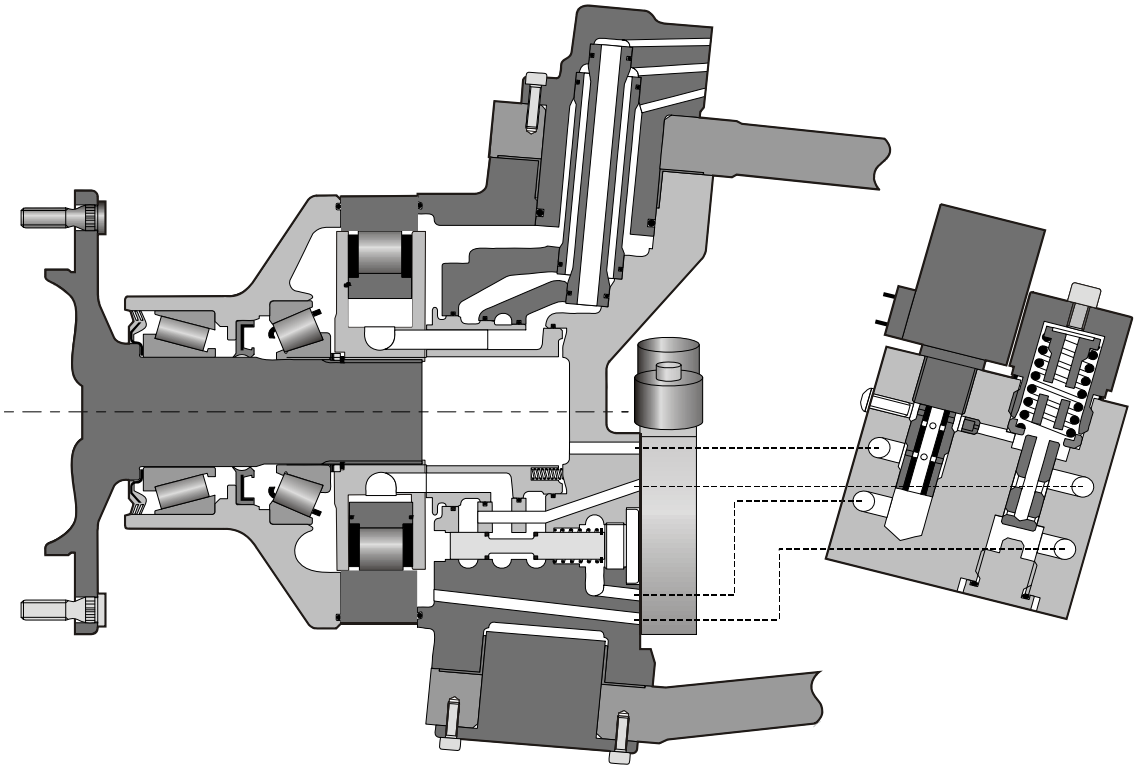
MG11 - MGE11

STEERABLE WHEEL MOTOR

TECHNICAL CATALOG

POCLAIN Hydraulics



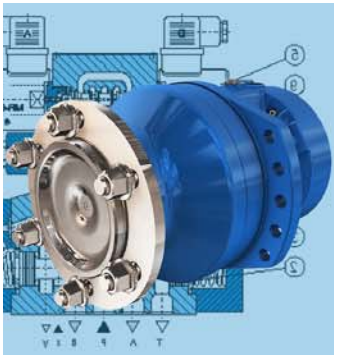
Motor Inertia : 0.05 kg.m²

			❶ cm³/tr *[cu.in/rev.]*	❷ cm³/tr *[cu.in/rev.]*	Theoretical torque ❶ at 100 bar Nm	*at 1000 PSI [lb.ft]*	Max.power ❶ kW *[HP]*	❷ preferred kW *[HP]*	❷ non-preferred kW *[HP]*	Max. speed ❶ tr/min	❷ *[RPM]*	Max. pressure bar *[PSI]*
Cams with equal lobes	MG11	**7**	730 *[44.5]*	365 *[22.3]*	1,161	*[590]*	50 *[67]*	33 *[44]*	25 *[34]*	200		450 *[6,530]*
		8	837 *[51.0]*	419 *[25.5]*	1,331	*[677]*				195		
		9	943 *[57.5]*	472 *[28.8]*	1,499	*[762]*				190		
		0	1,048 *[63.9]*	524 *[32.0]*	1,666	*[847]*				185		
		1	1,147 *[70.0]*	574 *[35.0]*	1,824	*[927]*				180		
		2	1,259 *[76.8]*	630 *[38.4]*	2,002	*[1,018]*				170	175	
	MGE11	**9**	1,263 *[77.0]*	632 *[38.5]*	2,008	*[1,021]*				170	190	400 *[5,800]*
		0	1,404 *[85.6]*	702 *[42.8]*	2,232	*[1,135]*				155	185	
		1	1,536 *[93.7]*	768 *[46.8]*	2,442	*[1,242]*				140	180	
		2	1,687 *[102.9]*	844 *[51.4]*	2,682	*[1,364]*				130	165	
Cams with unequal lobes	MG11	**A**	1,048 *[63.9]*	629 *[38.4]* / 419 *[25.6]*	1,666	*[847]*	50 *[67]*	33 *[44]*	25 *[34]*	170		450 *[6,530]*
	MGE11	**A**	1,404 *[85.6]*	843 *[51.4]* / 561 *[34.2]*	2,232	*[1,135]*				120		400 *[5,800]*

❶ **First displacement**

❷ **Second displacement**

CONTENT





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:

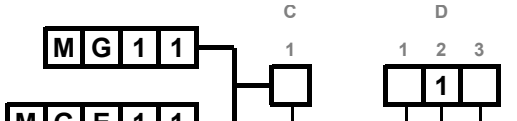
	**Safety comment.**

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 italics).

MODEL CODE



		❶ cm³/tr [cu.in/rev.]	❷ cm³/tr [cu.in/rev.]
Cams with equal lobes	MG11 7	730 [44.5]	365 [22.3]
	MG11 8	837 [51.0]	419 [25.5]
	MG11 9	943 [57.5]	472 [28.8]
	MG11 0	1,048 [63.9]	524 [32.0]
	MG11 1	1,147 [70.0]	574 [35.0]
	MG11 2	1,259 [76.8]	630 [38.4]
	MGE11 9	1,263 [77.0]	632 [38.5]
	MGE11 0	1,404 [85.6]	702 [42.8]
	MGE11 1	1,536 [93.7]	768 [46.8]
	MGE11 2	1,687 [102.9]	844 [51.4]
Cams with unequal lobes	MG11 A	1,048 [63.9]	629 [38.4] / 419 [25.6]
	MGE11 A	1,404 [85.6]	843 [51.4] / 561 [34.2]

❶ **First displacement**

❷ **Second displacement**

1-displacement valving	R	*CW*
	L	*CCW*
2-displacement valving (Clockwise)	D	Ratio 2
	E	Ratio <2
	F	Ratio >2
2-displacement valving (Counterclockwise)	G	Ratio 2
	H	Ratio <2
	J	Ratio >2

Distribution with built-in exchange	1

Metric ISO 6149-1	8
UNF ISO 11926-1	9
UNF ISO 8434-3	A
UNF-ISO 8434-3	B

With C-Frame	1
Without attachments	0
Crossing motor axis	1
Standard bearing support	1
P16™ Parking brake	N
8 x M20 x 1.5 on Ø275	9
8 x M20 x 1.5 on Ø275 *	7

* Standard for P16™ brake.

Without studs	1
With studs + nuts	2
With studs	3
M threaded holes	4

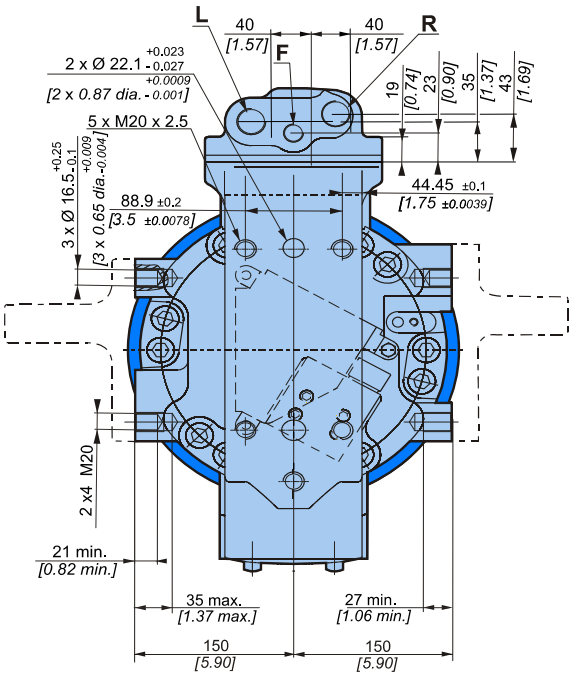
T4 speed sensor (without rotation direction)	2
Diamond™	7
Predisposition for speed sensor	8
Reinforced sealing	E
TD speed sensor (two phase shifted frequencies)	Q
TR speed sensor (digital rotation direction)	S

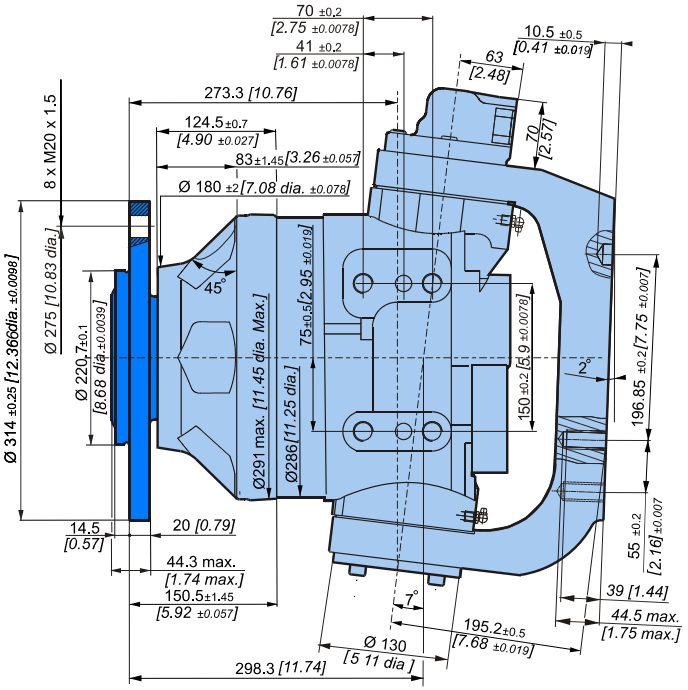
CHARACTERISTICS

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

210 kg *[462 lb]*

1.00 L *[60 cu.in]*

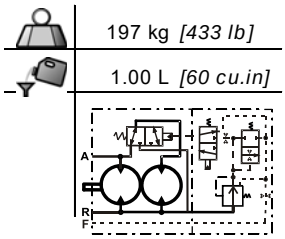


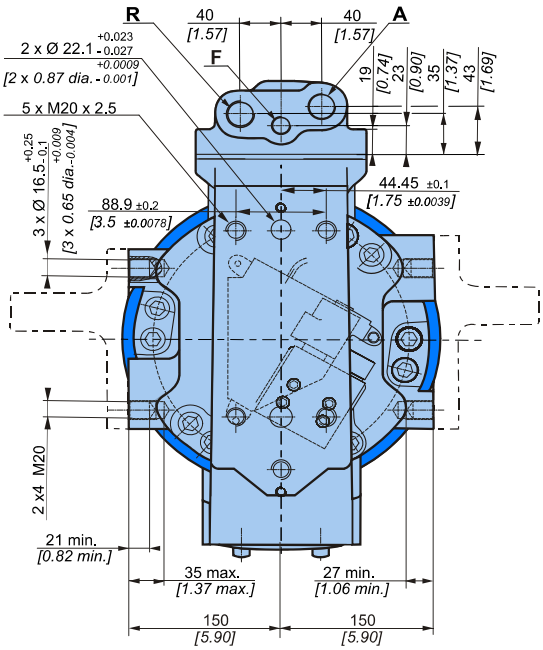


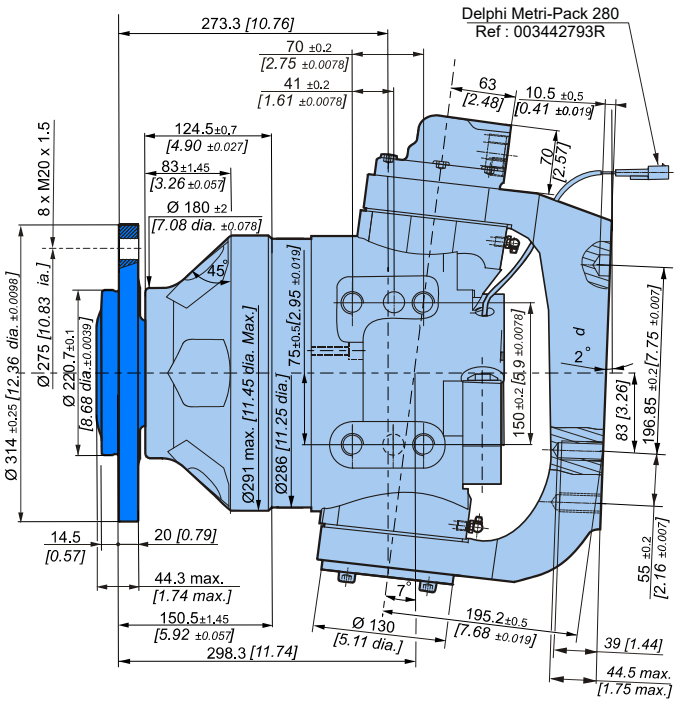
Standard (1910) 2 displacement motor with built-in exchange

197 kg *[433 lb]*

1.00 L *[60 cu.in]*

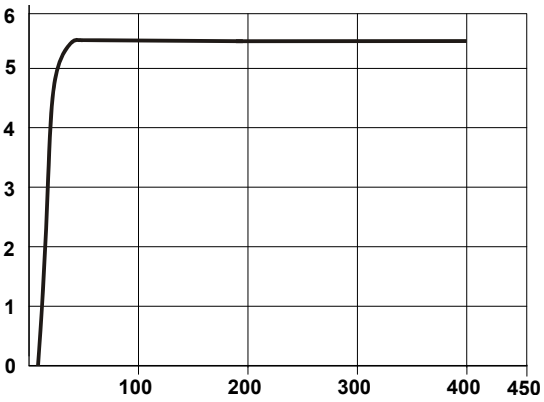


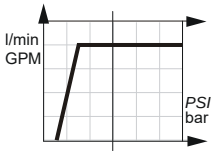


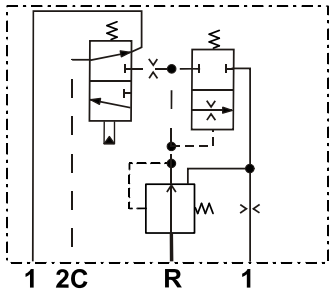


Exchange

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





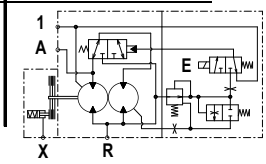


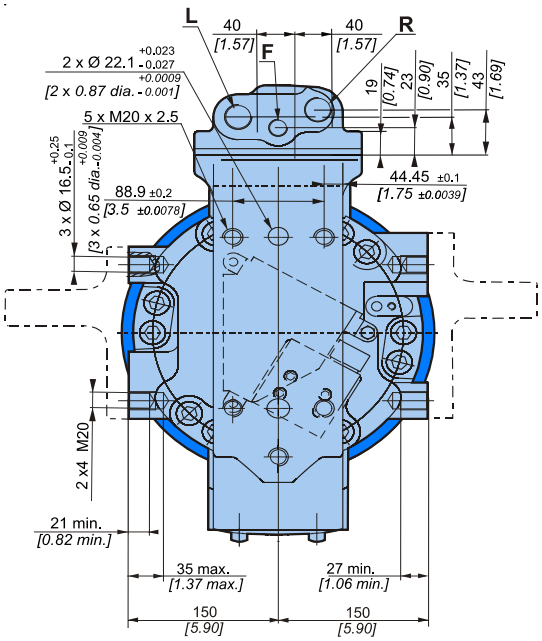
The exchange flow rate indicated on the basis of the supply pressure (P = 50 bar *[725 PSI]*) is constant (Q = 5.5 l/min *[1.45 GPM]*).

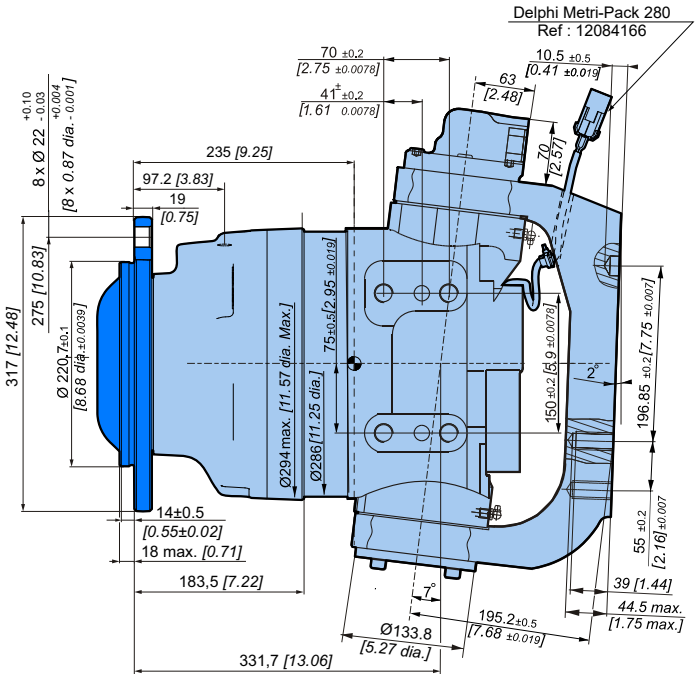
Standard (N710) 2 displacement motor with built-in exchange

197 kg *[433 lb]*

1.00 L *[60 cu.in]*







Load curves

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

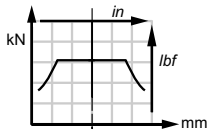
MG11

Permissible radial loads

Test conditions :

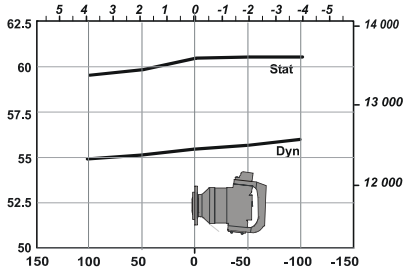
Static :
- 150 bar *[2175 PSI]*,code 9 displacement
- Max. axial stress = 15% of Fr
- Load radius = 719 mm *[28.31 in]*

Dynamic :
- 450 bar *[6527 PSI]*,code 9 displacement
- Max. axial stress = 15% of Fr
- Load radius = 719 mm *[28.31 in]*



1	9	1	0
N	7	1	0
1	2	3	4

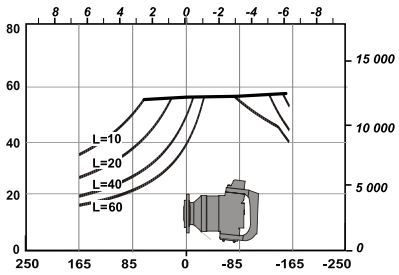
P



Service life of bearings

Test conditions :

L : Millions B10 revolutions at 150 bars (average pressure), with 25 cSt fluid, code 2 displacement, without axial load.



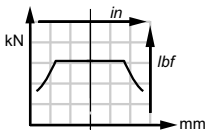
MGE11

Permissible radial loads

Test conditions :

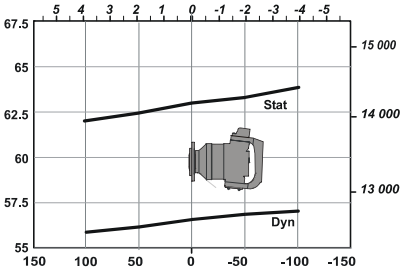
Static :
- 150 bar *[2175 PSI]*,code 9 displacement
- Max. axial stress = 15% of Fr
- Load radius = 719 mm *[28.31 in]*

Dynamic :
- 450 bar *[6527 PSI]*,code 9 displacement
- Max. axial stress = 15% of Fr
- Load radius = 719 mm *[28.31 in]*



1	9	1	0
N	7	1	0
1	2	3	4

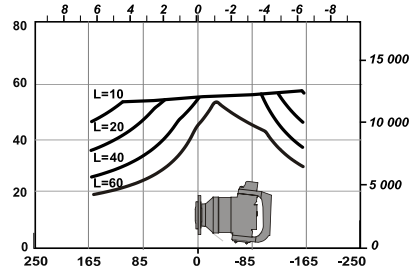
P



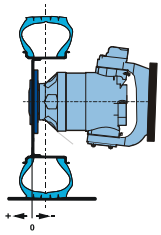
Service life of bearings

Test conditions :

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



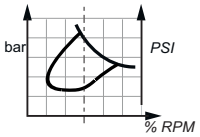
The service life of the components is influenced by the pressure.You must check that the combination of forces applied (Axial load / Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications.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

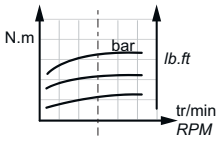


Efficiency

Overall efficiency

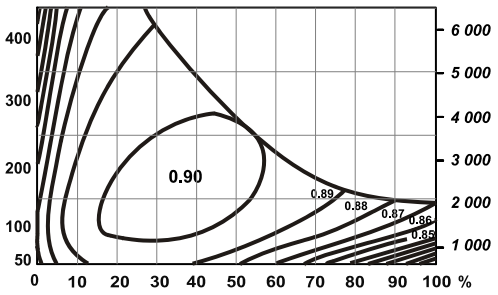
Average values given for guidance for code 0 displacement after 100 hours of operation with HV46 hydraulic fluid at 50°C *[122°F]*.

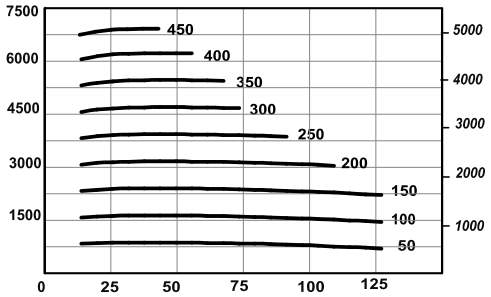




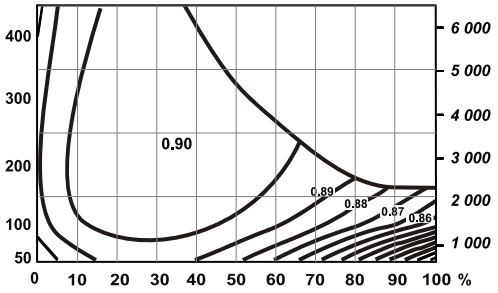
Actual output torque

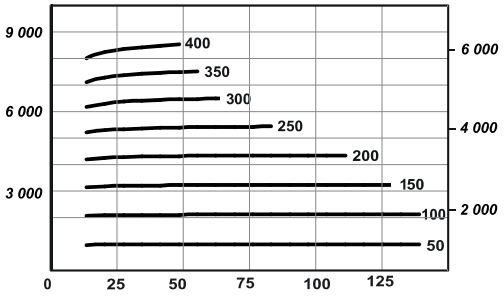
MG11





MGE11





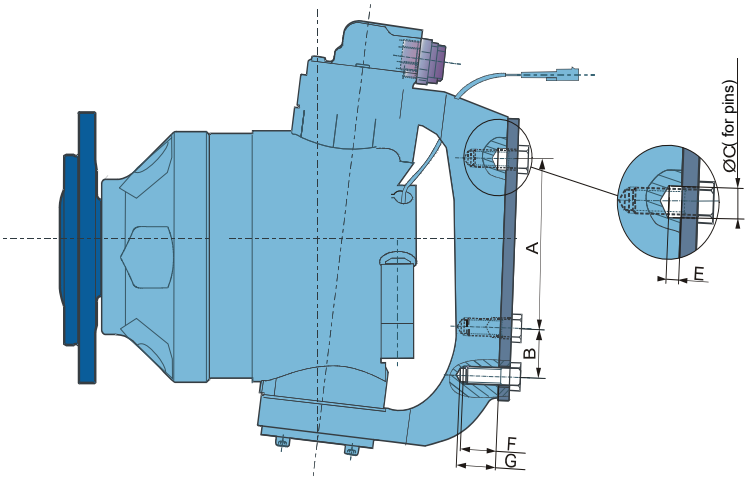
For a precise calculation, consult your Poclain Hydraulics application engineer.

Wheel rim mountings

	Class
8xM20x1.5	12,9

See generic installation motors N°B59689D.

Chassis mounting

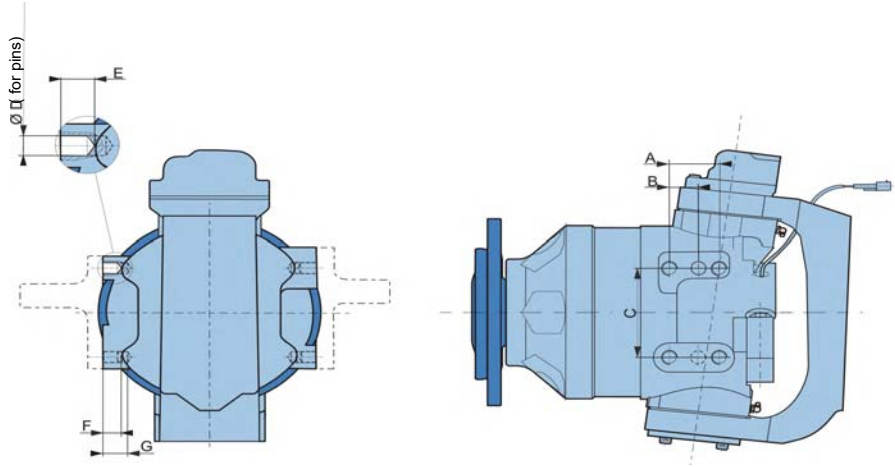


Take care over the immediate environment of the connections.

A (1) mm *[in]*	**B** (1) mm *[in]*	**2xØC** (2) mm *[in]*	**E (3)** mm *[in]*	**F max.** mm *[in]*	**G (4)** mm *[in]*		Class
196,85 *[7,75]*	55 *[2,17]*	22,1 *[0,87]*	10,5 *[0,41]*	39 *[1,54]*	44,5 *[1,75]*	5xM20x2.5	12.9
(1)	+ 0.2 *[+0.0078]* - 0.2 *[- 0.0078]*	(2)	+0.023 *[+0.0009]* -0.0027 *[- 0.0010]*	(3)	+ 0.5 *[+0.019]* - 0.5 *[- 0.019]*		

Pins are used to take tangential stress.

Steering attachment



A (1) mm *[in]*	**B** (1) mm *[in]*	**C** (1) mm *[in]*	**3x ØD** (2) mm *[in]*	**E** mm *[in]*	**F** mm *[in]*	**G** mm *[in]*
70 *[2.76]*	41 *[1.61]*	150 *[5.91]*	16.5 *[0.65]*	27 *[1.06]*	21 *[0.83]*	35 *[1.38]*

	Class	(*) N.m	*[lb.ft]*
5x M20x2.5	12.9	690	*[509]*

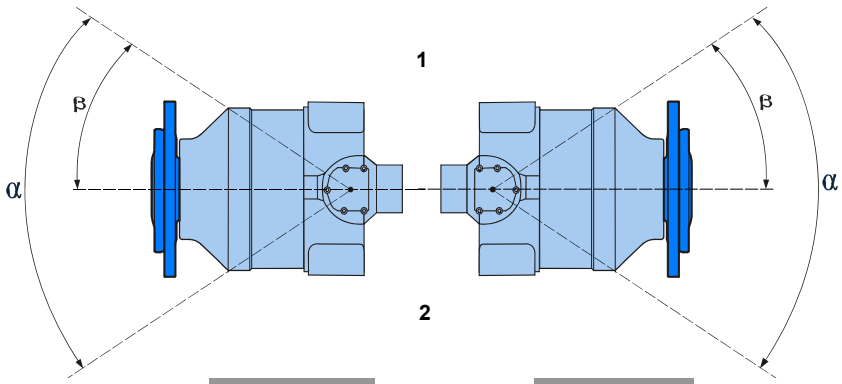
(1) + 0.2 *[+0.0078]* - 0.2 *[- 0.0078]*

(2) + 0.25 *[+0098]* - 0.1 *[- 0.0039]*

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

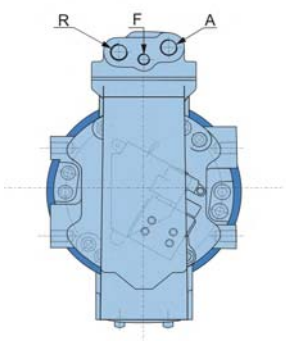
Pins are used to take tangential stress.

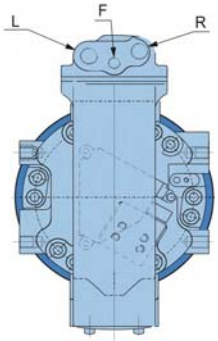
Steering angle

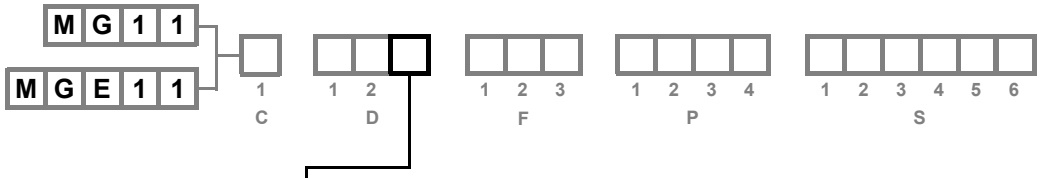


Attachment(s)	**α** **Max.**	**β** **Min.**
1	80 °	40 °
2	74°	37 °

Hydraulic connections





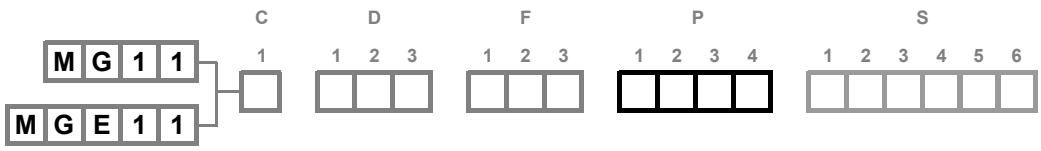


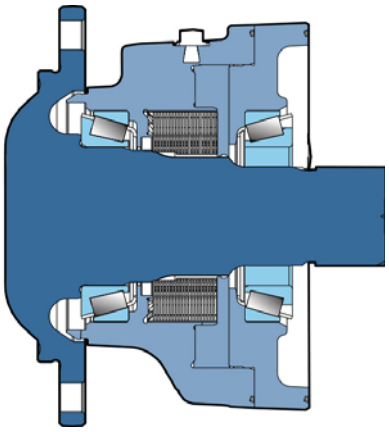
	Standards	Power supply		Case drain
		Single displacement motor	Double displacement motor	
		R,L	A,R	F
A	ISO 11926-1	1" 1/16 12 UNF	1" 1/16 12 UNF	3/4" 16 UNF
8	ISO 6149-1	-	M27 x 2	M18 x 1.5

You are strongly advised to use the fluids specified in brochure "Installation guide" N° B59689D.

To find the connections' tightening torques, see the brochure "Installation guide" N° B59689D.

P16™ Parking brake





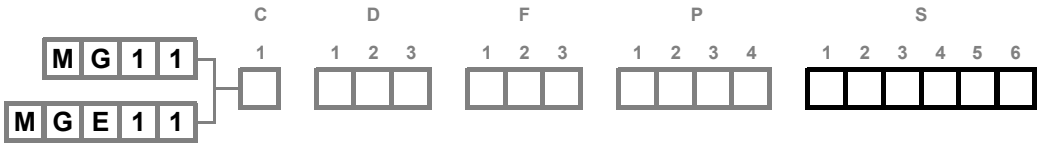
	C N 7 1 0
Max. rotation speed	250 rpm
Parking brake torque at 0 bars on housing (new brake)	11,000 Nm *[8,110 lb.ft]*
Dynamic emergency braking torque at 0 bars on housing (max. 10 uses of emergency brakes)	9,190 Nm *[6,780 lb.ft]*
Max. theoretical energy dissipation	160 kJ
Min. release brake pressure	16 bar *[232 PSI]*
Max. release brake pressure	30 bar *[435 PSI]*
Oil capacity	320 cm³ *[19.5 cu.in]*
Volume for brake release	66.5 cm³ *[4.1 cu.in]*

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 application engineer.

The use of certain oils may not offer the characteristics stated above. Consult your Poclain Hydraulics application engineer.

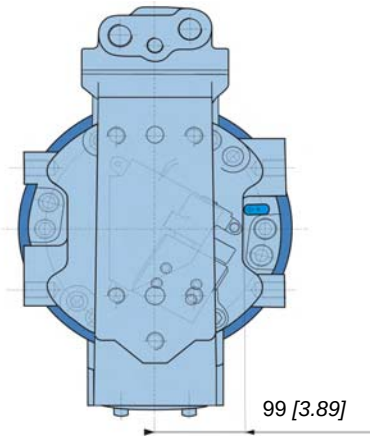
OPTIONS

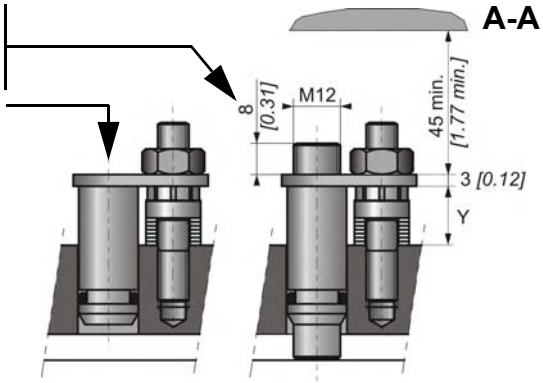


You can accumulate more than one optional part. Consult your Poclain Hydraulics sales engineer.

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

Designation	C
T4 speed sensor (without rotation direction)	**2**
TR speed sensor (digital rotation direction)	**S**
TD speed sensor (two phase shifted frequencies)	**Q**
Predisposition for speed sensor	**8**





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. B61352L.

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.

POCLAIN
Hydraulics

27/02/2024
A04197M
A04203T
Not available
Not available
Not available
B33975D
Not available
Not available

www.poclain-hydraulics.com