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 code.
- 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 between brackets and italic)
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**POCLAIN HYDRAULICS**

**Compact motors MK09**

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**MODEL CODE**

- **C**
- **D**
- **F**
- **P**
- **S**

- **MK09**
- **1**
- **F08**
- **110**

**Options**

- **ISO 9974-1 Connections**
- **ISO 11926-1 Connections**
- **Diamond™**
- **Predisposition for speed sensor**
- **Hollow shaft**
- **Speed sensor installed**
- **Rotating fixation**
- **Hollow shaft**

**Characteristics**

- Displacement
- **cm³/tr [cu.in/rev.]**
  - 8 667 [40.7]
  - 9 750 [45.7]
  - 0 833 [50.8]
  - 2* 1 000 [81.0]

- **: Comes with Diamond™ option**

**Options**

- **Multidisc brakes.**

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**03/12/2008**
**Compact motors MK09**

**POCLAIN HYDRAULICS**

**Motor Inertia**  0.3 kg.m²

<table>
<thead>
<tr>
<th>C</th>
<th>cm³/tr [cu.in/rev.]</th>
<th>Theoretical torque</th>
<th>Max. power</th>
<th>Max. speed</th>
<th>Max. pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>667 [40,7]</td>
<td>1 061 [539]</td>
<td>30 [40]</td>
<td>100</td>
<td>400 [5 802]</td>
</tr>
<tr>
<td>9</td>
<td>750 [45,7]</td>
<td>1 193 [606]</td>
<td></td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>833 [50,8]</td>
<td>1 324 [674]</td>
<td></td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>2*</td>
<td>1 000 [61,0]</td>
<td>1 590 [809]</td>
<td></td>
<td>65</td>
<td></td>
</tr>
</tbody>
</table>

* : Comes with Diamond™ option
CHARACTERISTICS

Dimensions for standard 1-displacement motor

<table>
<thead>
<tr>
<th>C</th>
<th>D</th>
<th>F</th>
<th>P</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Model code:** MK09
- **Weight:** 72 kg [158 lb]
- **Volume:** 1.00 L [60 cu.in]

Rotating fastening screw

| M16x2 | 12.9 | 355 [260] |

(*) The tightening torques are given for the indicated loads.

**Caution:**

The adaptation plates can be specified by the customer. Please consult your Poclain Hydraulics Applications Engineer.
Load curves

Permissible radial loads

<table>
<thead>
<tr>
<th>Test conditions:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Static: 0 tr/min [0 RPM] 0 bar [0 PSI]</td>
</tr>
<tr>
<td>Dynamic: 0 tr/min [0 RPM], code 0 displacement, without axial load at max. torque</td>
</tr>
</tbody>
</table>

Service life of bearings

<table>
<thead>
<tr>
<th>Test conditions:</th>
</tr>
</thead>
<tbody>
<tr>
<td>L: Millions B10 revolutions at 150 bars (average pressure), with 25 cSt fluid, code 0 displacement, without axial load.</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.

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

The starting torque is taken to be approximately 85% of the first value for available pressure. For a precise calculation, consult your Poclain Hydraulics application engineer.
Chassis mounting

<table>
<thead>
<tr>
<th>ØM (1) mm [in]</th>
<th>S mm [in]</th>
<th>Ra V μm [μin]</th>
<th>Class</th>
<th>N.m [lb.ft]</th>
</tr>
</thead>
<tbody>
<tr>
<td>182 [7,17]</td>
<td>0,2 [0,01]</td>
<td>12,5 [0,49]</td>
<td>8x M16 x2</td>
<td>12,9</td>
</tr>
</tbody>
</table>

(1) 0 0 - 0,046 [-0,0018]

Hydraulic connections

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.
Brakes

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

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parking brake torque with 0 bars in the housing (new brake)</td>
<td>6 050 N.m [4 460 lb.ft]</td>
</tr>
<tr>
<td>Emergency dynamic braking torque with 0 bars in the housing (gives a maximum of 10 emergency braking operations)</td>
<td>3 930 N.m [2 900 lb.ft]</td>
</tr>
<tr>
<td>Residual parking torque at 0 bars in the housing*</td>
<td>4 535 N.m [3 340 lb.ft]</td>
</tr>
<tr>
<td>Minimum brake release pressure</td>
<td>14 bar [203,1 PSI]</td>
</tr>
<tr>
<td>Maximum brake release pressure</td>
<td>30 bar [435,1 PSI]</td>
</tr>
<tr>
<td>Capacity</td>
<td>60 cm³ [3,7 cu.in]</td>
</tr>
<tr>
<td>Brake release capacity</td>
<td>25 cm³ [1,5 cu.in]</td>
</tr>
</tbody>
</table>

* After being used as emergency brake

Do not run in multidisc brakes.
**Options**

2 - 8 - Installed speed sensor or predisposition

**Designation**
- Speed sensor installed: C2
- Predisposition for speed sensor: C8

**Technical characteristics of the speed sensor**
- Supply voltage: 8 - 32 V
- Protect against false polarity
- Current consumption: 20 mA max.
- Type of output:
  - 1 push-pull square frequency signal
  - 1 push-pull direction signal
  - Maximum load current: 20 mA
  - Voltage at low state: < 1.5 V
  - Voltage at high state: > (power supply voltage - 3.5 V)
- Frequency range: 0 to 15 kHz
- Operating temperature: -40°C to +125°C [-40°F to 257°F]
- Protection rating: IP68
- Length of sensor (L): 44 [1.73]
- Number of pulses per revolution: 63

**Connection of sensor**

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**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.

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

To install the sensor, see the "Installation guide" brochure No. 801478197L.
A - Hollow shaft

Mounting bolt for high speed motor

<table>
<thead>
<tr>
<th>Classe</th>
<th>N.m</th>
<th>[lb.ft]</th>
</tr>
</thead>
<tbody>
<tr>
<td>M12 x 2</td>
<td>10.9</td>
<td>120 [89]</td>
</tr>
</tbody>
</table>
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