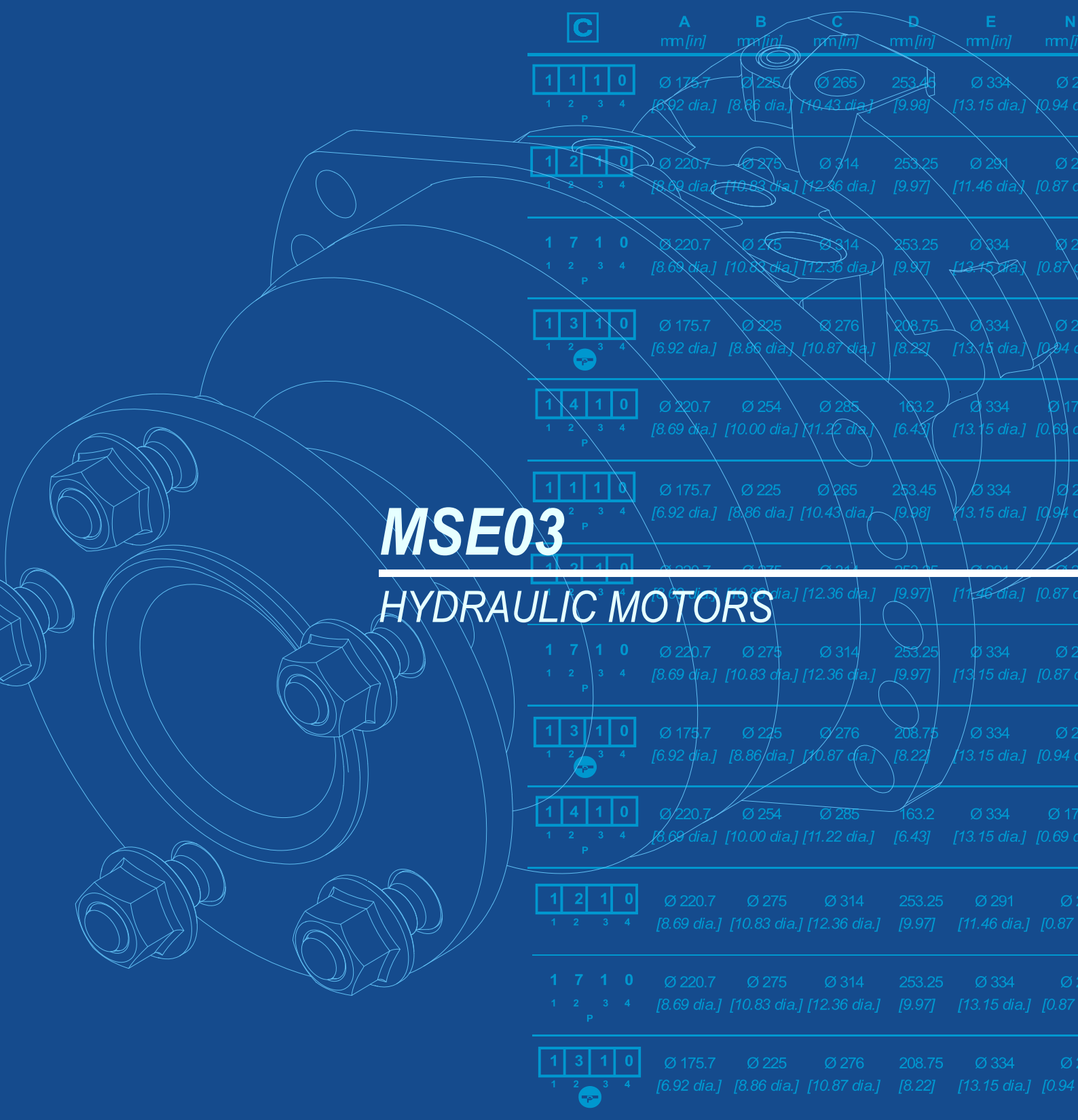


MSE03

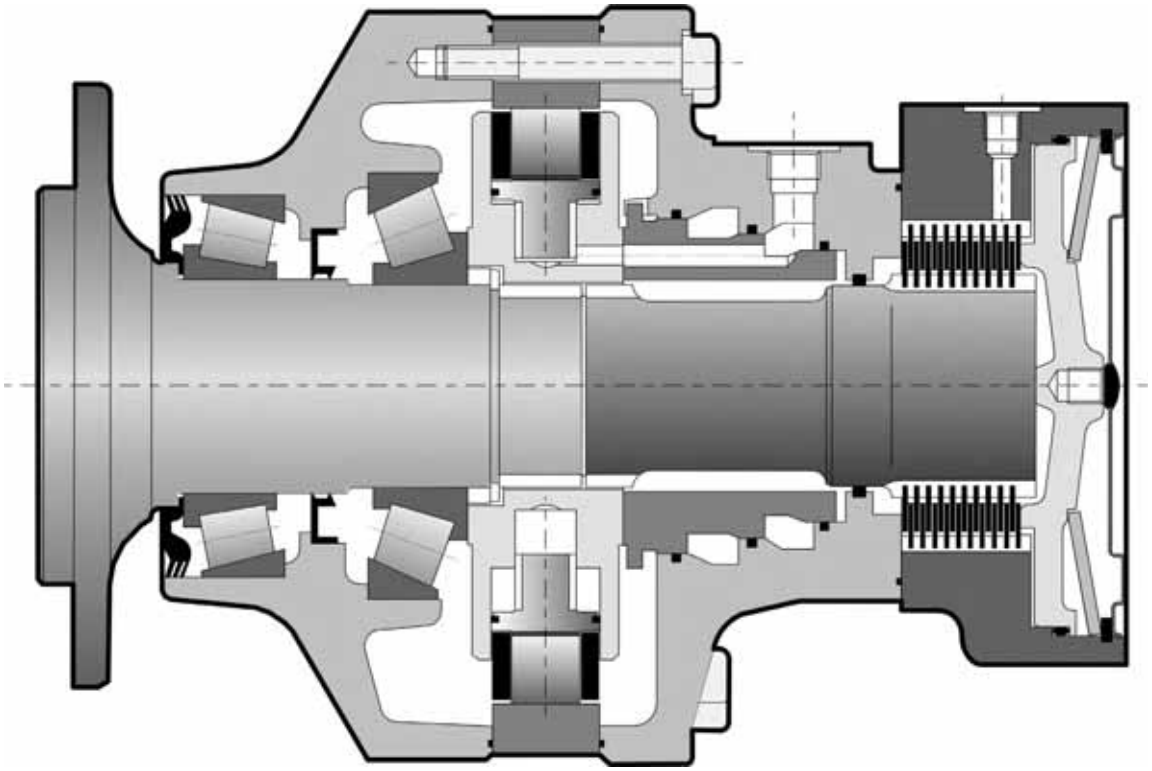
HYDRAULIC MOTORS

TECHNICAL CATALOG

POCLAIN HYDRAULICS

Poclain

CHARACTERISTICS



Motor inertia	**= 0.01 kg.m²**
Noise emissions	**= 60 dBA**

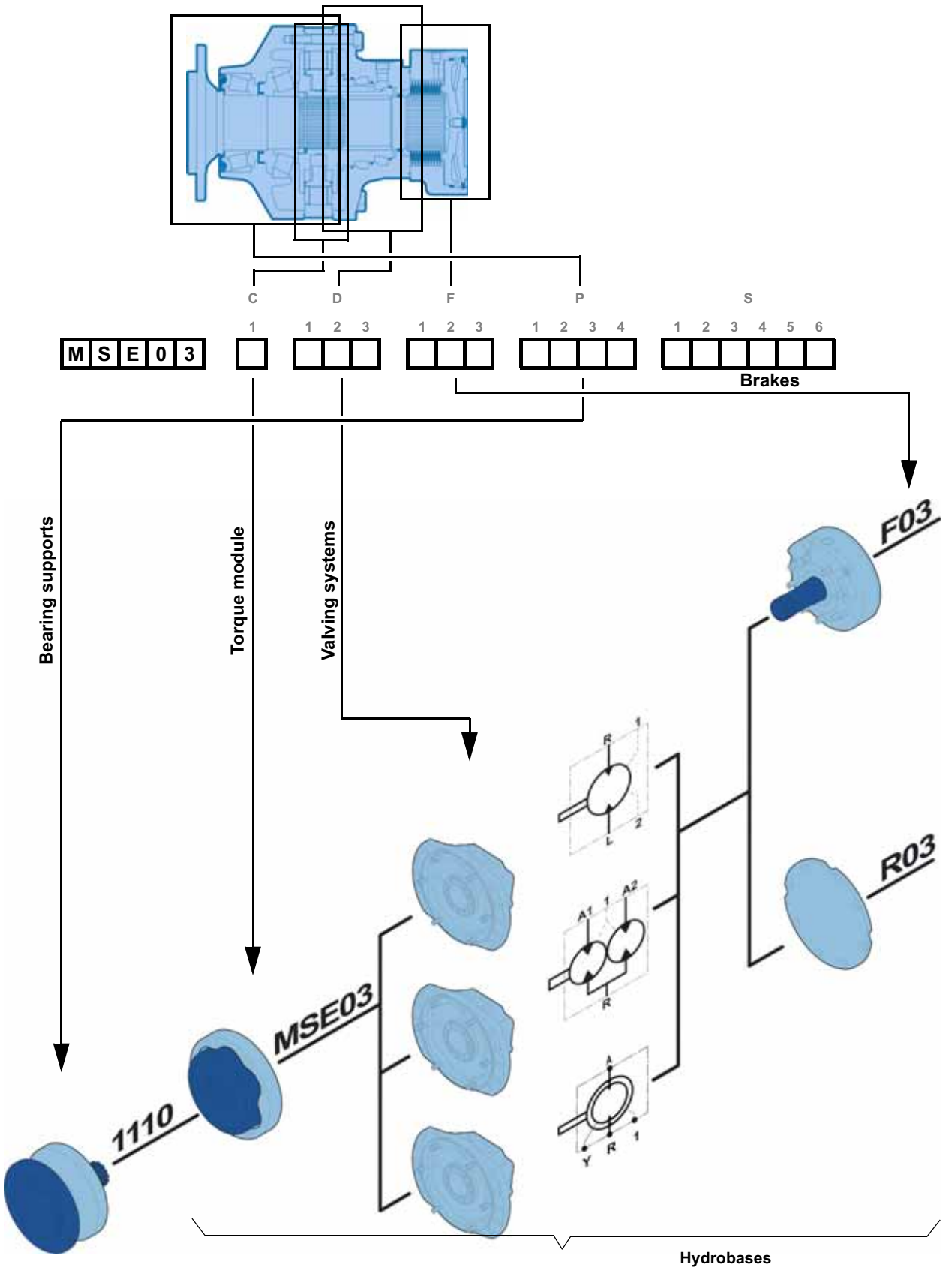
	C	❶ cm³/tr [cu.in/rev.]	❷ cm³/tr [cu.in/rev.]	Theoretical torque ❶ at 100 bar Nm	Theoretical torque ❶ at 1000 PSI [lb.ft]	Max.power ❶ kW [HP]	Max.power ❷ preferred kW [HP]	Max.power ❷ non-preferred kW [HP]	Max.speed tr/min[RPM]	Max.speed ❶ ❷ tr/min[RPM]		Max. pressure bar [PSI]
Cams with equal lobes	1	450 [27.4]	225 [13.7]	716	[364]	22 [30]	16.5 [22]	11 [15]	155			350 [5 076]
	2	500 [30.5]	250 [15.2]	795	[404]				140	166	183	

❶ First displacement

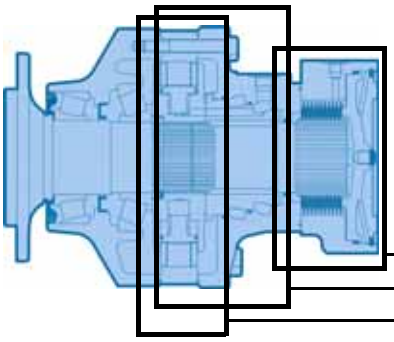
❷ Second displacement

CONTENT

MODULARITY


C
D
F
P
S
M S E 0 3
1
1 2 3
1 2 3
1 2 3 4
1 2 3 4 5 6
Brakes
Bearing supports
Torque module
Valving systems
F03
R03
MSE03
1110
Hydrobases

MODEL



C D F

1 1 2 3 1 2 3

C | M S E 0 3 | | | |

	cm³/tr *[cu.in/rev.]*	
Cams with equal lobes		
1	450 *[27,4]*	225 *[13,7]*
2	500 *[30,5]*	250 *[15,2]*

Without mounting	**1**	**D**
With mounting	**2**	**E**

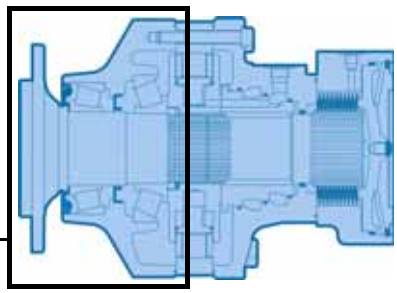
1 Displacement
2 Displacement Twin-Lock™

ISO 11926-1 connection	**A**
ISO 1179-1 connection	**3**

1-displacement valving	**1**	
2-displacement & Twin-Lock™ valving (Clockwise)	**D**	Ratio 2
	E	Ratio <2
	F	Ratio >2
2-displacement & Twin-Lock™ valving (Counterclockwise)	**G**	Ratio 2
	H	Ratio <2
	J	Ratio >2

Brake	F 0 3
Without brake (reinforced plate)	R 0 3

CODE



P S

1	2	3	4	1	2	3	4	5	6
			0						

0	Without bearing support
1	Without mounting

Without shaft	**0**
5 x Ø18 on Ø140	**1**

Without studs	**1**
With studs + nuts	**2**
With studs	**3**

Without Options or Adaptations	**0**
T4 Speed sensor installed	**2**
Brake environmental cover without plug	**3**
Diamond™	**7**
Predisposition for speed sensor	**8**
Special paint or no paint	**D**
Reinforced sealing	**E**
Special wheel rim mounting	**G**
High efficiency	**H**
Surface heat treatment of the shaft	**J**
TR Speed sensor installed	**S**

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.

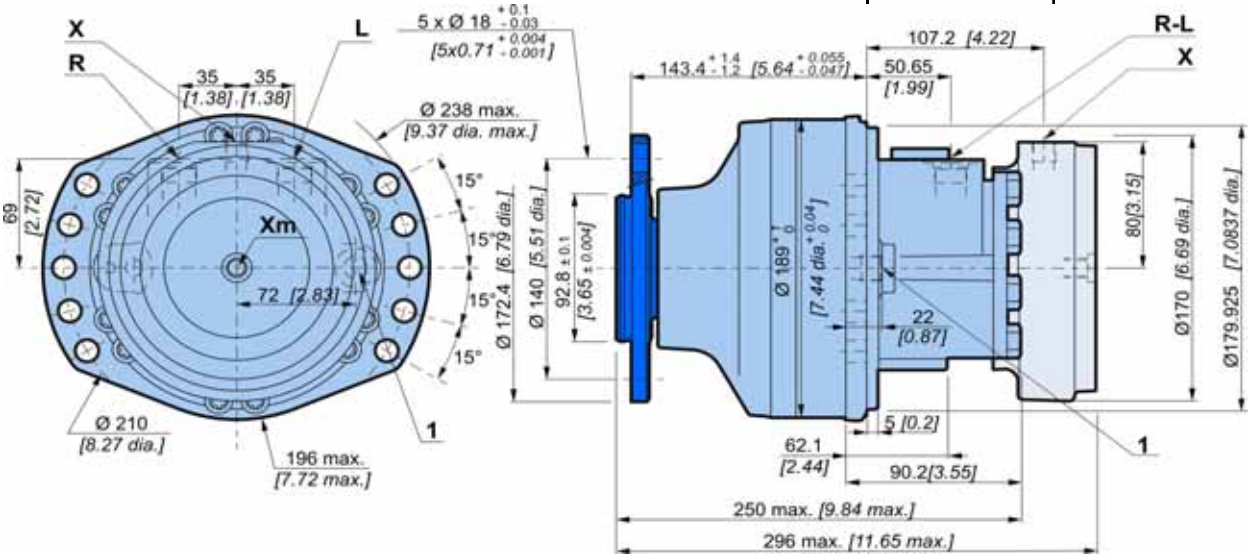
This document also includes essential operating instructions for the product and general information. These are indicated in the following way:

	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)

Dimensions for standard (1110) 1-displacement motor

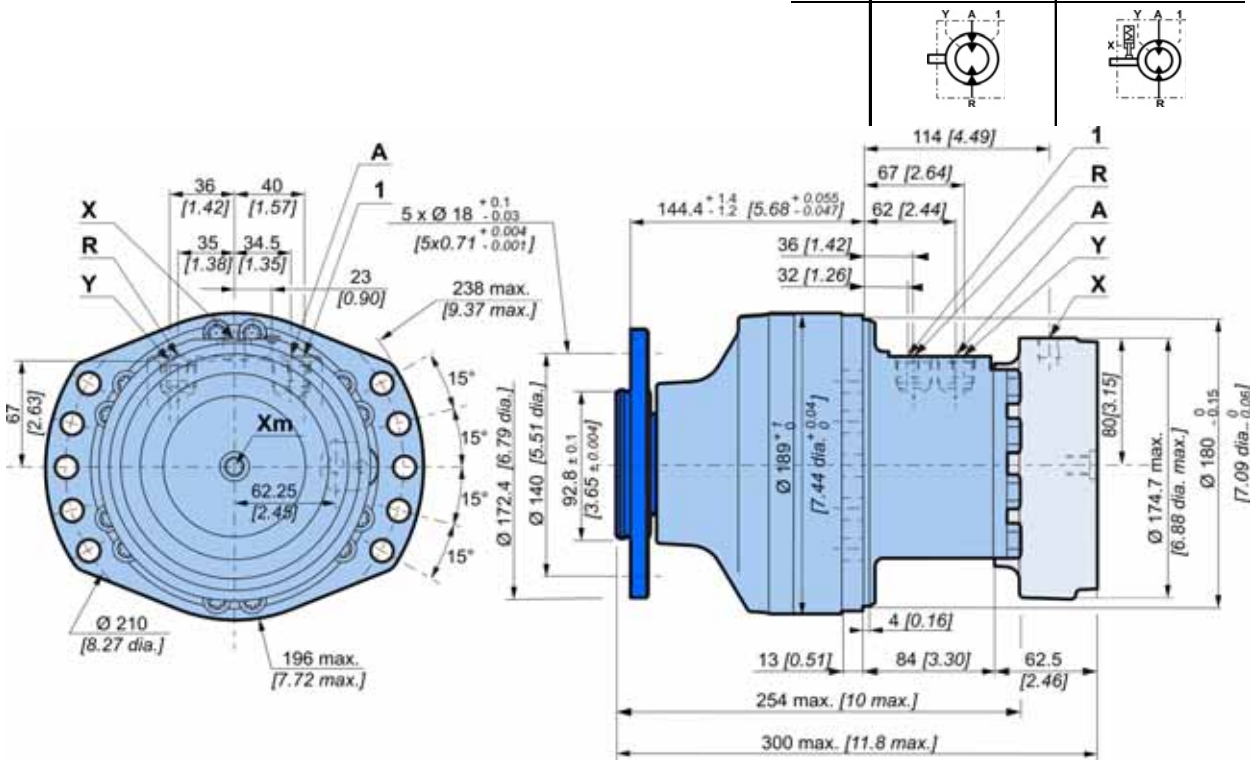
	26 kg *[57 lb]*	32 kg *[70 lb]*
	0,70 L *[42 cu.in]*	0,60 L *[36 cu.in]*



WHEEL MOTOR

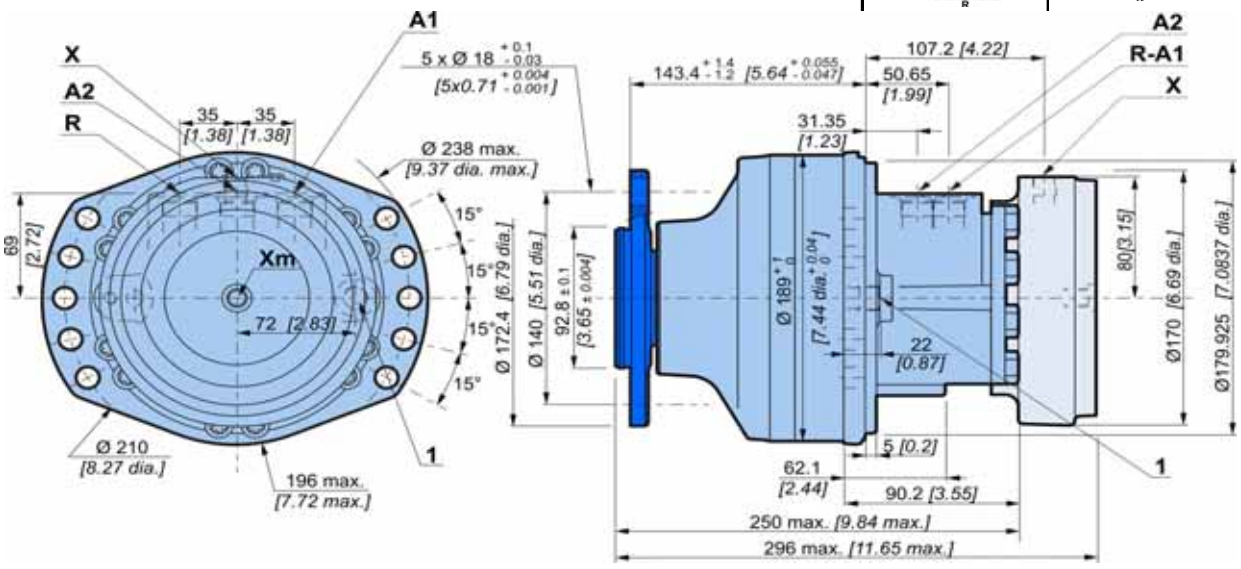
Dimensions for standard (1110) 2-displacement motor

	26 kg *[57 lb]*	32 kg *[70 lb]*
	0,70 L *[42 cu.in]*	0,60 L *[36 cu.in]*



Dimensions for standard (1110) Twin-Lock™ motor

	26 kg *[57 lb]*	32 kg *[70 lb]*
	0,70 L *[42 cu.in]*	0,60 L *[36 cu.in]*



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

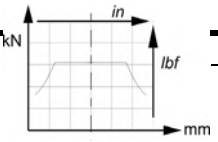
Load curves

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



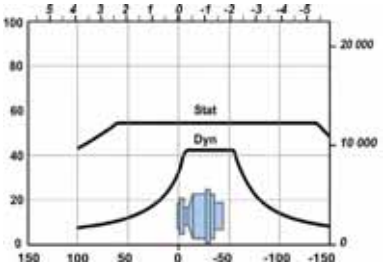
Service life of bearings

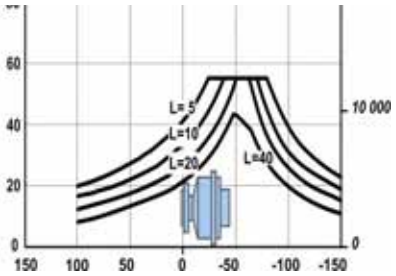
Test conditions :

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

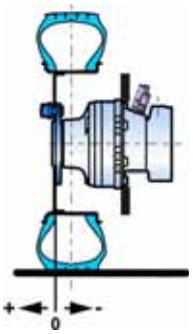
1	1	1	0
1	2	3	4

P

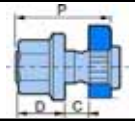




The service life of the components is influenced by the pressure.You must check that the combination of forces applied (Axial load / Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications.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



Studs

	P mm *[in]*	C min. mm *[in]*	C max. mm *[in]*	D mm *[in]*		Class	(1) N.m *[lb.ft]*	(2) N.m *[lb.ft]*
M14x1.5	45 *[1,77]*	5 *[0,20]*	10 *[0,39]*	16,5 *[0,65]*		**12,9**	200 *[147,5]*	250 *[184,4]*

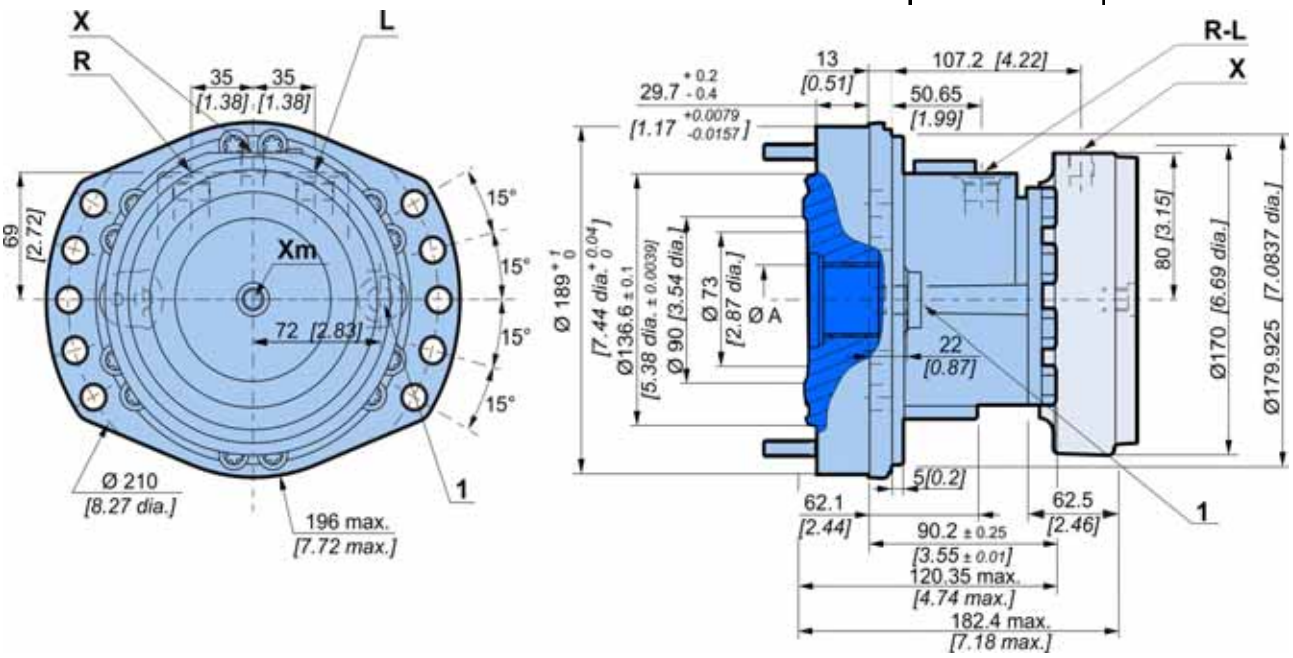
(*) The tightening torques are given for the indicated loads.
(1) Wheel rim : Suggested tightening torque for wheel rim mountings (Re steel disc > 240 N/mm² *[>34 800 PSI]*).
(2) Standard : Suggested tightening torque in other cases (Re steel flange 360 > N/mm² *[>52 215 PSI]*)

See generic installation motors N°801478197L.

VALVING SYSTEMS AND HYDROBASES

Dimensions for 1-displacement valving

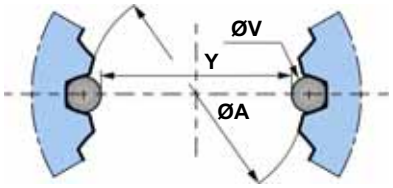
	18,3 kg *[40 lb]*	24 kg *[53 lb]*
	0,30 L *[18 cu.in]*	0,40 L *[24 cu.in]*



Cylinder block splines

(as per standard NF E22-141)

			Dimension on 2 pins	
ØA	**Module**	**Z**	**Y**	**ØV**
40 *[1,575]*	1,667	22	33,446 *[1,317]*	3,33 *[0,131]*

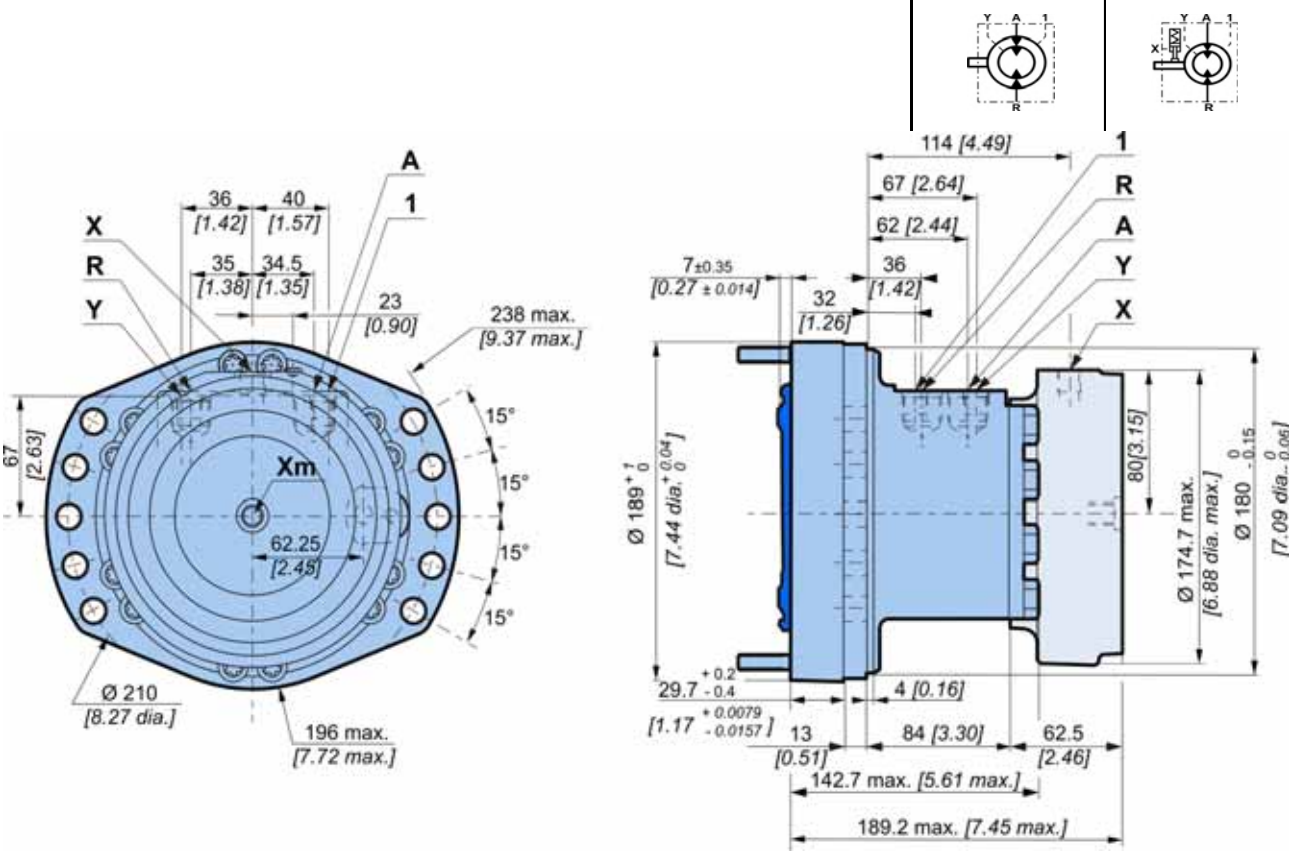


You are advised to have the installation validated by your Poclain Hydraulics application engineer before using the hydraulic unit in an application.

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

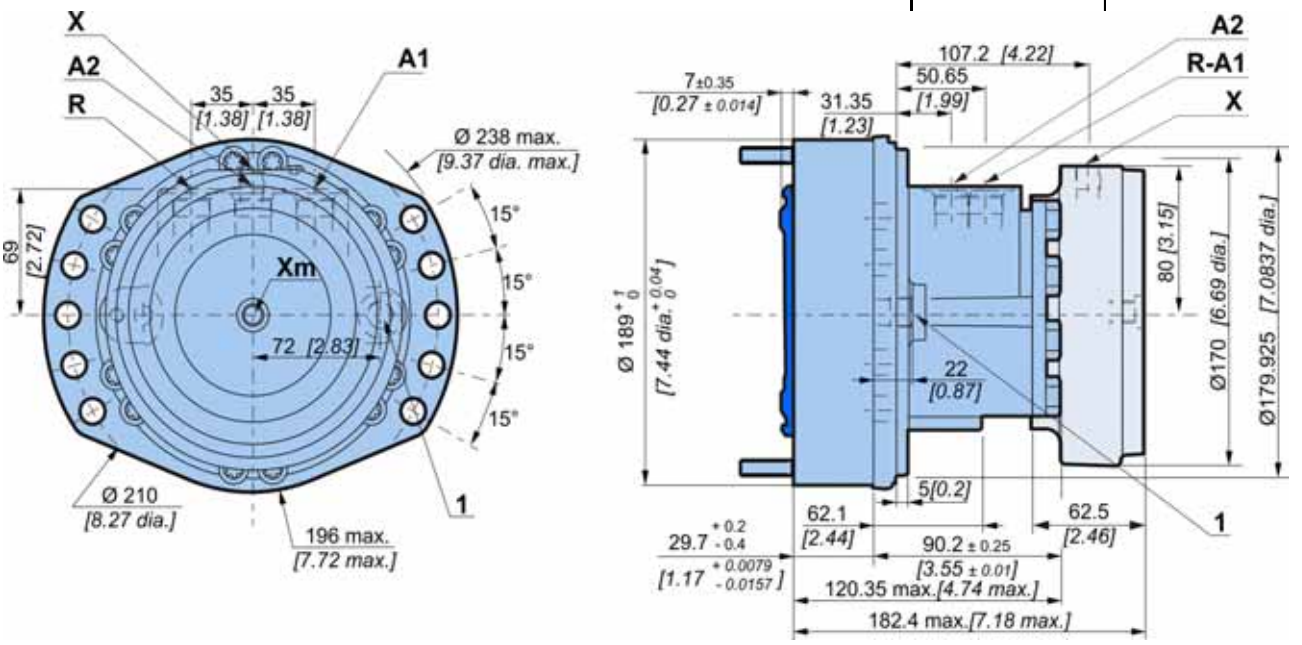
Dimensions for 2-displacement valving

	17,3 kg *[38 lb]*	23,0 kg *[51 lb]*
	0,30 L *[18 cu.in]*	0,40 L *[24 cu.in]*

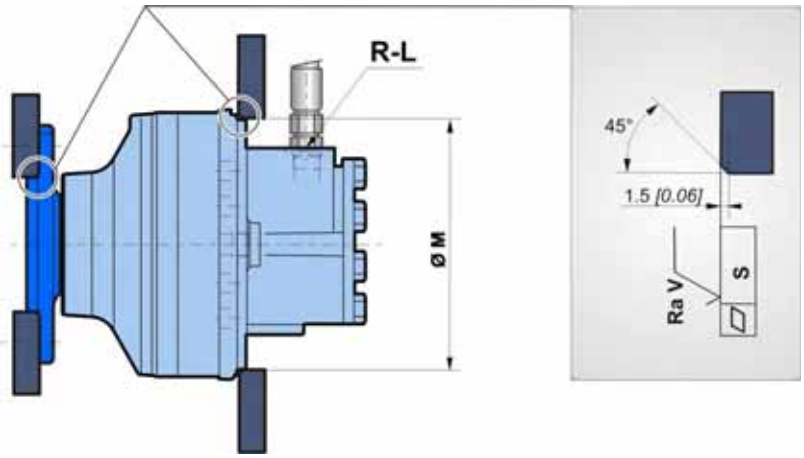


Dimensions for Twin-Lock™ valving

	17,3 kg *[38 lb]*	23,0 kg *[51 lb]*
	0,30 L *[18 cu.in]*	0,40 L *[24 cu.in]*



Chassis mountings



Take care over the immediate environment of the connections.

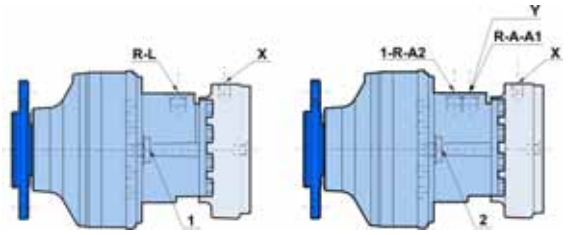
	ØM (1)	ØU	S	Ra V		Class	(*)
	180,25 *[7,10]*	210 *[8,27]*	0,2 *[0,008]*	12,5µm *[0,49µin]*	2 x 5 M12 x 2	**10,9**	120 N.m *[88,5 lb.ft]*

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

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

Hydraulic connections

connections



M	S	E	0	3																			
					1	1	2	3	1	2	3	1	2	3	4	1	2	3	4	5	6
					C	D			F			P				S					

		Old standards	Standards	Power supply	Case drain	2nd displacement control	Control of parking break
				R-L	**1, 2**		**X**
	A	SAE J514	**ISO 11 926-1**	7/8"-14 UNF	9/16"-18 UNF		9/16"-18 UNF
	3	BSPP	**ISO 1 179-1**	Ø21 *[1/2" dia.]*	Ø13 *[1/4" dia.]*		Ø13 *[1/4" dia.]*
				R-A	**1, 2**	**Y**	**X**
	A	SAE J514	**ISO 11 926-1**	7/8"-14 UNF	9/16"-18 UNF	9/16"-18 UNF	9/16"-18 UNF
				R-A1-A2	**1, 2**		**X**
	A	SAE J514	**ISO 11 926-1**	7/8"-14 UNF	9/16"-18 UNF		9/16"-18 UNF
	3	BSPP	**ISO 1 179-1**	Ø21 *[1/2" dia.]*	Ø13 *[1/4" dia.]*		Ø13 *[1/4" dia.]*
Max. pressures			**MS** bar *[PSI]*	350 *[5 076]*	1 *[15]*	30 *[435]*	30 *[435]*

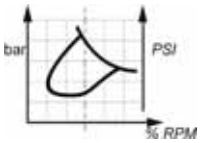
You are strongly advised to use the fluids specified in brochure "Installation guide" N° 801478197L.

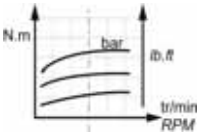
To find the connections' tightening torques, see the brochure "Installation guide" N° 801478197L.

Efficiency

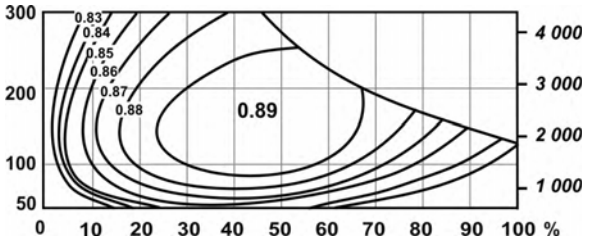
Overall efficiency

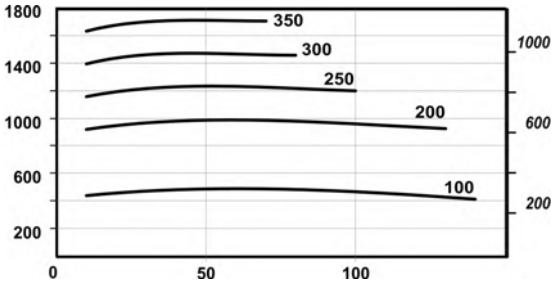
Average values given for guidance for code 0 displacement after 100 hours of operation with HV46 hydraulic fluid at 50°C *[122°F]*.





Actual output torque



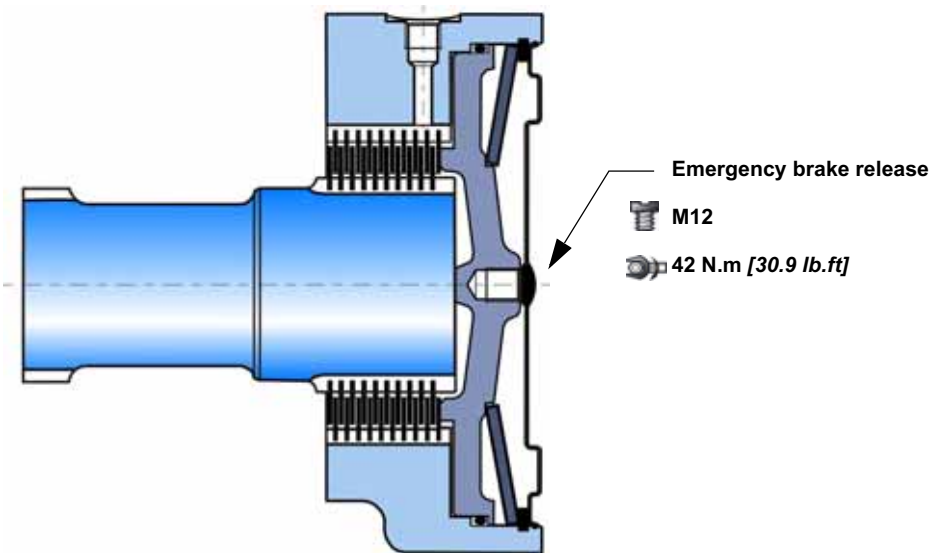


The starting torque is taken to be approximately 85% of the first value for available pressure. For a precise calculation, consult your Poclain Hydraulics application engineer.

BRAKES

		C	D	P	P	S
		1	1 2 3	1 2 3	1 2 3 4	1 2 3 4 5 6
M S E 0 3				F 0 3		

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 resses on the fixed and mobile discs, and immobilizes the shaft. The braking torque decreases in linear proportion to the brake release pressure.

C	F 0 3
Parking brake torque at 0 bars on housing (new brake)	2 500 Nm *[1 840 lb.ft]*
Dynamic emergency braking torque at 0 bars on housing (max. 10 uses of emergency brakes)	1 625 Nm *[1 200 lb.ft]*
Residual parking braking at 0 bars on housing *	1 875 Nm *[1 380 lb.ft]*
Min. brake release pressure	12 bar *[174 PSI]*
Max. brake release pressure	30 bar *[435 PSI]*
Oil capacity	100 cm³ *[6.1 cu.in]*
Volume for brake release	16 cm³ *[1.0 cu.in]*
Max. energy dissipation	38 179 J

* After emergency brake has been used

Do not run in 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/hour, please contact your Poclain Hydraulics application engineer.

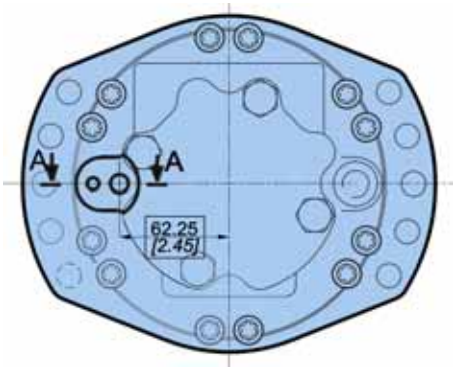
OPTIONS

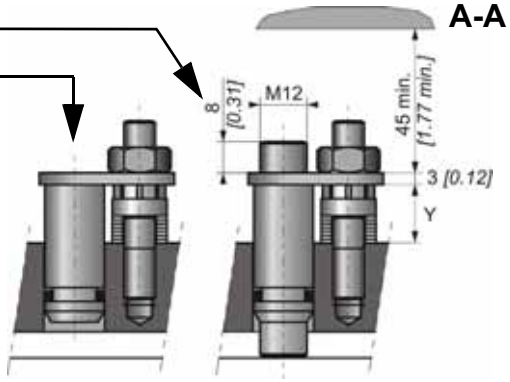
	C	D		F			P				S					
	1	1	2	3	1	2	3	1	2	3	4	1	2	3	4	5	6
M S E 0 3																	

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

2 - S - 8 - Installed speed sensor or predisposition

Designation	C
T4 Speed sensor installed	2
TR Speed sensor installed	S
Predisposition for speed sensor	8





Max. length Y= 19

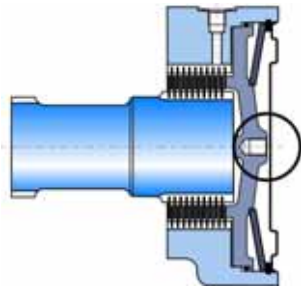
Standard number of pulses per revolution= 40

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)



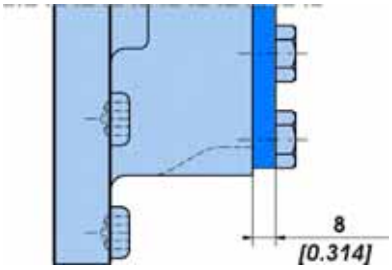
7 - Diamond™

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

Reinforced seals and, for an unbraked motor, a rear reinforced plate (R02 - 8 mm thick, instead of 2 mm).

	C	D	F	P	S
	1	1 2 3	1 2 3	1 2 3 4	1 2 3 4 5 6
	M S E 0 3		R 0 3		E



G - Special wheel rim mounting

Enables certain combinations different from the standard mountings defined on page 10 are possible.

Consult your Poclain Hydraulics sales engineer.

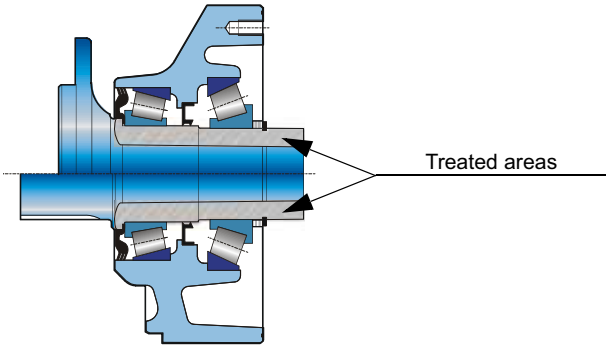
H - High efficiency

Reinforced piston sealing to improve volumetric efficiency.

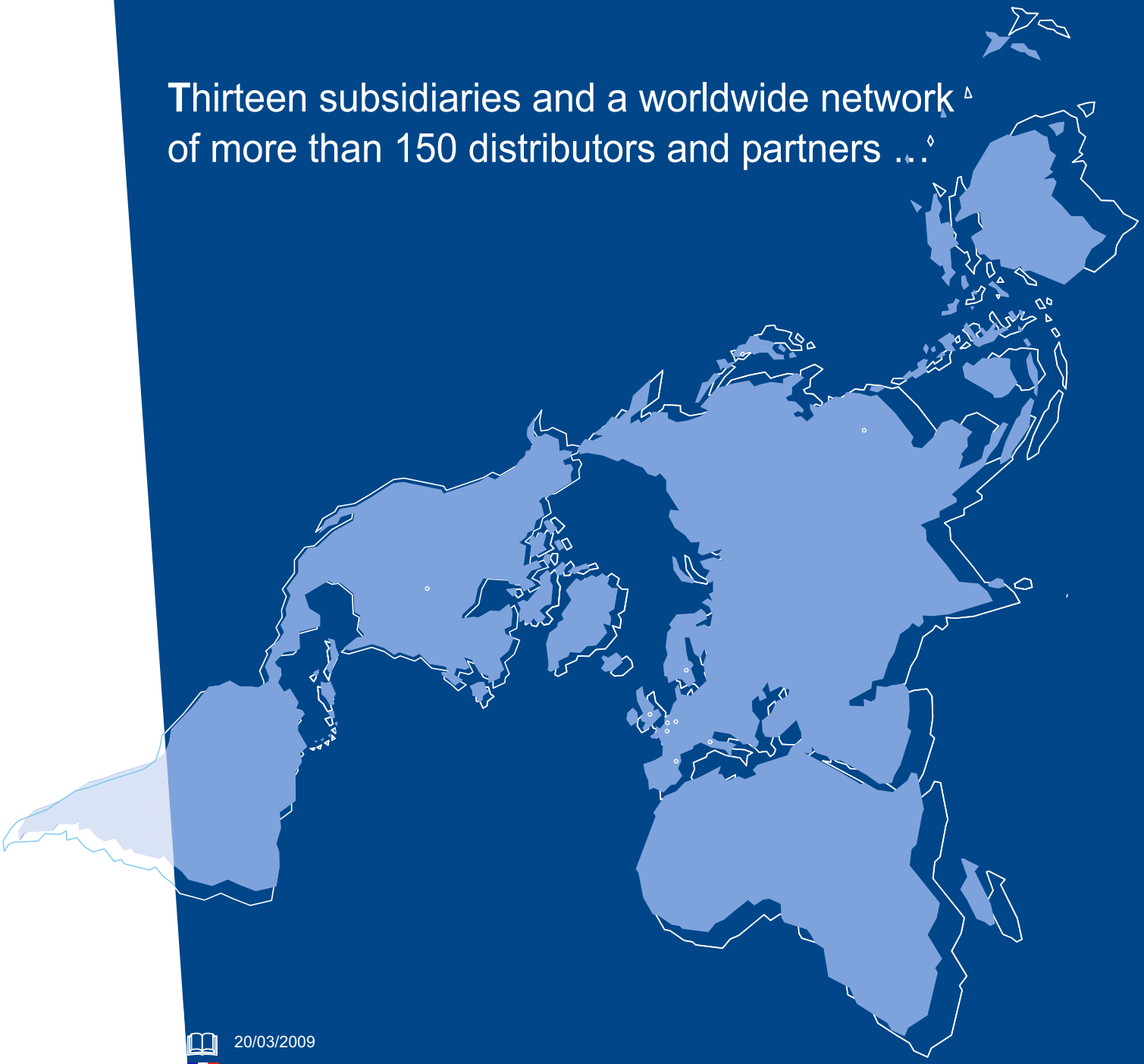
For a precise calculation, consult your Poclain Hydraulics application engineer.

J - Treated shaft

Heat treatment on the indicated bearing radius and splines.



Thirteen subsidiaries and a worldwide network of more than 150 distributors and partners ...



20/03/2009

801 478 117Z

801 478 187A

801 478 199N

801 578 112P

801 578 124C

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