### CHARACTERISTICS

**Motor Inertia**: 0.05 kg.m²

<table>
<thead>
<tr>
<th>Cam Type</th>
<th>Theoretical Torque at 100 bar (Nm)</th>
<th>Max. Power Preferred (kW [HP])</th>
<th>Max. Power Non-PREFERRED (kW [HP])</th>
<th>Max. Speed (tr/min [RPM])</th>
<th>Max. Pressure (bar [PSI])</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cams with equal lobes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MS11</td>
<td>385 [22.3]</td>
<td>50 [67]</td>
<td>33 [44]</td>
<td>25 [34]</td>
<td>200</td>
</tr>
<tr>
<td>1 1 2</td>
<td>574 [35.0]</td>
<td>1 824 [927]</td>
<td>1 824 [927]</td>
<td>1 824 [927]</td>
<td>190</td>
</tr>
<tr>
<td>2 1 2</td>
<td>630 [38.4]</td>
<td>2 002 [1 018]</td>
<td>2 002 [1 018]</td>
<td>2 002 [1 018]</td>
<td>185</td>
</tr>
<tr>
<td>MSE1</td>
<td>524 [32.0]</td>
<td>1 666 [847]</td>
<td>1 666 [847]</td>
<td>1 666 [847]</td>
<td>180</td>
</tr>
<tr>
<td>0 1 2</td>
<td>702 [42.8]</td>
<td>2 232 [1 135]</td>
<td>2 232 [1 135]</td>
<td>2 232 [1 135]</td>
<td>170</td>
</tr>
<tr>
<td>1 1 2</td>
<td>768 [46.8]</td>
<td>2 442 [1 242]</td>
<td>2 442 [1 242]</td>
<td>2 442 [1 242]</td>
<td>170</td>
</tr>
<tr>
<td>2 1 2</td>
<td>844 [51.4]</td>
<td>2 682 [1 364]</td>
<td>2 682 [1 364]</td>
<td>2 682 [1 364]</td>
<td>165</td>
</tr>
<tr>
<td><strong>Cams with unequal lobes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* See option "M" for higher speed.

1. First displacement
2. Second displacement
CONTENT

MODULARITY
MODEL CODE

WHEEL MOTOR
Dimensions for standard (1110) 1-displacement motor
Dimensions for standard (1110) 2-displacement motor
Dimensions for standard (1110) Twin-Lock™
Support types
Studs
Load curves
Support types (continued)
Load curves (continued)

SHAFT MOTOR
Dimensions for standard (2A50) 1-displacement motor
Dimensions for standard (2A50) 2-displacement motor
Support types
Splined coupling
Load curves

VALVING SYSTEMS AND HYDROBASES
Dimensions for 1-displacement valving
Cylinder block splines
Exchange
Hydraulic connections

BRAKES
Rear brake
Drum brake (315 x 80)

OPTIONS

19/03/2019
ARITY

Modularity and Model code

Brakes

Valving systems

Hydrobases

Modular hydraulic motors MS11 - MSE11

Options

Wheel motor

Shaft motor

Valving systems and hydrobases

Brake

POCLAIN HYDRAULICS
Modular hydraulic motors MS11 - MSE11

Model Code

Without mounting

With mounting

Displacement

Exchange Twin-Lock™

Displacement

No transmission cover

ISO 6162 flanges

ISO 9974-1 connections

ISO 6162 flanges

ISO 1179-1 connections

ISO 11926-1 connections

ISO 1179-1 connections

ISO 9974-1 connections

ISO 6162 flanges

ISO 11926-1 connections

ISO 11926-1 connections

First displacement

Second displacement

1-displacement valving

2-displacement &
Twin-Lock™ valving
(Clockwise)

2-displacement &
Twin-Lock™ valving
(Counterclockwise)

D Ratio 2
E Ratio <2
F Ratio >2
G Ratio 2
H Ratio <2
J Ratio >2

Without brake

Simple plate

Reinforced plate

Brake

Screwed environmental cover

Clipped environmental cover

Cams with equal lobes

Cams with unequal lobes

cm³/tr [cu.in/rev.]

MS11

MS11

MSE11

MSE11

837 [51,0]
841 [25,5]
472 [28,8]
524 [32,0]
574 [35,0]
630 [38,4]
632 [38,5]
702 [42,8]
768 [46,8]
844 [51,4]
629 [38,4]
419 [25,6]
843 [51,4]
561 [34,2]
730 [44,5]
365 [22,3]
943 [57,5]
947 [28,8]
1048 [63,9]
1147 [70,0]
1259 [76,8]
1263 [77,0]
1404 [85,6]
1536 [93,7]
1687 [102,9]
1048 [63,9]
1404 [85,6]
Methodology:
This document is intended for manufacturers of machines that incorporate Poclain Hydraulics products. It describes the technical characteristics of Poclain Hydraulics products and specifies installation conditions that will ensure optimum operation.

This document includes important comments concerning safety. They are indicated in the following way:

- Safety comment.

This document also includes essential operating instructions for the product and general information. These are indicated in the following way:

- Essential instructions.
- General information.
- Information on the model number.
- Weight of component without oil.
- Volume of oil.
- Units.
- Tightening torque.
- Screws.
- Information intended for Poclain-Hydraulics personnel.

The views in this document are created using metric standards.
The dimensional data is given in mm and in inches (inches are given in brackets in italic).

Dimensions for standard (1110) 1-displacement motor

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>86 kg [189 lb]</th>
<th>112 kg [246 lb]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>2 L [120 cu.in]</td>
<td>1.5 L [90 cu.in]</td>
</tr>
</tbody>
</table>

The views in this document are created using metric standards.
The dimensional data is given in mm and in inches (inches are given in brackets in italic).
WHEEL MOTOR

Dimensions for standard (1110) 2-displacement motor

<table>
<thead>
<tr>
<th></th>
<th>F12</th>
<th>T12</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>76.7 [3.02]</td>
<td>92.5 [3.64]</td>
</tr>
<tr>
<td>C</td>
<td>Ø247.0 [9.72]</td>
<td>Ø273.6 [10.77]</td>
</tr>
<tr>
<td>D</td>
<td>26.0 [1.02]</td>
<td>25.0 [0.96]</td>
</tr>
</tbody>
</table>

Also see 'Valving systems and hydrobases' section (thumbnail opposite).
**Support types**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Wheel rim mounting</th>
<th>L [mm [in]]</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>S</td>
<td>E</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C</th>
<th>A [m [in]]</th>
<th>B [m [in]]</th>
<th>C [m [in]]</th>
<th>D [m [in]]</th>
<th>E [m [in]]</th>
<th>N [m [m [in]]]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ø 175.7 [6.92 dia.]</td>
<td>Ø 225 [8.86 dia.]</td>
<td>Ø 276 [10.87 dia.]</td>
<td>218.6 [8.61]</td>
<td>Ø 291 [11.46 dia.]</td>
<td>Ø 24 [0.94 dia.]</td>
</tr>
<tr>
<td>4</td>
<td>5 x M22x1.5</td>
<td>14 [0.55]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Ø 175.7 [6.92 dia.]</td>
<td>Ø 225 [8.86 dia.]</td>
<td>Ø 276 [10.87 dia.]</td>
<td>218.6 [8.61]</td>
<td>Ø 291 [11.46 dia.]</td>
<td>Ø 22 [0.87 dia.]</td>
</tr>
<tr>
<td>4</td>
<td>10 x M20x1.5</td>
<td>14 [0.55]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Ø 160.7 [6.33 dia.]</td>
<td>Ø 205.0 [8.07 dia.]</td>
<td>Ø 250 [9.84 dia.]</td>
<td>174.4 [6.87]</td>
<td>Ø 289.5 [11.40 dia.]</td>
<td>Ø 20 [0.79 dia.]</td>
</tr>
<tr>
<td>4</td>
<td>12 x M18x1.5</td>
<td>15 [0.59]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Ø 175.7 [6.92 dia.]</td>
<td>Ø 225 [8.86 dia.]</td>
<td>Ø 276 [10.87 dia.]</td>
<td>219.6 [8.65]</td>
<td>Ø 291 [11.46 dia.]</td>
<td>Ø 22 [0.87 dia.]</td>
</tr>
<tr>
<td>4</td>
<td>10 x M20x1.5</td>
<td>21 [0.83]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Ø 220.7 [8.69 dia.]</td>
<td>Ø 275 [10.83 dia.]</td>
<td>Ø 314 [12.36 dia.]</td>
<td>218.6 [8.61]</td>
<td>Ø 291 [11.46 dia.]</td>
<td>Ø 22 [0.87 dia.]</td>
</tr>
<tr>
<td>4</td>
<td>8 x M20x1.5</td>
<td>14 [0.55]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The supports in gray must not be assembled with an MSE hydrobase.

**Studs**

<table>
<thead>
<tr>
<th></th>
<th>P [mm [in]]</th>
<th>C min. [mm [in]]</th>
<th>C max. [mm [in]]</th>
<th>D [mm [in]]</th>
<th>Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Various studs</td>
<td>M18 x 1.5</td>
<td>55 [2.17]</td>
<td>17 [0.67]</td>
<td>23 [0.91]</td>
<td>12.9</td>
</tr>
<tr>
<td></td>
<td>M20 x 1.5</td>
<td>60 [2.36]</td>
<td>14 [0.55]</td>
<td>25 [0.98]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M22 x 1.5</td>
<td>65 [2.56]</td>
<td>24 [0.94]</td>
<td>26 [1.02]</td>
<td></td>
</tr>
<tr>
<td>Screws</td>
<td>M12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

You can accumulate more than one optional part. Consult your Poclain Hydraulics sales engineer.
### Load curves

#### Permissible radial loads

**Test conditions:**

- **Static:** 0 tr/min [0 RPM] 0 bar [0 PSI]
- **Dynamic:** 0 tr/min [0 RPM], code 0 displacement, without axial load at max. torque

#### Service life of bearings

**Test conditions:**

- **L:** Millions B10 revolutions at 150 bars (average pressure), with 25 cSt fluid, code 0 displacement, without axial load.

---

<table>
<thead>
<tr>
<th>Model</th>
<th>Load Curves</th>
<th>Service Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>11010</td>
<td><img src="load_curve_11010.png" alt="Load Curve" /></td>
<td><img src="service_life_11010.png" alt="Service Life" /></td>
</tr>
<tr>
<td>1210</td>
<td><img src="load_curve_1210.png" alt="Load Curve" /></td>
<td><img src="service_life_1210.png" alt="Service Life" /></td>
</tr>
<tr>
<td>1310</td>
<td><img src="load_curve_1310.png" alt="Load Curve" /></td>
<td><img src="service_life_1310.png" alt="Service Life" /></td>
</tr>
<tr>
<td>1510</td>
<td><img src="load_curve_1510.png" alt="Load Curve" /></td>
<td><img src="service_life_1510.png" alt="Service Life" /></td>
</tr>
<tr>
<td>1710</td>
<td><img src="load_curve_1710.png" alt="Load Curve" /></td>
<td><img src="service_life_1710.png" alt="Service Life" /></td>
</tr>
</tbody>
</table>

---

The service life of the components is influenced by the pressure. You must check that the combination of forces applied (Axial load / Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components comply with the application's specifications. For an accurate calculation, consult your Poclain Hydraulics application engineer.
## Support types (continued)

<table>
<thead>
<tr>
<th></th>
<th>C</th>
<th>D</th>
<th>F</th>
<th>P</th>
<th>S</th>
<th>Wheel rim mountings</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 G 1 0</td>
<td>Ø 175.7 [6.92 dia.]</td>
<td>Ø 225 [8.86 dia.]</td>
<td>Ø 270 [10.63 dia.]</td>
<td>284.6 [11.20]</td>
<td>Ø 291 [11.46 dia.]</td>
<td>Ø 24 [0.94 dia.]</td>
<td>10 x M22x1.5</td>
</tr>
<tr>
<td>1 Q 4 0</td>
<td>Ø 175.7 [6.92 dia.]</td>
<td>Ø 225 [8.86 dia.]</td>
<td>Ø 354 [13.94 dia.]</td>
<td>294.6 [11.60]</td>
<td></td>
<td></td>
<td>10 x M22x1.5</td>
</tr>
<tr>
<td>1 P 3 0</td>
<td>Ø 175.7 [6.92 dia.]</td>
<td>Ø 225 [8.86 dia.]</td>
<td>Ø 354 [13.94 dia.]</td>
<td>294.6 [11.60]</td>
<td></td>
<td></td>
<td>10 x M22x10</td>
</tr>
</tbody>
</table>

Also see “Brake” section (thumbnail opposite).
Load curves (continued)

Permissible radial loads

Test conditions:

Static: 0 tr/min [0 RPM] 0 bar [0 PSI]

Dynamic: 0 tr/min [0 RPM], code 0 displacement, without axial load at max. torque

Service life of bearings

Test conditions:

L: Millions B10 revolutions at 150 bars (average pressure), with 25 cSt fluid, code 0 displacement, without axial load.

The service life of the components is influenced by the pressure. You must check that the combination of forces applied (Axial load / Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application’s specifications. For an accurate calculation, consult your Poclain Hydraulics application engineer.
SHAFT MOTOR

Dimensions for standard (2A50) 1-displacement motor

<table>
<thead>
<tr>
<th></th>
<th>88 kg [194 lb]</th>
<th>114 kg [251 lb]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 L [120 cu.in]</td>
<td>1.5 L [90 cu.in]</td>
</tr>
</tbody>
</table>

Dimensions for standard (2A50) 2-displacement motor

<table>
<thead>
<tr>
<th></th>
<th>88 kg [194 lb]</th>
<th>114 kg [251 lb]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 L [120 cu.in]</td>
<td>1.5 L [90 cu.in]</td>
</tr>
</tbody>
</table>

C

<table>
<thead>
<tr>
<th>F12</th>
<th>T12</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td></td>
</tr>
<tr>
<td>76.7 [3.02]</td>
<td>92.5 [3.64]</td>
</tr>
<tr>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Ø247.0 [9.72]</td>
<td>Ø273.6 [10.77]</td>
</tr>
<tr>
<td>D</td>
<td></td>
</tr>
<tr>
<td>26.0 [1.02]</td>
<td>25.0 [0.96]</td>
</tr>
</tbody>
</table>

Also see 'Valving systems and hydrobases' section (thumbnail opposite).
Support types

<table>
<thead>
<tr>
<th>M</th>
<th>S</th>
<th>1</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>S</td>
<td>E</td>
<td>1</td>
</tr>
</tbody>
</table>

**DIN 5480 splines**
- **Nominal Ø**: 80 [3.15]
- **Module**: 3
- **Z**: 25

<table>
<thead>
<tr>
<th>2</th>
<th>A</th>
<th>5</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

**NF E22-141 splines**
- **Nominal Ø**: 75 [2.95]
- **Module**: 2.5
- **Z**: 28

<table>
<thead>
<tr>
<th>2</th>
<th>A</th>
<th>1</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Also see ‘Valving systems and hydrobases’ section (thumbnail opposite).

**Splined coupling**

N : Nominal Ø.
Mo : Module.
Z : Number of teeth.

**Standard DIN 5480**
- Pressure angle 30°.
- Centering on flanks.
- Slide fit (7H quality).

**Standard NF E22-141**
- Pressure angle 20°.
- Centering on flanks.
- Slide fit (7H quality).

<table>
<thead>
<tr>
<th>C</th>
<th>Ø G</th>
<th>H</th>
<th>Ø J</th>
<th>K</th>
<th>N</th>
<th>Mo</th>
<th>Z</th>
<th>Offset</th>
<th>Ø C</th>
<th>Ø V</th>
<th>Y</th>
<th>Tolerance</th>
</tr>
</thead>
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<tr>
<td>2</td>
<td>A</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>5</td>
<td>0</td>
<td>2</td>
<td>+103 / 0</td>
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<tr>
<td>2</td>
<td>A</td>
<td>5</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>5</td>
<td>0</td>
<td>2</td>
<td>+71 / 0</td>
</tr>
</tbody>
</table>

General tolerances : ± 0.25 [±0.0098].
Material: Ex: 42CrMo4.
Hardening treatment to obtain R = 800 to 900 N/mm² [R = 116 030 to 130 533 PSI].
Load curves

Permissible radial loads

Max. permissible loads: 0 tr/min [0 RPM]; 0 bar [0 PSI]

Continuous permissible loads:
> 0 tr/min [> 0 RPM]; 275 bar [3 988 PSI].

Service life of bearings

Test conditions:

L: Millions B10 revolutions at 150 bars (average pressure), with 25 cSt fluid, code 0 displacement, without axial load.

The service life of the components is influenced by the pressure. You must check that the combination of forces applied (Axial load / Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components comply with the application's specifications. For an accurate calculation, consult your Poclain Hydraulics application engineer.

<table>
<thead>
<tr>
<th>Code</th>
<th>Load (kN)</th>
<th>Load (lbf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2A10</td>
<td>96.75 [3,81]</td>
<td>101.25 [3,99]</td>
</tr>
</tbody>
</table>

Options

Valving systems and hydrobases

Wheel motor

Shaft motor

Modularity and Model code

Brake

19/03/2019
VALVING SYSTEMS AND HYDROBASES

Dimensions for 1-displacement valving

Cylinder block splines
(as per standard NF E22-141)

You are advised to have the installation validated by your Poclain Hydraulics application engineer before using the hydraulic unit in an application.

We must provide you with a detailed plan of the interface for any hydraulic unit use, consult your Poclain Hydraulics sales engineer.
Modular hydraulic motors MS11 - MSE11

POCLAIN HYDRAULICS

Dimensions for 2-displacement valving

<table>
<thead>
<tr>
<th>2 1</th>
<th>44 kg [97 lb]</th>
<th>67,5 kg [148,5 lb]</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 2</td>
<td>48,9 kg [107,6 lb]</td>
<td>72,4 kg [159,3 lb]</td>
</tr>
</tbody>
</table>

| 0,75 L [45 cu.in] | 0,92 L [55 cu.in] |

Dimensions for Twin-Lock™ valving

<table>
<thead>
<tr>
<th>2 E</th>
<th>48,9 kg [107,6 lb]</th>
<th>72,4 kg [159,3 lb]</th>
</tr>
</thead>
</table>

| 0,75 L [45 cu.in] | 0,92 L [55 cu.in] |

<table>
<thead>
<tr>
<th>F12</th>
<th>T12</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>76,7 [3,02]</td>
</tr>
<tr>
<td>C</td>
<td>9247,0 [9,72]</td>
</tr>
<tr>
<td>D</td>
<td>26,0 [1,02]</td>
</tr>
</tbody>
</table>
Modular hydraulic motors MS11 - MSE11

Valving systems and hydrobases

POCLAIN HYDRAULICS

Dimensions for 1-displacement valving with built-in exchange

<table>
<thead>
<tr>
<th>Model code</th>
<th>F12</th>
<th>T12</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>76.7 [3.02]</td>
<td>92.5 [3.64]</td>
</tr>
<tr>
<td>C</td>
<td>Ø247.0 [9.72]</td>
<td>Ø273.6 [10.77]</td>
</tr>
<tr>
<td>D</td>
<td>26.0 [1.02]</td>
<td>25.0 [0.96]</td>
</tr>
</tbody>
</table>

Options

Modularity and Model code

Wheel motor

Shaft motor

Brake

386 kg [850 lb]
386 kg [850 lb]
388 kg [850 lb]
388 kg [850 lb]
361 kg [800 lb]
361 kg [800 lb]
363 kg [800 lb]
363 kg [800 lb]
358 kg [785 lb]
358 kg [785 lb]
358 kg [785 lb]
358 kg [785 lb]
355 kg [780 lb]
355 kg [780 lb]
355 kg [780 lb]
355 kg [780 lb]
352 kg [775 lb]
352 kg [775 lb]
352 kg [775 lb]
352 kg [775 lb]
348 kg [770 lb]
348 kg [770 lb]
348 kg [770 lb]
348 kg [770 lb]
345 kg [765 lb]
345 kg [765 lb]
345 kg [765 lb]
345 kg [765 lb]
342 kg [760 lb]
342 kg [760 lb]
342 kg [760 lb]
342 kg [760 lb]
339 kg [755 lb]
339 kg [755 lb]
339 kg [755 lb]
339 kg [755 lb]
336 kg [750 lb]
336 kg [750 lb]
336 kg [750 lb]
336 kg [750 lb]
333 kg [745 lb]
333 kg [745 lb]
333 kg [745 lb]
333 kg [745 lb]
330 kg [740 lb]
330 kg [740 lb]
330 kg [740 lb]
330 kg [740 lb]
327 kg [735 lb]
327 kg [735 lb]
327 kg [735 lb]
327 kg [735 lb]
324 kg [730 lb]
324 kg [730 lb]
324 kg [730 lb]
324 kg [730 lb]
321 kg [725 lb]
321 kg [725 lb]
321 kg [725 lb]
321 kg [725 lb]
318 kg [720 lb]
318 kg [720 lb]
318 kg [720 lb]
318 kg [720 lb]
Dimensions for 2-displacement valving or Twin-Lock™ valving

Exchange

When a coding request is made, you must specify information on the threshold of the selector and the valve.

Selector spool

<table>
<thead>
<tr>
<th>Selector threshold bar [PSI]</th>
<th>Opening pressure of selector bar [PSI]</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 [116]</td>
<td>9.9 ± 1.2 [144 ± 17]</td>
</tr>
</tbody>
</table>

Fitted valve

<table>
<thead>
<tr>
<th>P1 bar [PSI]</th>
<th>Q2 L/min [GPM]</th>
<th>P2 bar [PSI]</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 [261]</td>
<td>15 [3.9]</td>
<td>21 [305]</td>
</tr>
</tbody>
</table>

\[\Delta P \text{ bar [PSI]}\]

\[P_3 \text{ bar [PSI]}\]

\[P_2 \text{ bar [PSI]}\]

\[Q_2 \text{ L/min [GPM]}\]
Chassis mountings

Take care over the immediate environment of the connections.

<table>
<thead>
<tr>
<th></th>
<th>ØM (1)</th>
<th>ØU</th>
<th>S</th>
<th>Ra V</th>
<th>Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheel motor</td>
<td>285</td>
<td>335</td>
<td>0,2</td>
<td>12,5µm</td>
<td>8,8</td>
</tr>
<tr>
<td></td>
<td>[11,22]</td>
<td>[13,19]</td>
<td>[0,008]</td>
<td>[0,49µin]</td>
<td></td>
</tr>
<tr>
<td>Shaft motor</td>
<td>280</td>
<td>335</td>
<td>0,2</td>
<td>12,5µm</td>
<td>8,8</td>
</tr>
<tr>
<td></td>
<td>[11,02]</td>
<td>[13,19]</td>
<td>[0,008]</td>
<td>[0,49µin]</td>
<td></td>
</tr>
</tbody>
</table>

(1) +0,3 [+0,012] 
+0,2 [+0,008]

* : Min. values for torque and load to be transmitted.
Hydraulic connections

<table>
<thead>
<tr>
<th>Old standards</th>
<th>Standards</th>
<th>Power supply</th>
<th>Case drain</th>
<th>Control of parking brake</th>
<th>Control of drum brake</th>
</tr>
</thead>
<tbody>
<tr>
<td>A SAE J514</td>
<td>ISO 11 926-1</td>
<td>1&quot;1/16-12 UNF</td>
<td>3/4&quot;-16 UNF</td>
<td>9/16&quot;-18 UNF</td>
<td>9/16&quot;-18 UNF</td>
</tr>
<tr>
<td>1 ISO 6 162</td>
<td>ISO 6 162</td>
<td>ISO 9 974-1</td>
<td>DN19 PN400</td>
<td>M18x1.5</td>
<td>M16x1.5</td>
</tr>
<tr>
<td>2 ISO 6 162</td>
<td>ISO 6 162</td>
<td>ISO 1 179-1</td>
<td>DN19 PN400</td>
<td>Ø21 [1/2&quot; dia.]</td>
<td>Ø17 [3/8&quot; dia.]</td>
</tr>
<tr>
<td>3 BSPP</td>
<td>ISO 1 179-1</td>
<td>Ø27 [3/4&quot; dia.]</td>
<td>Ø21 [1/2&quot; dia.]</td>
<td>Ø17 [3/8&quot; dia.]</td>
<td></td>
</tr>
<tr>
<td>4 NF E48 050</td>
<td>ISO 9 974-1</td>
<td>M27x2</td>
<td>M18x1.5</td>
<td>M16x1.5</td>
<td></td>
</tr>
<tr>
<td>5 DIN 3 852</td>
<td>ISO 9 974-1</td>
<td>M33x2</td>
<td>M18x1.5</td>
<td>M16x1.5</td>
<td></td>
</tr>
<tr>
<td>7 ISO 6 162</td>
<td>ISO 6 162</td>
<td>SAE J514</td>
<td>DN19 PN400</td>
<td>3/4&quot;-16 UNF</td>
<td>9/16&quot;-18 UNF</td>
</tr>
</tbody>
</table>

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<tr>
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<td>M18x1.5</td>
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<td></td>
</tr>
<tr>
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<td>ISO 6 162</td>
<td>SAE J514</td>
<td>DN19 PN400</td>
<td>3/4&quot;-16 UNF</td>
<td>9/16&quot;-18 UNF</td>
</tr>
</tbody>
</table>

To find the connections’ tightening torques, see the brochure “Installation guide” N° 801478197L.

You are strongly advised to use the fluids specified in brochure “Installation guide” N° 801478197L.

Do not put either a check valve or a poppet valve on the pilot lines (parking brake and displacement change) between the charge pump and the pilot valve. Do not use a piloting valve with integrated check valve.
Efficiency

**Overall efficiency**

Average values given for guidance for code 0 displacement after 100 hours of operation with HV46 hydraulic fluid at 50°C (122°F).

**Actual output torque**

For a precise calculation, consult your Poclain Hydraulics application engineer.
Rear brake

Brake principle
This is a multidisc brake which is activated by a lack of pressure. The spring exerts a force on the piston, which presses on the fixed and mobile discs, and immobilizes the shaft. The braking torque decreases in linear proportion to the brake release pressure.

Parking brake torque at 0 bars on housing (new brake) 11 840 Nm [8 730 lb.ft]
Dynamic emergency braking torque at 0 bars on housing (max. 10 uses of emergency brakes) 7 695 Nm [5 680 lb.ft]
Residual parking braking at 0 bars on housing * 8 880 Nm [6 550 lb.ft]
Min. brake release pressure 12 bar [174 PSI]
Max. brake release pressure 30 bar [435 PSI]
Oil capacity 170 cm³ [10.4 cu.in]
Volume for brake release 40 cm³ [2.4 cu.in]
Max. energy dissipation 123 699 J

* After emergency brake has been used

Do not run-in the multidisc brakes.

A functional check of the parking brake must be carried out each time it is used as an auxiliary brake (or emergency brake). For all vehicles capable of speeds over 25 km/h, please contact your Poclain Hydraulics.
Drum brake (315 x 80)
Diameter of brake pads: Ø 315 [12.4 dia.]
Width of friction surface: 80 [3.15]

Control
The drum brakes can be controlled hydraulically (service brake) and by a cable (mechanical control for parking brake).

Do not use hydraulic and mechanical brake controls simultaneously.

Brake release pressure vented.

When making an encoding request, you must indicate the following information:
- The material of the brake linings,
- The type of connection at the end of the parking brake control cable,
- Fill out the technical questionnaire for validation of the brake.
1 - Fluorinated elastomer seals
Nitrile seals marked in the figure below replaced by fluorinated elastomer seals.

2 - S - Q - 8 - Installed speed sensor or predisposition

<table>
<thead>
<tr>
<th>Designation</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>T4 speed sensor (without rotation direction)</td>
<td>2</td>
</tr>
<tr>
<td>TR speed sensor (digital rotation direction)</td>
<td>S</td>
</tr>
<tr>
<td>TD speed sensor (two phase shifted frequencies)</td>
<td>Q</td>
</tr>
<tr>
<td>Predisposition for speed sensor</td>
<td>8</td>
</tr>
</tbody>
</table>

Look at the "Mobile Electronic" N° A01889D technical catalogue for the sensor specifications and its connection.

To install the sensor, see the "Installation guide" brochure No. 801478197L.
3 - Brake environmental cover without plug
No plug or hole in the cover.
(see figure opposite)

5 - Drainage
Additional drain in the cover.

7 - Diamond™
Special treatment of the motor core which considerably increases its strength, making the motor much more tolerant to temporary instances of the operating conditions being exceeded.

9 - Double-centering valving cover
This option allows a motor to be installed from the front or the back.
A - Hollow shaft

Radial load x 0.75
No torque transmittable to the rear

B - Drain on the bearing support

ISO | B | C | D | F | a
---|---|---|---|---|---
| mm | mm | mm | mm | mm |
Shaft motor | M18 x 1.5 | 32.5 | 143 | 112 | 30°
Wheel motor | M18 x 1.5 | 32.5 | 143 | 112 | 30°

C - Abrasive environments (mechanical seal)

Certain environments can be very harmful. The mirror seal gives reinforced motor sealing.

Consult your Poclain Hydraulics sales engineer.

E - Reinforced sealing

Requires reinforced seals and, for an unbraked motor, a rear reinforced plate (R08 - 8 [0.314] thick, instead of 4 [0.157]).
G - Special wheel rim mounting
Enables certain combinations different from the standard mountings defined on pages 11 and 13.

H - High efficiency
Reinforced piston sealing to improve volumetric efficiency.

J - Treated shaft
Heat treatment on the indicated bearing radius and splines.

M - High speed
Under certain conditions, an increase in the maximum speed of 30% above the values indicated in the table on page 2 is possible.

T - Soft Shift™
Progressive displacement change (cushioned slide-valve)

Consult your Poclain Hydraulics sales engineer.
Modularity and Model code

Wheel motor

Shaft motor

Valving systems and hydrobases

Brake

Options

Modular hydraulic motors MS11 - MSE11

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