MG21
STEERABLE WHEEL MOTOR
### Steerable wheel motor MG21

**POCLAIN HYDRAULICS**

**Motor Inertia**

0.1 kg.m²

### Theoretical torque

<table>
<thead>
<tr>
<th>Cams with equal lobes</th>
<th>cm³/tr [cu.in/rev.]</th>
<th>cm³/tr [cu.in/rev.]</th>
<th>at 100 bar Nm</th>
<th>at 1000 PSI [lb-ft]</th>
<th>kW [HP]</th>
<th>preferred kW [HP]</th>
<th>non-preferred kW [HP]</th>
<th>Max. speed tr/min (RPM)</th>
<th>Max. pressure bar [PSI]</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>1 885 [115.0]</td>
<td>943 [57.5]</td>
<td>2 997 [1 524]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>2 096 [127.8]</td>
<td>1 048 [63.9]</td>
<td>3 333 [1 695]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>2 294 [139.9]</td>
<td>1 147 [70.0]</td>
<td>3 647 [1 855]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2 519 [153.6]</td>
<td>1 260 [76.8]</td>
<td>4 005 [2 037]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Cams with unequal lobes

| 1 048 [63.9] |

**First displacement**

**Second displacement**

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*Max. pressure available under certain condition of use. Consult your Poclain Hydraulics application engineer to check these conditions.*
CONTENT

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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. 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)
CHARACTERISTICS

Standard (1910) single displacement motor with built-in exchange

- 230 kg [506 lb]
- 1,00 L [60 cu.in]
When a coding request is made, you must specify information on the threshold of the selector and the valve.

The exchange flow rate indicated on the basis of the supply pressure (P = 50 bar [725 PSI]) is constant (Q = 5.5 l/min [1.45 GPM]).
Load curves

The given load curves correspond to the conditions specified below. For load curves corresponding to your specifications, contact a Poclain Hydraulics engineer.

Permissible radial loads

**Test conditions:**

**Static:**
- 150 bar [2,175 PSI], code 9 displacement
- Max. axial stress = 15% of Fr
- Load radius = 719 mm [28.31 in]

**Dynamic:**
- 450 bar [6,527 PSI], code 9 displacement
- Max. axial stress = 15% of Fr
- Load radius = 719 mm [28.31 in]

Service life of bearings

**Test conditions:**

L : Millions B10 revolutions at 150 bars (average pressure), with 25 cSt fluid, code 9 displacement, without axial load.

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.
Wheel rim mountings

<table>
<thead>
<tr>
<th>Classe</th>
<th>N.m</th>
<th>[lb.ft]</th>
</tr>
</thead>
<tbody>
<tr>
<td>8xM20x1.5</td>
<td>12,9</td>
<td>690 [509]</td>
</tr>
</tbody>
</table>

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

Chassis mounting

Take care over the immediate environment of the connections.

<table>
<thead>
<tr>
<th>A (1)</th>
<th>B (1)</th>
<th>2xØC (2)</th>
<th>E (3)</th>
<th>F max.</th>
<th>G (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>196.85 [7.75]</td>
<td>55 [2.17]</td>
<td>22.1 [0.87]</td>
<td>10.5 [0.41]</td>
<td>39 [1.54]</td>
<td>44.5 [1.75]</td>
</tr>
</tbody>
</table>

| 5xM20x2.5 | 12.9 | 690 [509] |

(1) + 0.2 [+0.0078]   (2) +0.023 [+0.0009]   (3) + 0.5 [+0.019]
- 0.2 [- 0.0078]   -0.0027 [- 0.0010]   - 0.5 [- 0.019]

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

Pins are used to take tangential stress.
POCLAIN HYDRAULICS

Steerable wheel motor MG21

Steering attachment

![Diagram of steering attachment](image)

Options Characteristics Model code

<table>
<thead>
<tr>
<th>A (1) mm [in]</th>
<th>B (1) mm [in]</th>
<th>C (1) mm [in]</th>
<th>3x ØD (2) mm [in]</th>
<th>E mm [in]</th>
<th>F mm [in]</th>
<th>G mm [in]</th>
</tr>
</thead>
<tbody>
<tr>
<td>70 [2.76]</td>
<td>41 [1.61]</td>
<td>150 [5.91]</td>
<td>16.5 [0.65]</td>
<td>27 [1.06]</td>
<td>21 [0.83]</td>
<td>35 [1.38]</td>
</tr>
</tbody>
</table>

| 8x M20x2.5 | 12.9 | 690 [509] |

<table>
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<tr>
<td>8x M20x2.5</td>
<td>12.9</td>
<td>690 [509]</td>
</tr>
</tbody>
</table>

(1) + 0.2 [+0.0078] | (2) + 0.25 [+0.0098]
- 0.2 [-0.0078] | - 0.1 [-0.0039]

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

- Pins are used to take tangential stress.

Steering angle

![Diagram of steering angle](image)

<table>
<thead>
<tr>
<th>α Max.</th>
<th>β Min.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 80°</td>
<td>40°</td>
</tr>
<tr>
<td>2 74°</td>
<td>37°</td>
</tr>
</tbody>
</table>
Hydraulic connections

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

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

### Standards

<table>
<thead>
<tr>
<th></th>
<th>Power supply</th>
<th>Case drain</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>ISO 11926-1</td>
<td>R,L</td>
</tr>
<tr>
<td>B</td>
<td>ISO 6149-1</td>
<td>A,R</td>
</tr>
</tbody>
</table>

### Motor Types

- **Single displacement motor**
  - R,L: 1” 1/16, 12 UNF
- **Double displacement motor**
  - A,R: 1” 1/16, 12 UNF
  - Case drain: M27 x 2

- **Case drain**
  - R: M18 x 1.5
  - A: 3/4”

OPTIONS

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

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

Designation

<table>
<thead>
<tr>
<th>Designation</th>
<th>C</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>

Max. length $Y = 13.5$

Standard number of pulses per revolution $= 56$

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.

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.

E - Reinforced sealing

Requires reinforcement of shaft bearings.
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