwise, Counterclockwise</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mounting</td>
<td></td>
<td>SAE-C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auxiliary mounting (See page 74)</td>
<td></td>
<td>SAE-A, SAE-B, SAE-BB, SAE-C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>System ports (type)</td>
<td></td>
<td>4-bolt split flange</td>
<td></td>
<td></td>
</tr>
<tr>
<td>System ports (location)</td>
<td></td>
<td>Axial, Radial</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control types (See page 71)</td>
<td></td>
<td>PC, Remote PC, LS, LS with internal bleed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shafts (See page 73)</td>
<td></td>
<td>Splined</td>
<td>14 tooth, 17 tooth</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Straight</td>
<td>Ø 31.75 mm [1.25 in]</td>
<td></td>
</tr>
<tr>
<td>Displacement limiters (See page 75)</td>
<td></td>
<td>Optional, adjustable</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ratings

For definitions of pressure and speed ratings, see page 14. For more information on external shaft loads, see page 16; mounting flange loads, see page 17.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Units</th>
<th>Model</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Input speed¹</td>
<td>min⁻¹ (rpm)</td>
<td>G74B</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>continuous</td>
<td></td>
<td>G90C</td>
<td>2400</td>
<td>2200</td>
</tr>
<tr>
<td>maximum</td>
<td></td>
<td></td>
<td>2800</td>
<td>2600</td>
</tr>
<tr>
<td>continuous</td>
<td></td>
<td>G90C</td>
<td>400 [5800]</td>
<td>350 [5075]</td>
</tr>
<tr>
<td>maximum</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>External shaft loads</td>
<td>N•m [lbf•in]</td>
<td>G74B</td>
<td>300 [2655]</td>
<td></td>
</tr>
<tr>
<td>External moment (Mₑ)</td>
<td></td>
<td>G90C</td>
<td>2900 [650]</td>
<td></td>
</tr>
<tr>
<td>Thrust in (Tₜₑ), out (Tₒₑ)</td>
<td>N [lbf]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bearing life</td>
<td>Bₜ hours</td>
<td>G74B</td>
<td>41 383</td>
<td>19 847</td>
</tr>
<tr>
<td>at 140 bar [2030 psi]</td>
<td></td>
<td>G90C</td>
<td>9048</td>
<td>4339</td>
</tr>
<tr>
<td>at 210 bar [3045 psi]</td>
<td></td>
<td></td>
<td>4062</td>
<td>1948</td>
</tr>
<tr>
<td>at 260 bar [3770 psi]</td>
<td></td>
<td></td>
<td>2101</td>
<td>—</td>
</tr>
<tr>
<td>at 310 bar [4495 psi]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mounting flange load moments</td>
<td>N•m [lbf•in]</td>
<td>G74B</td>
<td>1580 [14 000]</td>
<td></td>
</tr>
<tr>
<td>Vibratory (continuous)</td>
<td></td>
<td>G90C</td>
<td>5650 [50 000]</td>
<td></td>
</tr>
<tr>
<td>Shock (max)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Input speeds are valid at 1 bar absolute [0 in Hg vac] inlet pressure. See inlet pressure vs. speed charts.

For more information on noise levels, see page 19.

Sound levels²

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1800 min⁻¹(rpm)</td>
<td>1800 min⁻¹(rpm)</td>
<td>1800 min⁻¹(rpm)</td>
</tr>
<tr>
<td>Model</td>
<td>Rated speed</td>
<td>Rated speed</td>
<td>Rated speed</td>
</tr>
<tr>
<td>G74B</td>
<td>75</td>
<td>78</td>
<td>74</td>
</tr>
<tr>
<td>C90C</td>
<td>74</td>
<td>76</td>
<td>75</td>
</tr>
</tbody>
</table>

2. Sound data was collected in a semi-anechoic chamber. Values have been adjusted (-3 dB) to reflect anechoic levels.
Performance
G74B

Flow and power data valid at 49°C [120°F] and viscosity of 17.8 mm²/sec [88 SUS].

Flow vs. speed

The chart on the right shows allowable inlet pressure and speed at various displacements. Greater speeds and lower inlet pressures are possible at reduced displacement. Operating outside of acceptable limits reduces pump life.
**Performance**

**G90C**

Flow and power data valid at 49°C [120°F] and viscosity of 17.8 mm²/sec [88 SUS].

The chart on the right shows allowable inlet pressure and speed at various displacements. Greater speeds and lower inlet pressures are possible at reduced displacement. Operating outside of acceptable limits reduces pump life.
## Technical Information Series 45 G Frame Pumps

### Order Code

<table>
<thead>
<tr>
<th>R</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>GR</td>
<td>G Frame, variable displacement open circuit pump</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>S</th>
<th>Rotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>Left hand (counterclockwise)</td>
</tr>
<tr>
<td>R</td>
<td>Right hand (clockwise)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>P</th>
<th>Displacement and pressure rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>074B</td>
<td>074 cm³/rev [4.52 in³/rev], 310 bar [4495 psi] continuous working pressure</td>
</tr>
<tr>
<td>090C</td>
<td>090 cm³/rev [5.49 in³/rev], 260 bar [3770 psi] continuous working pressure</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C</th>
<th>Control type</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC</td>
<td>Pressure compensated control 100-280 bar [1450-4060 psi]</td>
</tr>
<tr>
<td>BC</td>
<td>Pressure compensated control 290-310 bar [4205-4495 psi]</td>
</tr>
<tr>
<td>RP</td>
<td>Remote pressure compensated control 100-280 bar [1450-4060 psi]</td>
</tr>
<tr>
<td>BP</td>
<td>Remote pressure compensated control 290-310 bar [4205-4495 psi]</td>
</tr>
<tr>
<td>LS</td>
<td>Load sensing / pressure compensating control 100-280 bar [1450-4060 psi]</td>
</tr>
<tr>
<td>BS</td>
<td>Load sensing / pressure compensating control 290-310 bar [4205-4495 psi]</td>
</tr>
<tr>
<td>LB</td>
<td>Load sensing / pressure compensating control with internal bleed orifice 100-280 bar [1450-4060 psi]</td>
</tr>
<tr>
<td>BB</td>
<td>Load sensing / pressure compensating control with internal bleed orifice 290-310 bar [4205-4495 psi]</td>
</tr>
</tbody>
</table>

### D | PC setting (2 digit code, 10 bar increments)

<table>
<thead>
<tr>
<th>Example</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>10–31</td>
<td>100 to 310 bar [1450 to 4495 psi] (074B)</td>
</tr>
<tr>
<td>10–26</td>
<td>100 to 260 bar [1450 to 3770 psi] (090C)</td>
</tr>
</tbody>
</table>

### E | Load sensing setting (2 digit code, 1 bar increments)

<table>
<thead>
<tr>
<th>Example</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>20–30</td>
<td>10 to 40 bar [145 to 435 psi]</td>
</tr>
<tr>
<td>NN</td>
<td>Not applicable (use with PC controls)</td>
</tr>
</tbody>
</table>

### F | Not used

| NN | Not applicable |
**Technical Information Series 45 G Frame Pumps**

### Order Code (continued)

<table>
<thead>
<tr>
<th>R</th>
<th>S</th>
<th>P</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>M</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**G**  
*Pilot orifice*

- N: Standard

**H**  
*Gain orifice*

- 3: Standard

**J1**  
*Input shaft*

- S1: 14 tooth, 12/24 pitch (ANSI B92.1 1970 - Class 5)
- S2: 17 tooth, 12/24 pitch (ANSI B92.1 1970 - Class 5)
- K4: Ø 31.75 mm [1.25 in], straight keyed

**J2**  
*Auxiliary mounting flange*

- N: None
- A: SAE-A, 9-tooth coupling
- T: SAE-A, 11-tooth coupling
- B: SAE-B, 13-tooth coupling
- V: SAE-BB, 15-tooth coupling
- C: SAE-C, 14-tooth coupling

**J3**  
*System port size and location*

<table>
<thead>
<tr>
<th>Code</th>
<th>Location</th>
<th>Port type</th>
<th>Inlet size</th>
<th>Outlet size</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Radial</td>
<td>4-bolt split-flange</td>
<td>2 in.</td>
<td>1 in.</td>
</tr>
<tr>
<td>4</td>
<td>Axial</td>
<td>4-bolt split-flange</td>
<td>2 in.</td>
<td>1 in.</td>
</tr>
</tbody>
</table>

**K1**  
*Shaft seal*

- A: Single lip seal, viton

**K2**  
*Mounting flange and housing port style*

- 1: SAE-C 4-bolt, SAE O-ring boss housing ports

**K3**  
*Not used*

- N: Not applicable

**L**  
*Displacement limiter*

- NNN: None
- AAA: Adjustable, factory set at max angle (074B)
- CAA: Adjustable, factory set at max angle (090C)

**M**  
*Special hardware*

- NNN: None

**N**  
*Special features*

- NNN: None
Technical Information
Series 45 G Frame Pumps

Controls

Pressure compensated control (PC)

Specifications

PC control setting range

<table>
<thead>
<tr>
<th>Model</th>
<th>bar</th>
<th>psi</th>
</tr>
</thead>
<tbody>
<tr>
<td>G74B</td>
<td>100–310</td>
<td>1450–4495</td>
</tr>
<tr>
<td>G90C</td>
<td>100–260</td>
<td>1450–3770</td>
</tr>
</tbody>
</table>

Response/recovery times*

<table>
<thead>
<tr>
<th>(ms)</th>
<th>Response</th>
<th>Recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>G74B</td>
<td>35</td>
<td>130</td>
</tr>
<tr>
<td>G90C</td>
<td>40</td>
<td>140</td>
</tr>
</tbody>
</table>

* For definitions, see page 9.

Schematic diagram

PC schematic

Legend

B = Outlet
S = Inlet
L1, L2 = Case drain
M2 = System pressure gauge port
M4 = Servo pressure gauge port

Remote PC control (RP)

Specifications

PC control setting range

<table>
<thead>
<tr>
<th>Model</th>
<th>bar</th>
<th>psi</th>
</tr>
</thead>
<tbody>
<tr>
<td>G74B</td>
<td>100–310</td>
<td>1450–4495</td>
</tr>
<tr>
<td>G90C</td>
<td>100–260</td>
<td>1450–3770</td>
</tr>
</tbody>
</table>

Response/recovery times*

<table>
<thead>
<tr>
<th>(ms)</th>
<th>Response</th>
<th>Recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>G74B</td>
<td>35</td>
<td>130</td>
</tr>
<tr>
<td>G90C</td>
<td>40</td>
<td>140</td>
</tr>
</tbody>
</table>

* For definitions, see page 10.

Schematic diagram

Remote PC schematic

Legend

B = Outlet
S = Inlet
L1, L2 = Case drain
M2 = System pressure gauge port
M4 = Servo pressure gauge port
X = Remote PC port
Controls (continued)

Load sensing control (LS)

Specifications

<table>
<thead>
<tr>
<th>PC setting range</th>
<th>Response/recovery times*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>bar</td>
</tr>
<tr>
<td>G74B</td>
<td>100–310</td>
</tr>
<tr>
<td>G90C</td>
<td>100–260</td>
</tr>
</tbody>
</table>

* For definitions, see page 1

Schematic diagram

LS Schematic

Load sensing control with internal bleed orifice (LB)

Specifications

<table>
<thead>
<tr>
<th>PC setting range</th>
<th>Response/recovery times*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>bar</td>
</tr>
<tr>
<td>G74B</td>
<td>100–310</td>
</tr>
<tr>
<td>G90C</td>
<td>100–260</td>
</tr>
</tbody>
</table>

* For definitions, see page 1

Schematic diagram

LB Schematic
Input Shafts

Shaft data

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Maximum torque rating¹ N•m [lbf•in]</th>
<th>Drawing</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>14 tooth spline 12/24 pitch (ANSI B92.1 1970 - Class S)</td>
<td>734 [6500]</td>
<td>![Diagram S1]</td>
</tr>
<tr>
<td>S2</td>
<td>17 tooth spline 12/24 pitch (ANSI B92.1 1970 - Class S)</td>
<td>1017 [9000]</td>
<td>![Diagram S2]</td>
</tr>
<tr>
<td>K4</td>
<td>Ø 31.75 mm [1.25 in] Straight keyed</td>
<td>734 [6495]</td>
<td>![Diagram K4]</td>
</tr>
</tbody>
</table>

1. See *Input shaft torque ratings*, page 17 for an explanation of maximum torque.
### Auxiliary Mounting Pads

**SAE-A auxiliary mounting pad**

**Dimensions**

See page 18 for mating pump pilot and spline dimensions.

**Specifications**

<table>
<thead>
<tr>
<th>Coupling</th>
<th>9-tooth</th>
<th>11-tooth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spline minimum engagement</td>
<td>13.5 mm [0.53 in]</td>
<td>15 mm [0.59 in]</td>
</tr>
<tr>
<td>Maximum torque</td>
<td>107 N-m [950 lbf-in]</td>
<td>147 N-m [1300 lbf-in]</td>
</tr>
<tr>
<td>Dimension A</td>
<td>21.1 mm [0.83 in]</td>
<td>16.1 mm [0.63 in]</td>
</tr>
</tbody>
</table>

**SAE-B auxiliary mounting pad**

**Dimensions**

See page 18 for mating pump pilot and spline dimensions.

**Specifications**

<table>
<thead>
<tr>
<th>Coupling</th>
<th>13-tooth</th>
<th>15-tooth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spline minimum engagement</td>
<td>14.2 mm [0.56 in]</td>
<td>18.9 mm [0.74 in]</td>
</tr>
<tr>
<td>Maximum torque</td>
<td>249 N-m [2200 lbf-in]</td>
<td>339 N-m [3000 lbf-in]</td>
</tr>
<tr>
<td>Dimension A</td>
<td>20.7 mm [0.81 in]</td>
<td>12.7 mm [0.5 in]</td>
</tr>
</tbody>
</table>
1. See Input shaft torque ratings, page 19 for definitions of continuous and maximum torque.
Installation Drawings

Running cover

Adjusted displacement limiter

Dimensions

Approximate center of gravity

Mounting flange

264.2 [10.4]

128 [5.04]

6 [0.24]

208.74 MAX [8.218]

102.84 [4.05]

P106079E

P104073E
Installation Drawings (continued)

Axial ported endcap

Clockwise rotation:
- LS signal Port X
- Ø50.8 (2) System port S (Inlet port)
- 207 Bar [3000 PSI]
- Split flange boss
- Per ISO 6162
- SAE J518 (CODE 61)
- with 1/2-13 UNC x 27 [0.866] Min THD

Counter-clockwise rotation:
- LS signal Port X
- Ø25.4 (1)
- System port B (Outlet port)
- 345 Bar [5000 PSI]
- Split flange boss
- Per ISO 6162
- SAE J518 (CODE 61)
- with 3/8-16 UNC x 27 [0.866] Min THD

Case drain port L1
- Per ISO 11926-1
- SAE J1926/1
- 7/8-14

LS signal port X
- System ports S and B
- Per ISO 11926-1
- SAE J1926/1
- 7/16-20 UNF

System pressure gage port M2
- Per ISO 11926-1
- SAE J1926/1
- 7/16-20 UNF

Case drain port L2
- Per ISO 11926-1
- SAE J1926/1
- 7/8-14

R1 MAX
- [0.04]

7
- [0.28]

Ø126.975 ± 0.025
- [4.999 ± 0.001]

System ports S and B
- Per ISO 11926-1
- SAE J1926/1
- 7/16-20 UNF

15.64 X
- [0.062]

77.77 [3.062]

52.37 [2.062]

26.19 [1.031]

45 [1.77]

40 [1.57]

42.88 [1.688]

21.3 [0.84]

60.7 [2.39]

LS signal Port X
Installation Drawings (continued)

Axial ported endcap (continued)

- PC pressure adjustment
- LS standby pressure adjustment
- Approximate center of gravity
- Cw, Ccw
- Ø14.3 [0.56]
- 114.5 [4.51]
- 57.25 [2.25]
- 102.84 [4.05]
- 128.5 [5.06]
- 96 [3.78]
- Case drain port L1
- Servo pressure gage port M4
  - Per ISO 11926-1
  - SAE J1926/1
  - 7/16 -20 UNF
- LS signal port x
  - Alternate
  - Per ISO 11926-1
  - SAE J1926/1
  - 7/16 -20 UNF

- Ccw
- Installation Drawings (continued)
- Per ISO 11926-1
- SAE J1926/1
- 7/16 -20 UNF
- Approximate center of gravity
- Axial ported endcap (continued)

P104 074e
Installation Drawings (continued)

Radial ported endcap

Clockwise rotation

21.3 [0.84]

LS SIGNAL PORT X

ALTERNATE

60.7 [2.39]

LS SIGNAL PORT X

SYSTEM PORT S

(inlet)

System Port B

(outlet)

82 [3.23]

75 [2.95]

Lo25.4 (1)

System port B

(outlet port)

345 Bar [5000 PSI]

Split flange boss

Per ISO 6162

SAE J518

(COD6.1)

with 3/8-16 UNC

x 27 [0.866]

MIN THD

Case drain port L1

Per ISO 11926-1

SAE J1926/1

7/8 -14

256.04

[10.08]

LS signal port X

Per ISO 11926-1

SAE J1926/1

7/16 -20 UNF

212.74

[8.38]

102.84

[4.05]

72.74

[2.86]

45

[1.77]

15.64X

[0.62]

6 [0.24]

96 [3.78]

Case drain

Port L2

R1 MAX

[0.04]

Case drain port L2

Per ISO 11926-1

SAE J1926/1

7/8 -14

256.04

[10.08]

LS signal port X

Per ISO 11926-1

SAE J1926/1

7/16 -20 UNF

128.5 [5.06]

265.76

[10.463]

121.76

[4.79]

22.74

[0.886]

MIN THD

System pressure gage port M2

Per ISO 11926-1

SAE J1926/1

7/16 -20 UNF

75 [2.95]

Outlet

82 [3.23]

Inlet

75 [2.95]

Outlet

82 [3.23]

Inlet

P106 175E

[Third-angle projection mm[in]]

Counterclockwise rotation

102.84

[4.05]
Radial ported endcap (continued)

Technical Information Series 45 G Frame Pumps

Installation Drawings

PC pressure Adjustment

Approximate center of gravity

LS standby Pressure adjustment

Ø14.3 [0.56]

114.5 [4.51]

57.25 [2.25]

57.25 [2.25]

LS signal port X
Alternate
Per ISO 11926-1
SAE J1926/1
7/16 -20 UNF

102.84 [4.05]

128.5 [5.06]

Case drain port L1

96 [3.78]

114.5 [4.51]

102.84 [4.05]

215.74 [8.49]

Servo pressure gage port M4
Per ISO 11926-1
SAE J1926/1
7/16 -20 UNF

Ø50.8 [2]
System port S
(Inlet port)
207 Bar [3000 PSI]
Split flange boss
Per ISO 6162
SAE J518
(Code 61)
with 1/2-13 UNC
x 27 [1.063]
MIN THD

Approximate center of gravity

LS standb y
Pressure adjustmen t

Case drain port L1

96 [3.78]
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