MS02 - MSE02

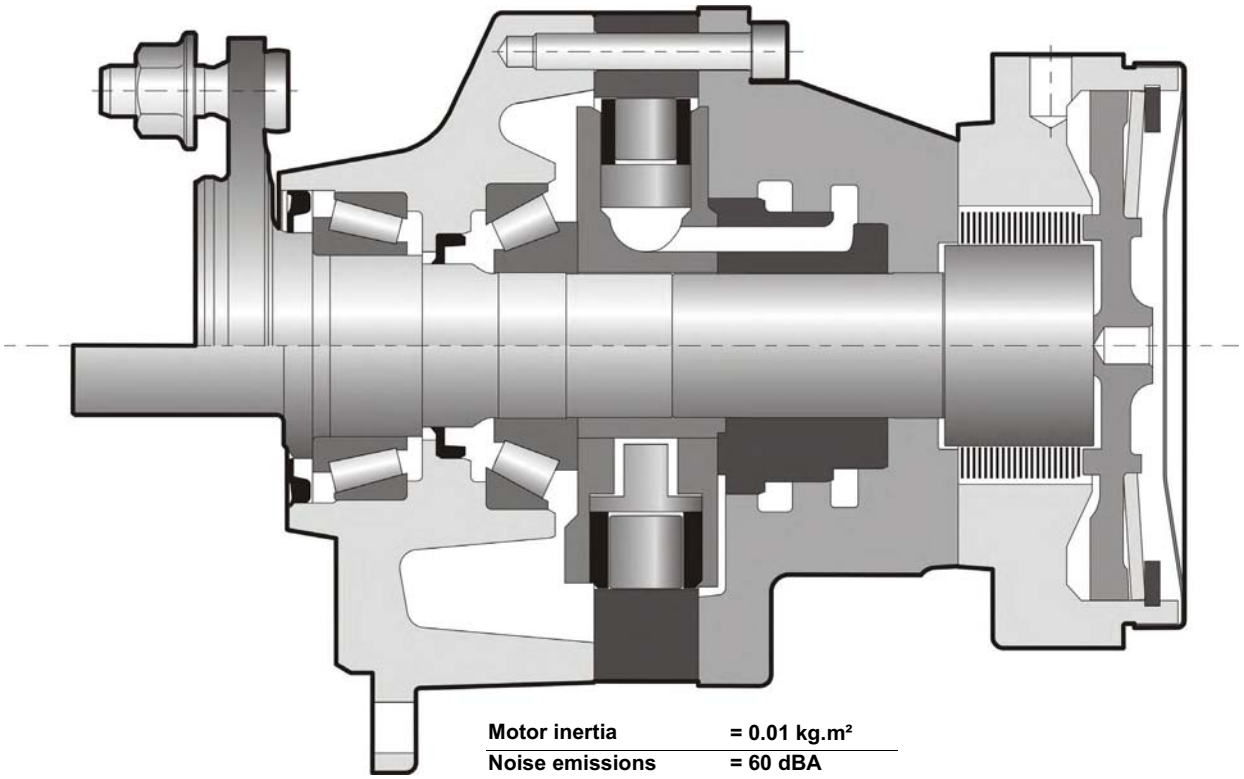
HYDRAULIC MOTORS

new generation

TECHNICAL CATALOG

POCLAIN HYDRAULICS

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 ΔP 100 bar Nm	Theoretical torque ❶ at ΔP *1000 PSI [lb.ft]*	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]*	Pression max. bar *[PSI]*
Cams with equal lobes	MS02	**8**	172 *[10,5]*	86 *[5,2]*	273	*[139]*	18 *[24]*	12 *[16]*	9 *[12]*	590*	580* 590*	450 *[6 527]*
		0	213 *[13,0]*	107 *[6,5]*	339	*[172]*				470*	470* 475*	
		1	235 *[14,3]*	118 *[7,2]*	374	*[190]*				430*	425* 430*	
		2	255 *[15,6]*	128 *[7,8]*	405	*[206]*				395*	390* 395*	
	MSE02	**0**	332 *[20,2]*	166 *[10,1]*	528	*[268]*	22 *[30]*	16,5 *[22]*	11 *[15]*	265*	325* 340*	400 *[5 802]*
		1	364 *[22,2]*	182 *[11,1]*	579	*[294]*				245*	300* 310*	
		2	398 *[24,3]*	199 *[12,1]*	633	*[322]*				225*	270* 285*	
Cams with unequal lobes	MS02	**A**	213 *[13,0]*	86 *[5,2]* 128 *[7,8]*	339	*[172]*	18 *[24]*	12 *[16]*	9 *[12]*	-	390* 395*	450 *[6 527]*
		N	192 *[11,7]*	85 *[5,2]* 107 *[6,5]*	305	*[155]*				-	470* 475*	
	MSE02	**A**	332 *[20,2]*	133 *[8,1]* 199 *[12,1]*	528	*[268]*	22 *[30]*	16,5 *[22]*	11 *[15]*	-	270* 285*	400 *[5 802]*

For a charge pressure of 20 bar *[290 PSI]*

* See option ''M'' for higher speed or lower charge pressure.

❶ **First displacement**

❷ **Second displacement**

CONTENT

MODUL

Torque Module + **Valving System** + **Brake**

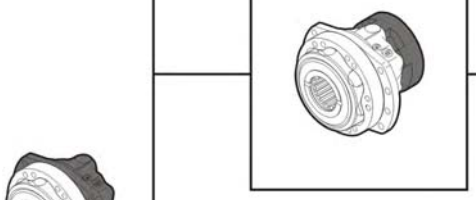
With mounting

1-displacement

1-displacement + Exchange

2-displacements

Twin-lock



With rear brake

Without rear brake

Standard pistons

Stepped pistons

Equal lobes

Unequal lobes

Without mounting

1-displacement

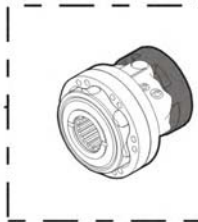
1-displacement + Exchange

2-displacements

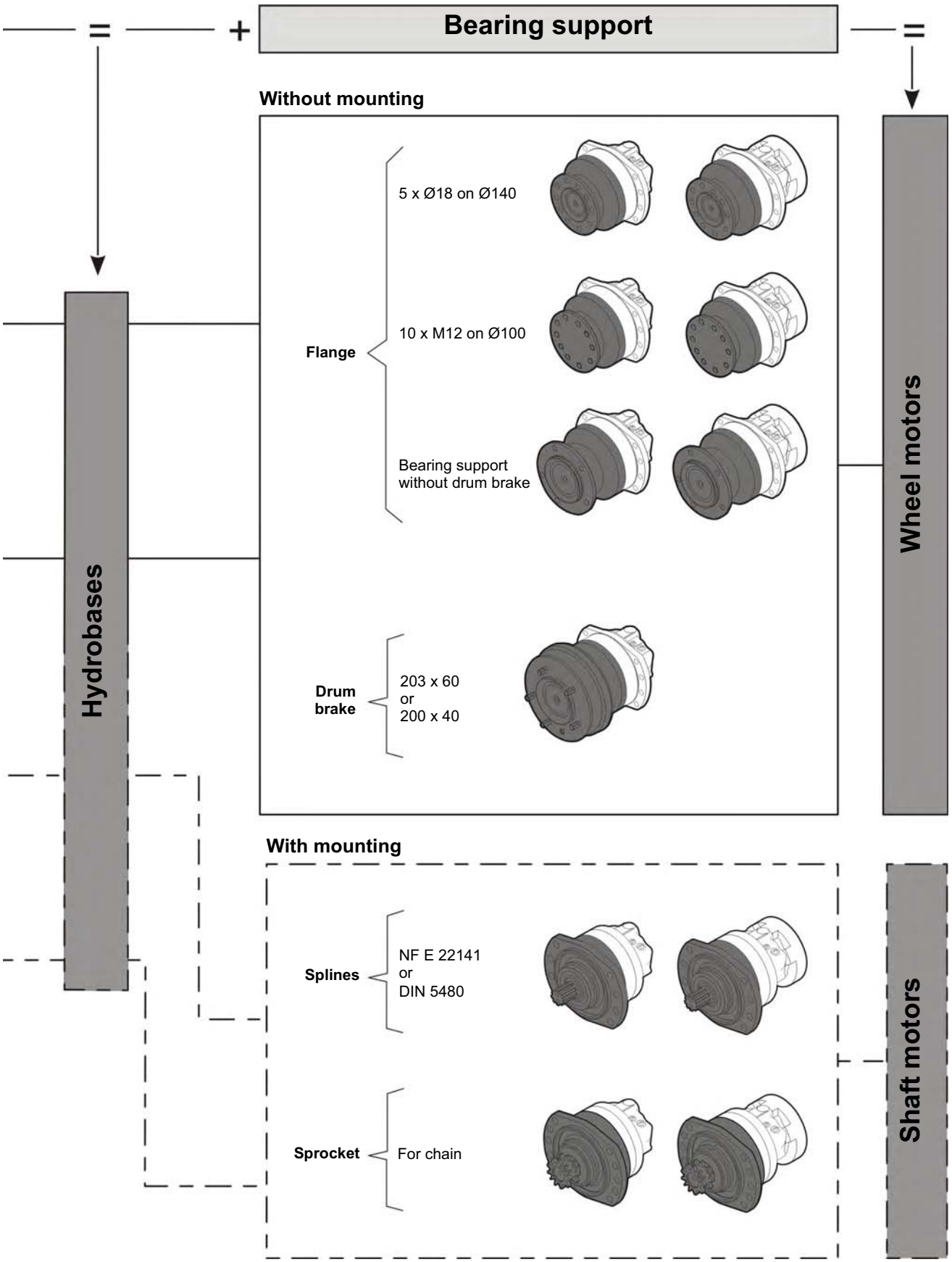
Twin-lock

Without rear brake

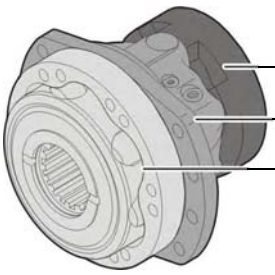
With rear brake



ARITY


Bearing support
Without mounting
Hydrobases
Wheel motors
Flange
5 x Ø18 on Ø140
10 x M12 on Ø100
Bearing support
without drum brake
Drum
brake
203 x 60
or
200 x 40
With mounting
Splines
NF E 22141
or
DIN 5480
Sprocket
For chain
Shaft motors

MODEL



Brake

Valving System

Torque Module

C D F

C

M	S	0	2	1	1	2	3	1	2	3
M	S	E	0	2						

C1

Cam ring type

		1 displacement cm³/tr *[cu.in/rev.]*	2 displacements cm³/tr *[cu.in/rev.]*	
Cams with equal lobes	MS02	172 *[10.5]*	86 *[5.2]*	8
		213 *[13.0]*	107 *[6.5]*	0
		235 *[14.3]*	118 *[7.2]*	1
		255 *[15.6]*	128 *[7.8]*	2
	MSE02	332 *[20.2]*	166 *[10.1]*	0
		364 *[22.2]*	182 *[11.1]*	1
		398 *[24.3]*	199 *[12.1]*	2
Cams with unequal lobes	MS02	213 *[13.0]*	86 *[5.2]*	A
			128 *[7.8]*	
		192 *[11.7]*	86 *[5.2]*	N
			107 *[6.5]*	
	MSE02	332 *[20.2]*	133 *[8.1]*	A
			199 *[12.1]*	

D3

Connection type

GAZ (BSPP) ISO 1179-1	3
Metric ISO 9974-1	4
UNF (SAE) ISO 11926-1	A

D1

Valving type

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

F123

Rear brake

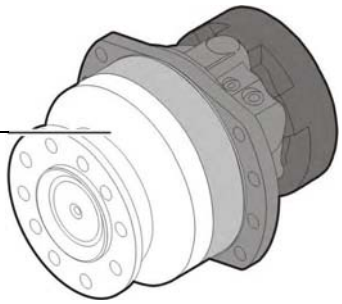
With rear brake	F 0 3
Without rear brake (reinforced plate)	R 0 2

D2

Valving cover

	Without mounting	With mounting
1 displacement / 2 displacements	1	2
Exchange	4	5
Twin-Lock™	D	E

CODE



Bearing support

P 1 2 3 4 — S 1 2 3 4 5 6 — Y

P1

Front unit	
Without bearing support	0
Without mounting	1
Lug mounting	2
Shaft side mounting	3

P2

Bearing support		
Without shaft		0
5 x Ø18 on Ø140		1
10 x M12 on Ø100		2
5 x Ø18 on Ø130		7
Support without drum brake		G
Drum brake (200 x 40)	Mineral	H
	DOT 3&4	J
Drum brake (203 x 60)	Mineral	K
	DOT 3&4	L
For male shaft bearing support		A

P3

Shaft type	
Flange	
Without studs	1
With studs + nuts	2
With studs	3
Threaded holes	4

Male shafts (if P2 = A)	
NF E 22141 splines	1
DIN 5480 splines	5
Dual sprocket for chain	C

S2-6

Options	
1	Fluorinated elastomer seals
2	T4 Speed sensor installed
3	Brake environmental cover without plug
6	Industrial bearing support
7	Diamond™
8	Predisposition for speed sensor
9	Chassis mounting on cam ring side
A	Hollow shaft
B	Drain on the bearing support
D	Special paint or no paint
G	Special wheel rim mounting
H	High efficiency
J	Surface heat treatment of the shaft
M	High speed or reduced charge pressure
P	Customized identification plate
S	TR Speed sensor installed

S1

Standard	
Y	Additional drain on valving systems (Steel plug)
	Reinforced sealing

P4

Drum brake				
A	M8 connection	Without cable	5 studs M16 x 1.5 on dia. 160	200 x 40
B		Right-hand cable outlet		
C		Left-hand cable outlet		
7	M8 connection	Without cable	5 studs M14 x 1.5 on dia. 140. Rim centering: dia. 92.7	
8		Right-hand cable outlet		
9		Left-hand cable outlet		
H	Hook connection	Right-hand cable outlet		
J		Left-hand cable outlet		
4	M8 connection	Without cable	5 studs M14 x 1.5 on dia. 130	203 x 60
5		Right-hand cable outlet		
6		Left-hand cable outlet		
E	Hook connection	Right-hand cable outlet		
F		Left-hand cable outlet		
Q	M8 connection	Without cable	5 studs M14 x 1.5 on dia. 140	
R		Right-hand cable outlet		
S		Left-hand cable outlet		
T	Hook connection	Right-hand cable outlet		
U		Left-hand cable outlet		

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.**

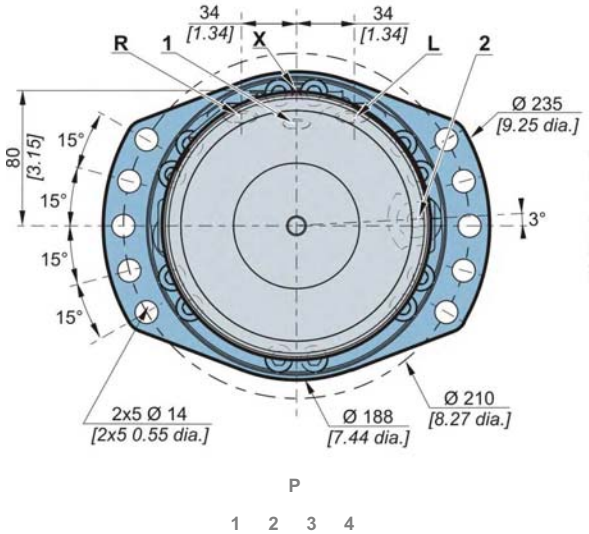
This document also includes essential operating instructions for the product and general information. These are indicated in the following way:

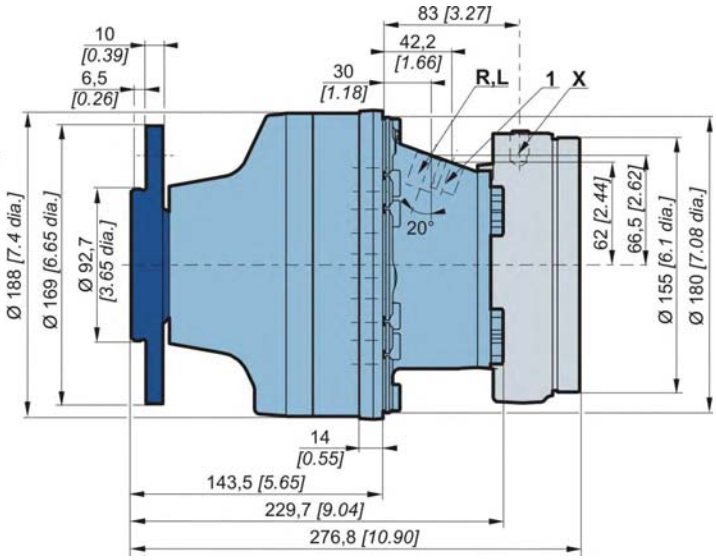
	**Essential instructions.**
	**General information .**
	**Information on the model number.Information on the model code.**
	**Weight of component without oil.**
	**Volume of oil.**
	**Units.**
	**Tightening torque.**
	**Screws.**
	**Information intended for Poclain-Hydraulics personnel.**

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)

WHEEL MOTOR

Dimensions for standard 1-displacement motor



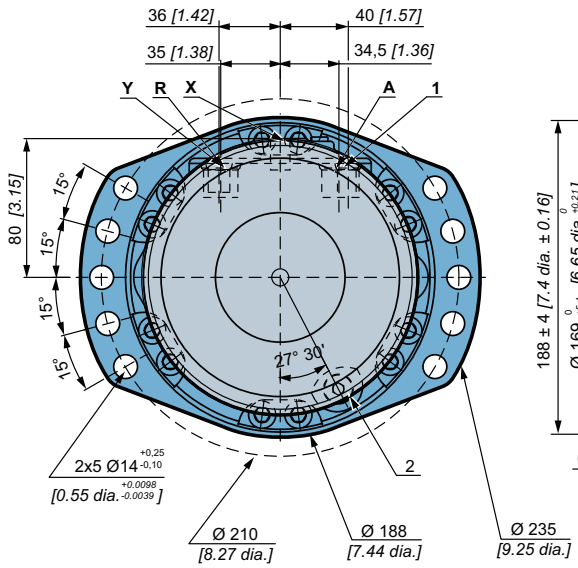


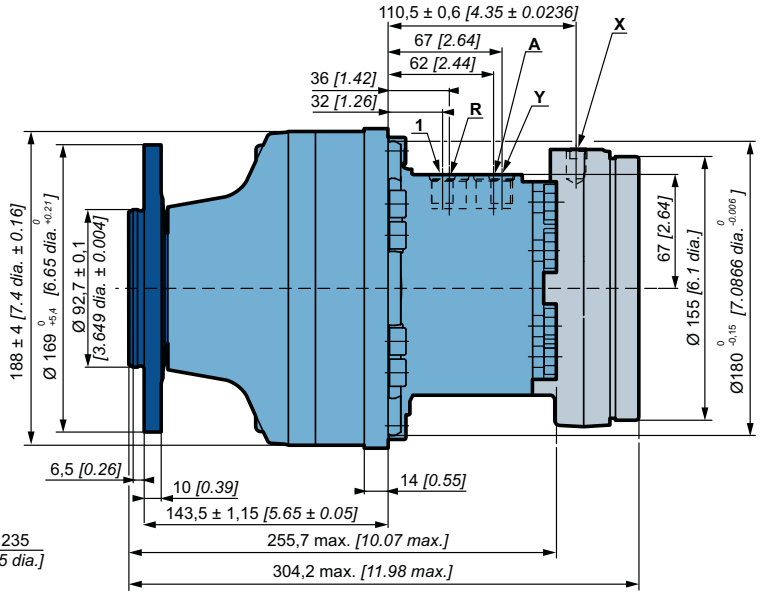
P

1	2	3	4
1	1	1	0

	Without brake	With brake
	26 kg [57 lb]	32 kg [70 lb]
	0,80 L [48 cu.in]	0,70 L [42 cu.in]

Dimensions for standard 2-displacements motor



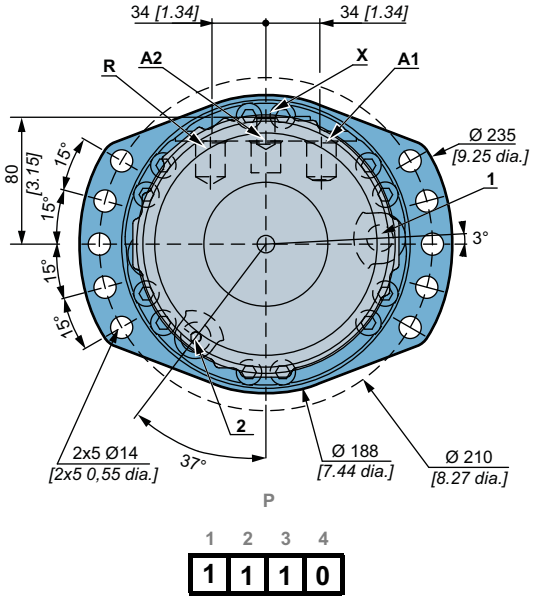


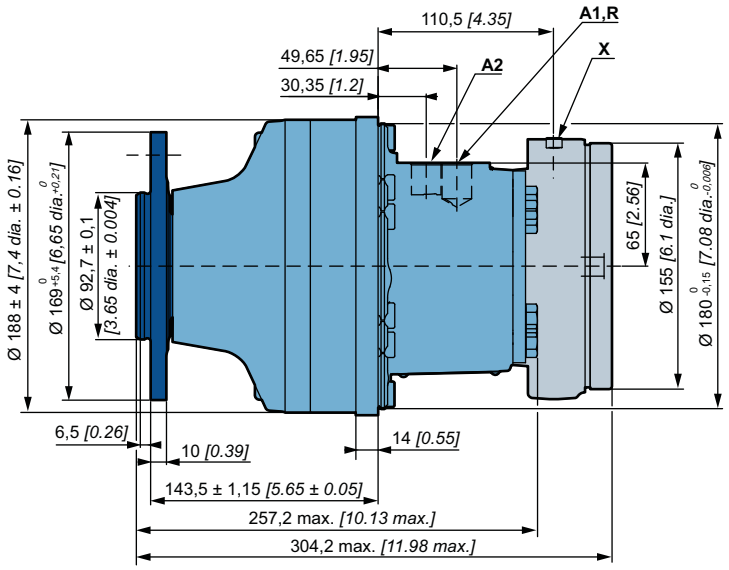
P

1	2	3	4
1	1	1	0

	Without brake	With brake
	28 kg [62 lb]	34 kg [75 lb]
	1,00 L [60 cu.in]	1,00 L [60 cu.in]

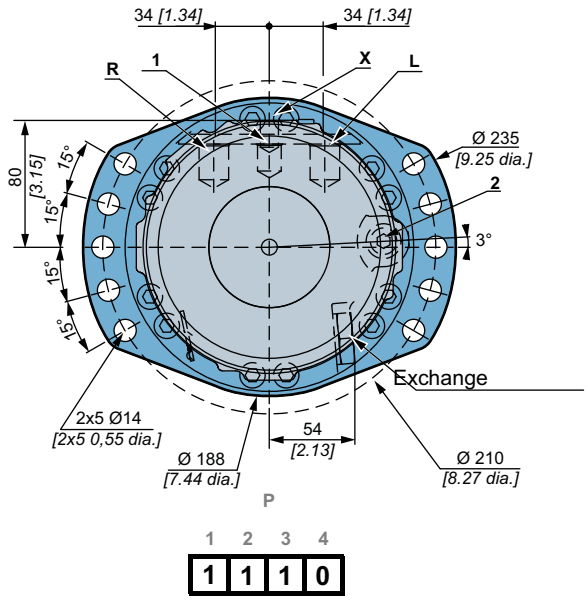
Dimensions for standard Twin-Lock™ motor

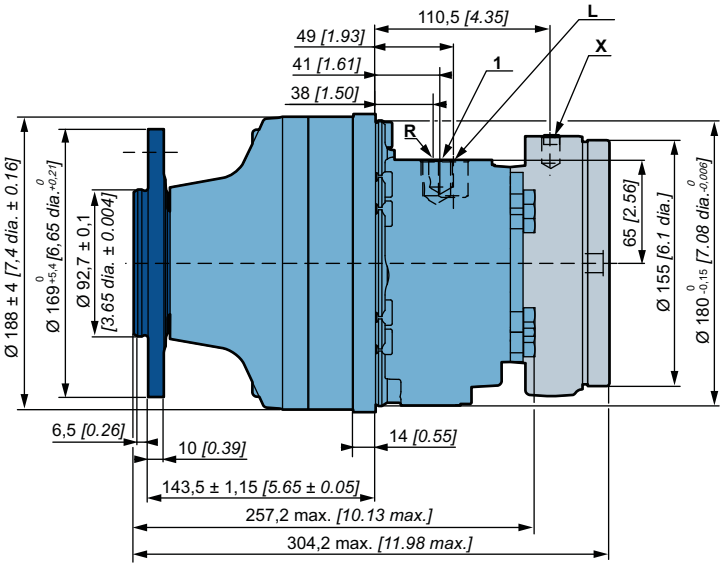




	Without brake	With brake
	28 kg [62 lb]	34 kg [75 lb]
	1,00 L [60 cu.in]	1,00 L [60 cu.in]

Dimensions for standard motor with exchange

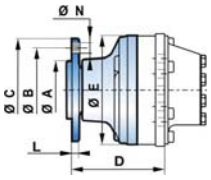
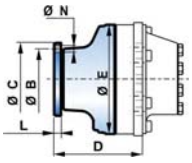
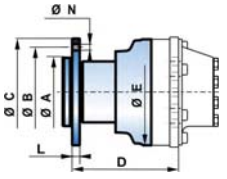
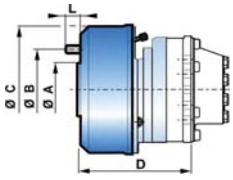




	Without brake	With brake
	28 kg [62 lb]	34 kg [75 lb]
	1,05 L [63 cu.in]	1,05 L [63 cu.in]

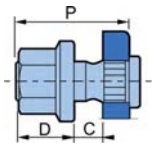
Support types

	C	D	F	P	S
MS02	1	1 2 3	1 2 3	1 2 3 4	1 2 3 4 5 6
MSE02					Y

P	A mm *[in]*	B mm *[in]*	C mm *[in]*	D mm *[in]*	E mm *[in]*	N mm *[in]*	Wheel rim mountings	L mm *[in]*	
1 1 1 0	Ø 92,7 *[3,65 dia.]*	Ø 140 *[5,51 dia.]*	Ø 169 *[6,65 dia.]*	143,4 *[5,65]*	Ø 179,5 *[7,07 dia.]*	Ø 18 *[0,71 dia.]*	5 x M14x1.5	10 *[0,39]*	
1 7 1 0	Ø 77,6 *[3,06 dia.]*	Ø 130 *[5,12 dia.]*	Ø 169 *[6,65 dia.]*	140,6 *[5,54]*	Ø 179,5 *[7,07 dia.]*	Ø 18 *[0,71 dia.]*	5 x M14x1.5	10 *[0,39]*	
1 2 4 0	- -	Ø 100 *[3,94 dia.]*	Ø 120 *[4,72 dia.]*	142,9 *[5,63]*	Ø 179,5 *[7,07 dia.]*	10 x M12x1.75	-	11,25 *[0,44]*	
1 G 1 0	Ø 92,7 *[3,65 dia.]*	Ø 140 *[5,51 dia.]*	Ø 168 *[6,61 dia.]*	185,5 *[7,30]*	Ø 179,5 *[7,07 dia.]*	Ø 18 *[0,71 dia.]*	5 x M14x1.5	12 *[0,47]*	
1 H 3 / 1 J 3	– –	Ø 160 *[6,30 dia.]*	Ø 221 *[8,70 dia.]*	193 *[7,60]*			5 x M16x1.5	30,5 *[1,20]*	
1 K 3 / 1 L 3	Ø 92,7 *[3,65 dia.]*	Ø 140 *[5,51 dia.]*	Ø 221 *[8,70 dia.]*	193 *[7,60]*			5 x M14x1.5	25,5 *[1,00]*	

Also see 'Brakes' section (thumbnail opposite).

Studs



		P mm *[in]*	C min. mm *[in]*	C max. mm *[in]*	D mm *[in]*	Class	N.m *[lb.ft]*	N.m *[lb.ft]*
Standard studs	M14x1.5	45 *[1.77]*	5 *[0.20]*	18 *[0.71]*	16,5 *[0.65]*	12,9	200 *[147.5]*	250 *[184.4]*

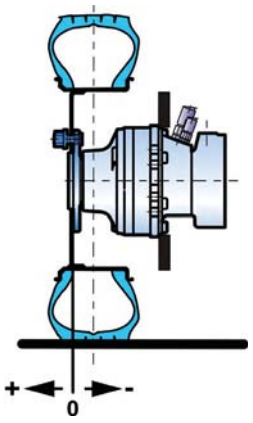
(*) The tightening torques are given for the indicated loads.
(1) Wheel rim : Suggested tightening torque for wheel rim mountings (Re steel disc > 240 N/mm² *[>34 800 PSI]*).
(2) Standard : Suggested tightening torque in other cases (Re steel flange 360 > N/mm² *[>52 215 PSI]*)

See option G for non standard studs.

See generic installation motors N°801478197L.

Radial load and service life of bearings curves

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.

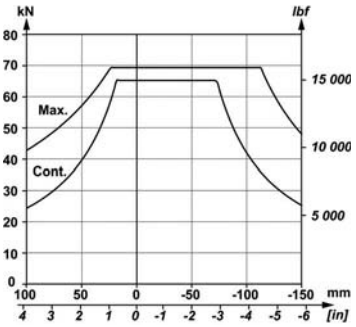


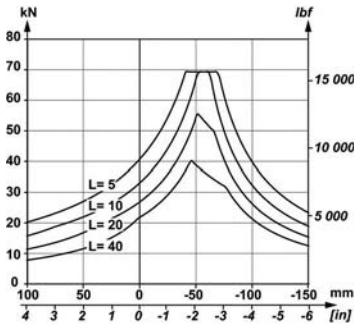
Permissible radial loads	Service life of bearings
Max. permissible loads: 0 tr/min *[0 RPM]*; 0 bar *[0 PSI].*	**L :** Millions B10 revolutions at 150 bars (average pressure), with 25 cSt fluid.
Continuous permissible loads: > 0 tr/min *[> 0 RPM]*; 275 bar *[3 988 PSI].*	

Test conditions: code 0 displacement, without axial load, shaft treated, class 10.9 and 12.9 chassis mountings class 12.9 wheel rim mountings.

P

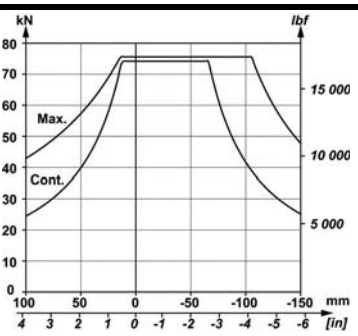
1	2	3	4
1	1	1	0
1	7	1	0

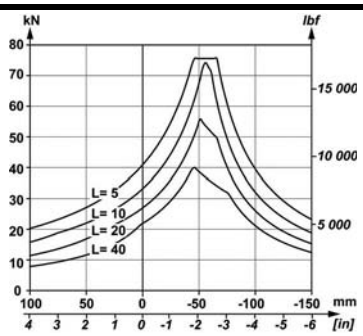




P

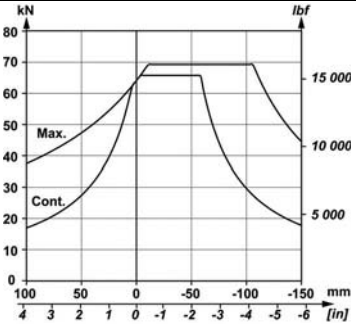
1	2	3	4
1	2	4	0

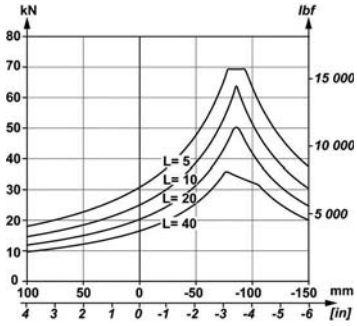




P

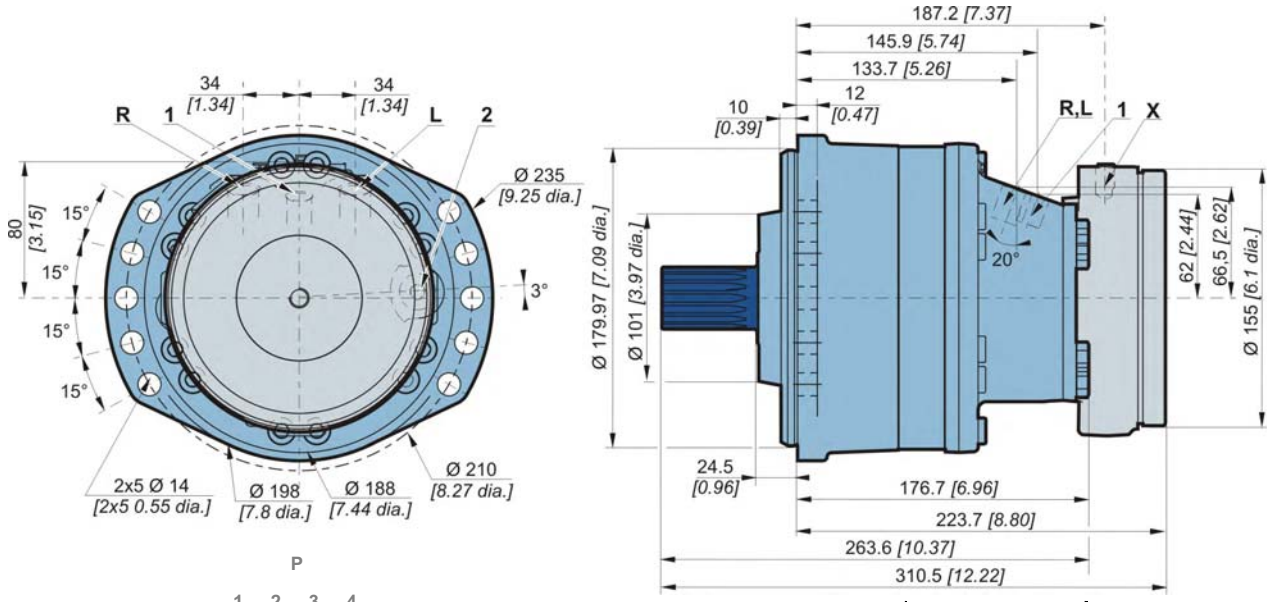
1	2	3	4
1	G	1	
1	H	3	
1	J	3	
1	K	3	
1	L	3	





SHAFT MOTOR

Dimensions for standard 1-displacement motor

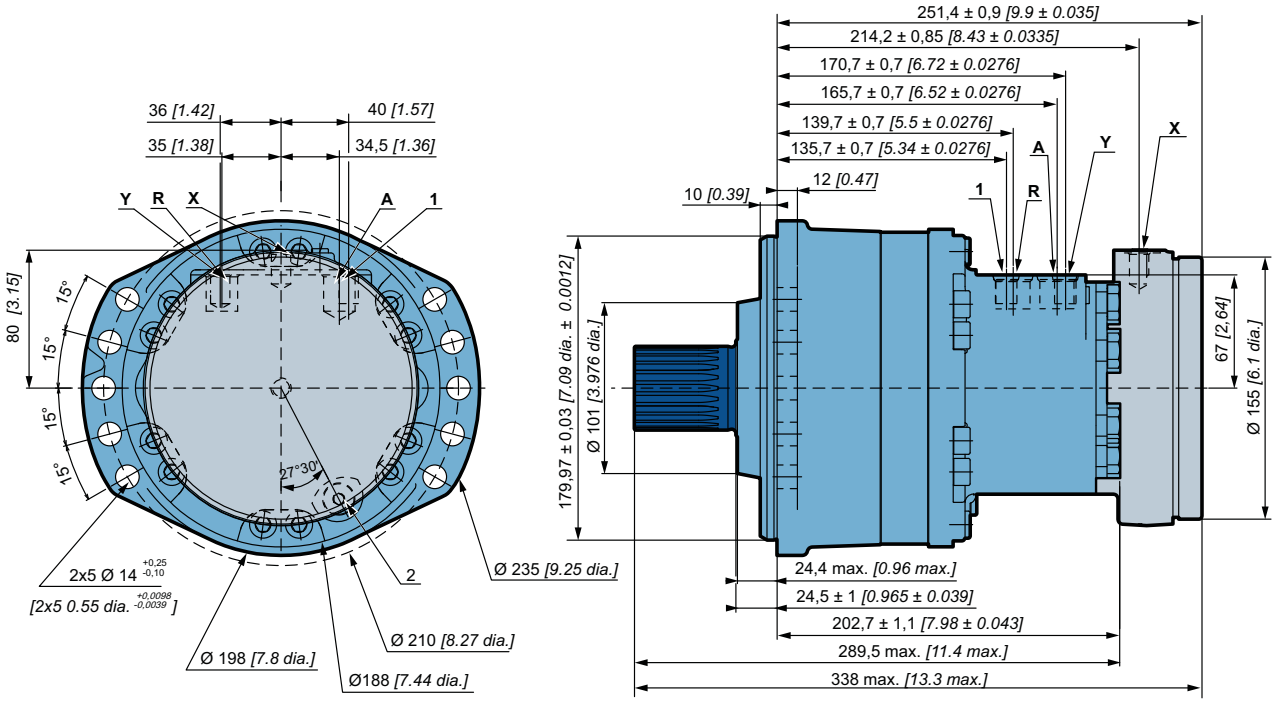


P

1	2	3	4
2	A	5	0

	Without brake	With brake
	26 kg *[57 lb]*	32 kg *[70 lb]*
	0,80 L *[48 cu.in]*	0,70 L *[42 cu.in]*

Dimensions for standard 2-displacements motor

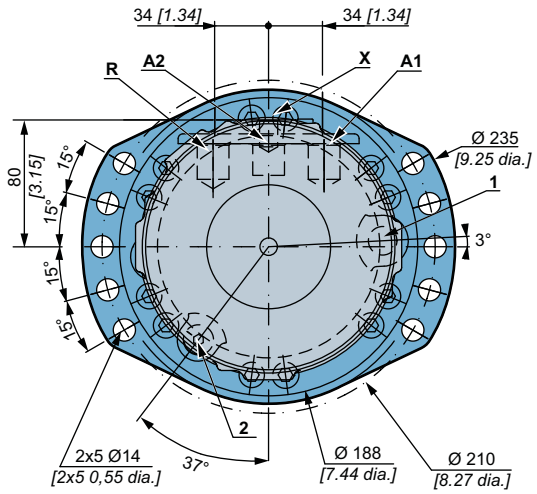


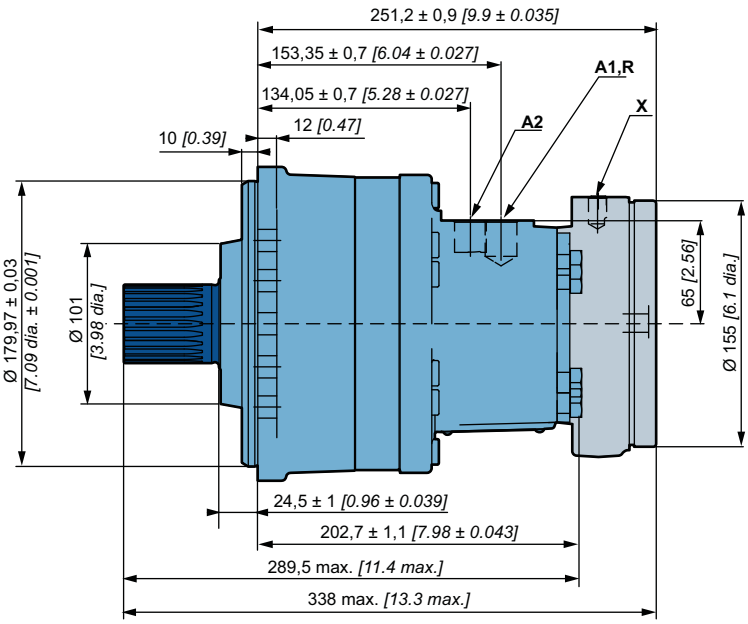
P

1	2	3	4
2	A	5	0

	Without brake	With brake
	30 kg *[66 lb]*	36 kg *[79 lb]*
	1,00 L *[60 cu.in]*	1,00 L *[60 cu.in]*

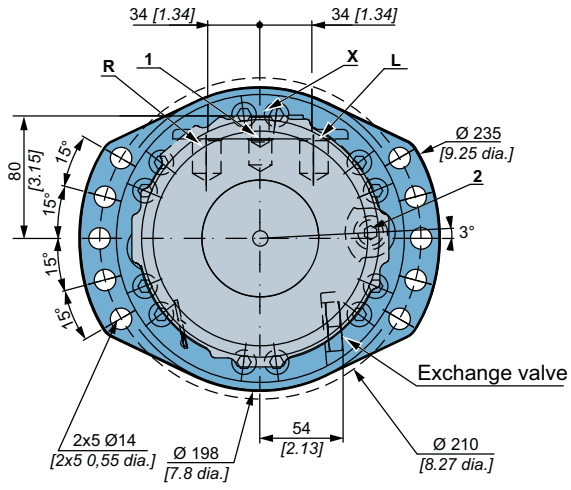
Dimensions for standard Twin-Lock™ motor

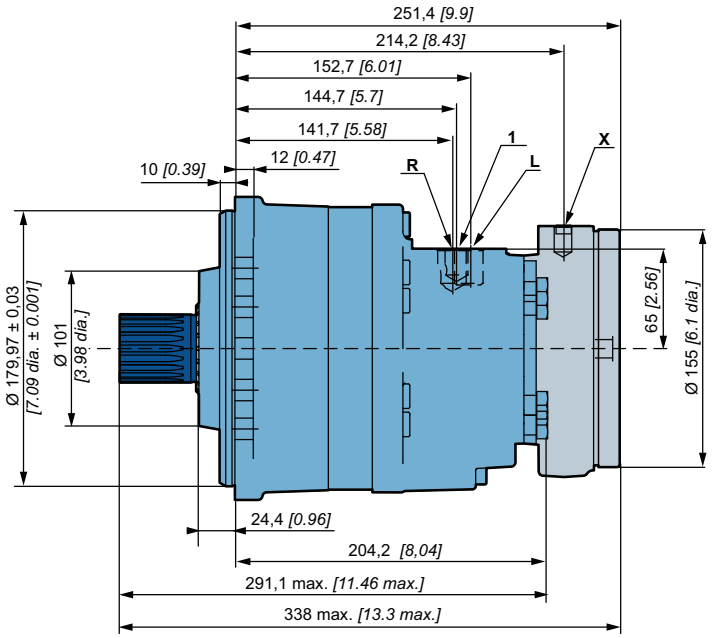




1	2	3	4
2	A	5	0

Dimensions for standard motor with exchange

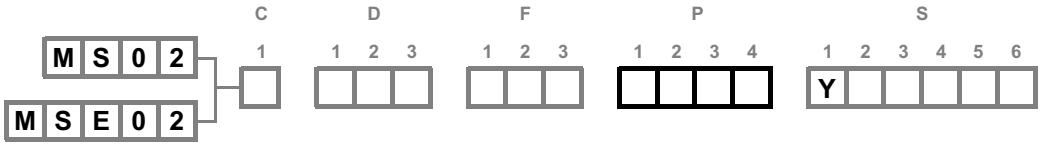


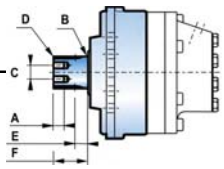
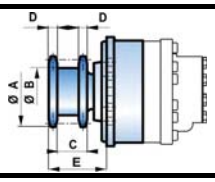


1	2	3	4
2	A	5	0

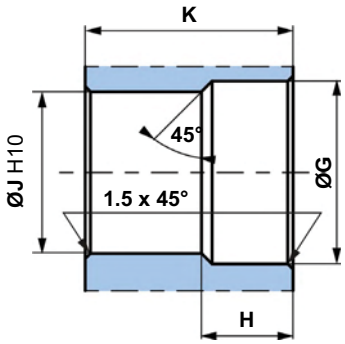
	Without brake	With brake
	30 kg [66 lb]	36 kg [79 lb]
	1,05 L [63 cu.in]	1,05 L [63 cu.in]

Support types



C		A mm *[in]*	B mm *[in]*	mm *[in]*	mm *[in]*	mm *[in]*	mm *[in]*	
2 A 1 0 (1 2 3 4 / P)	**NF E22-141** splines Nominal Ø 40 *[1,57]* Module 1.667 Number of teeth 22	15 *[0,59]*	R 2 *[R 0,08]*	23,8 *[0,94]*	2 x M10	19 *[0,75]*	49 *[1,93]*	
2 A 5 0 (1 2 3 4 / P)	**DIN 5480** splines Nominal Ø 50 *[1,97]* Module 2 Number of teeth 24	15 *[0,59]*	R 2,5 *[R 0,10]*	23,8 *[0,94]*	2 x M10	22 *[0,87]*	60 *[2,36]*	
2 A C 0 (1 2 3 4 / P)	**ANSI B29-1** or **ISO 606** pinion Chain no. 80 Number of teeth 14 Pitch 25,4 Pitch Ø 114,2 *[4,49]*	Ø126,5 *[4,98 dia.]*	Ø 84 *[3,31 dia.]*	51,6 *[2,03]*	14,6 *[0,57]*	99,5 *[3,92]*	- -	

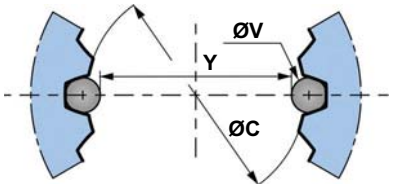
Splined coupling



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

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

Standard NF E 22-141
Pressure angle 20°.
Centering on flanks.
Slide adjustment (7H quality).

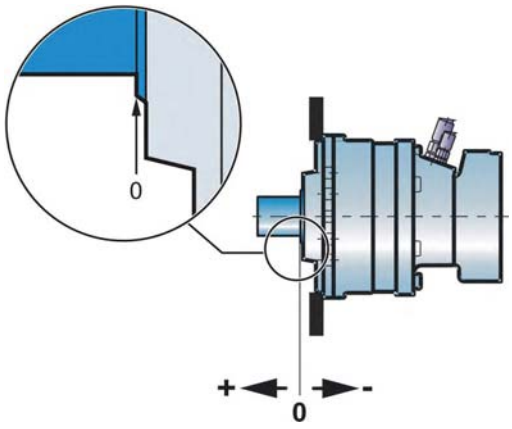


C	Ø G mm *[in]*	H mm *[in]*	Ø J mm *[in]*	K mm *[in]*	N mm *[in]*	Mo	Z	Offset	(H10) mm *[in]*	Ø V mm *[in]*	Y mm *[in]*	Tolerance (Y) µm *[µin]*
2 A 1 0 (1 2 3 4 / P)	41,3 *[1,62]*	20 *[0,79]*	36,7 *[1,44]*	48,3 *[1,90]*	40 *[1,57]*	1,667	22	-	36,7 *[1,44]*	3,5 *[0,14]*	33,446 *[1,32]*	+ 86 / 0 *[+3.385 / 0]*
2 A 5 0 (1 2 3 4 / P)	51,5 *[2,03]*	23 *[0,91]*	46 *[1,81]*	59 *[2,32]*	50 *[1,97]*	2	24	-0,1 *[-0,0039]*	46 *[1,81]*	3,5 *[0,14]*	42,6 *[1,68]*	+ 72 / 0 *[+2.832 / 0]*

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]*.

Radial load and service life of bearings curves

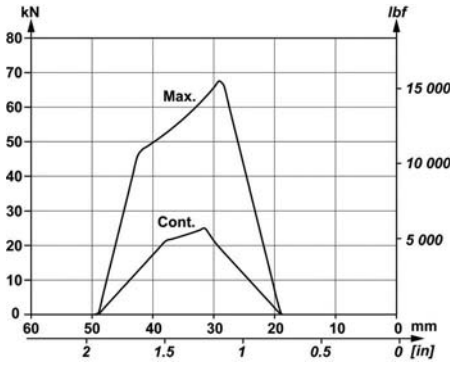
The service life of the components is influenced by the pressure.You must check that the combination of forces applied (Axial load / Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications.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

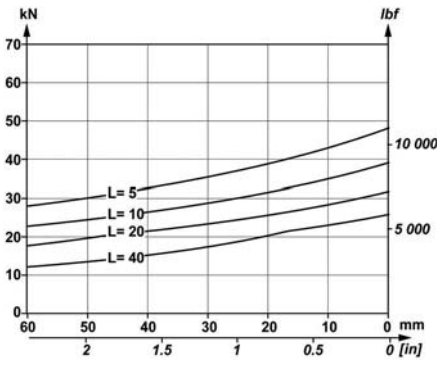


Permissible radial loads	Service life of bearings
Max. permissible loads: 0 tr/min *[0 RPM]*; 0 bar *[0 PSI].*	**L :** Millions B10 revolutions at 150 bars (average pressure), with 25 cSt fluid.
Continuous permissible loads: > 0 tr/min *[> 0 RPM]*; 275 bar *[3 988 PSI].*	

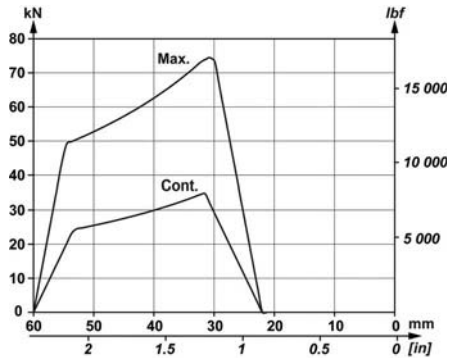
Test conditions: code 0 displacement, without axial load, shaft treated, class 10.9 and 12.9 chassis mountings.

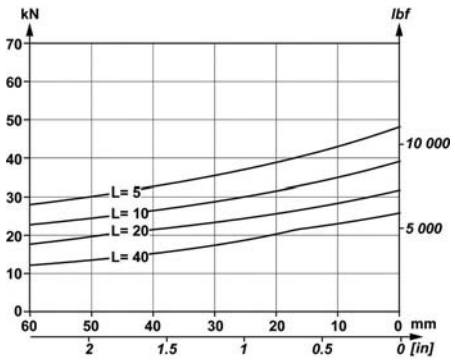
2 A 1 0
1 2 3 4
P





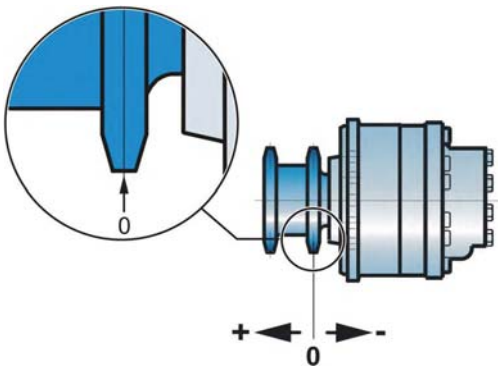
2 A 5 0
1 2 3 4
P





Radial load and service life of bearings curves

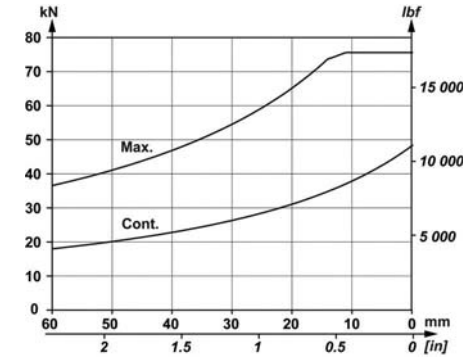
The service life of the components is influenced by the pressure.You must check that the combination of forces applied (Axial load / Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications.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

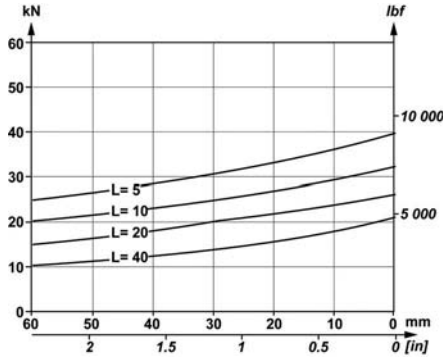


Permissible radial loads	Service life of bearings
Max. permissible loads: 0 tr/min *[0 RPM]*; 0 bar *[0 PSI].*	**L :** Millions B10 revolutions at 150 bars (average pressure), with 25 cSt fluid.
Continuous permissible loads: > 0 tr/min *[> 0 RPM]*; 275 bar *[3 988 PSI].*	

Test conditions: code 0 displacement, without axial load, shaft treated, class 10.9 and 12.9 chassis mountings.

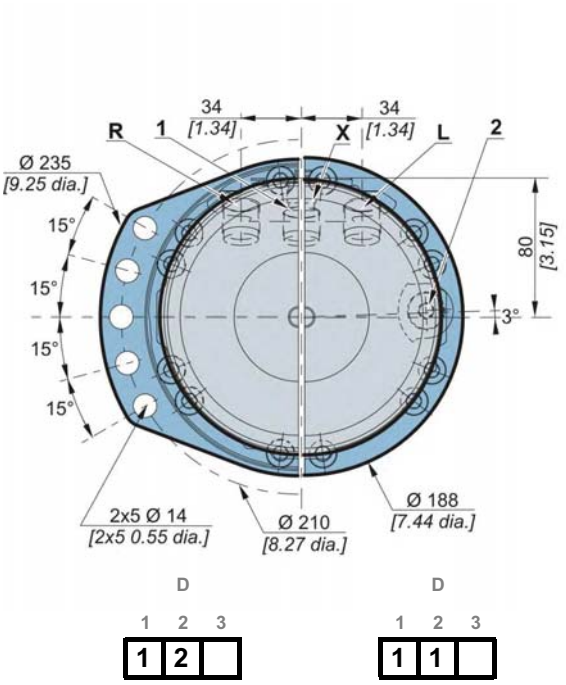
2	A	C	0
1	2	3	4
P			

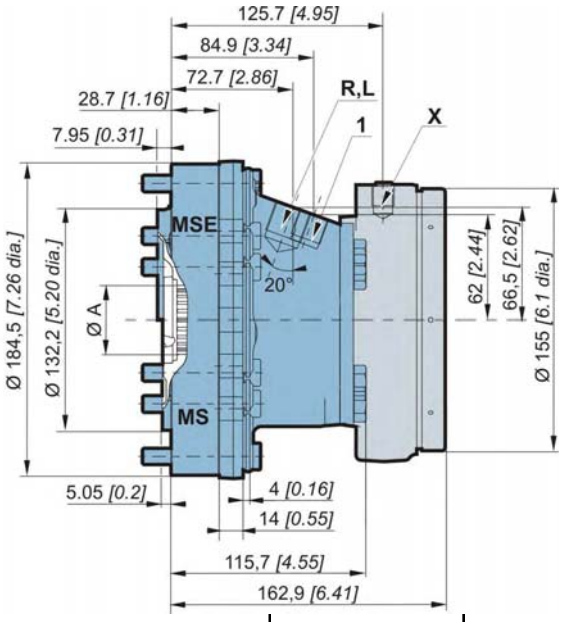




HYDROBASES

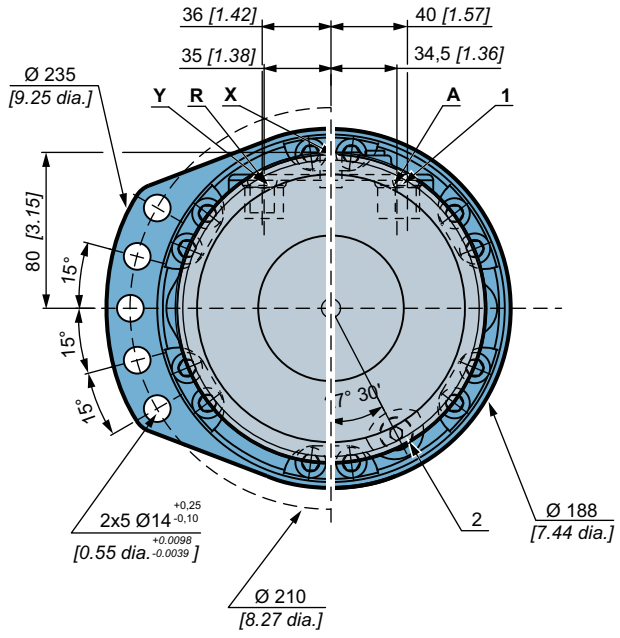
Dimensions for 1-displacement hydrobase

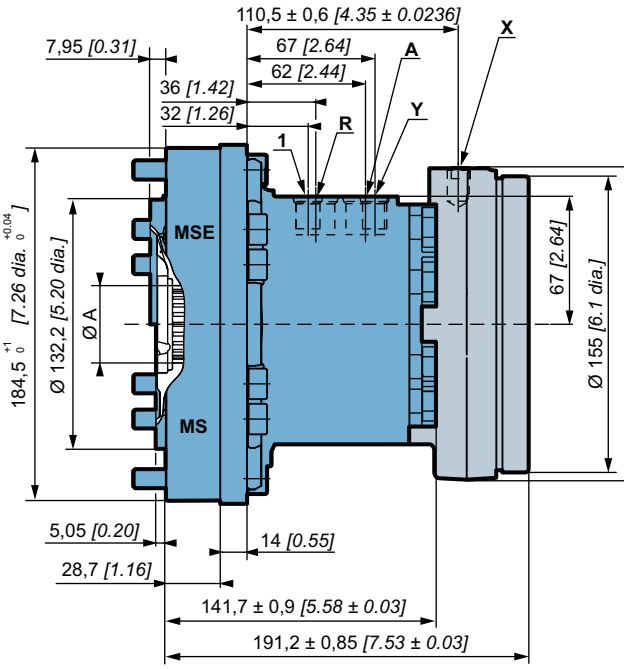




	Without brake	With brake
	13,8 kg *[30 lb]*	19,9 kg *[44 lb]*
	0,35 L *[21 cu.in]*	0,45 L *[27 cu.in]*

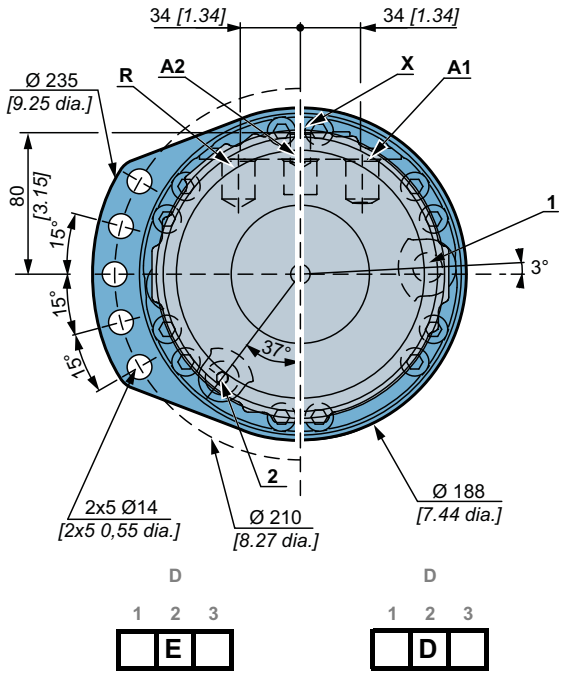
Dimensions for 2-displacements hydrobase

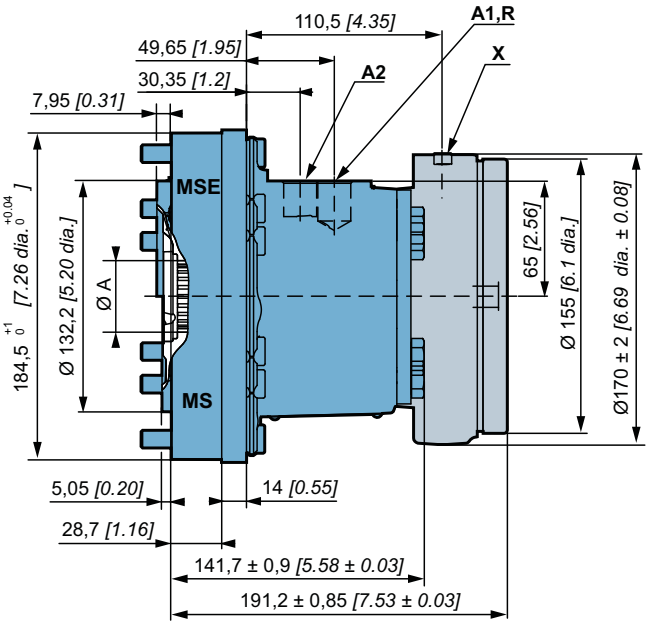




	Without brake	With brake
	18,8 kg *[41 lb]*	24,9 kg *[55 lb]*
	0,35 L *[21 cu.in]*	0,45 L *[27 cu.in]*

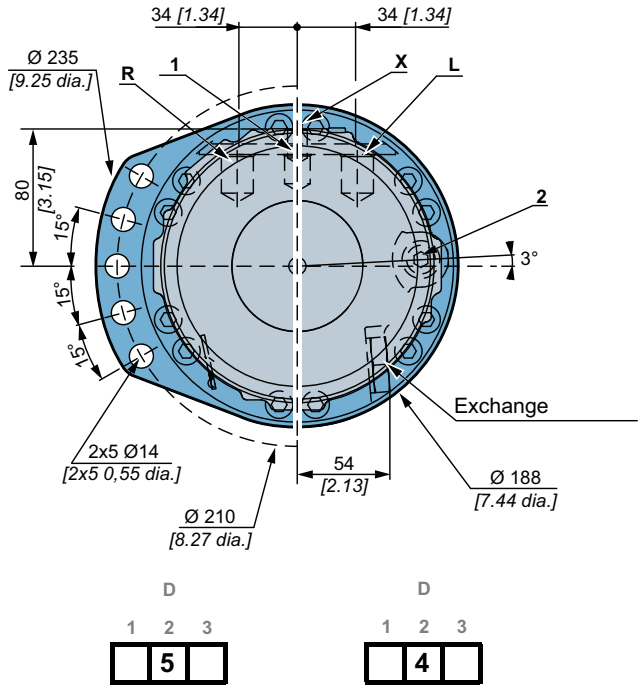
Dimensions for Twin-Lock™ hydrobase

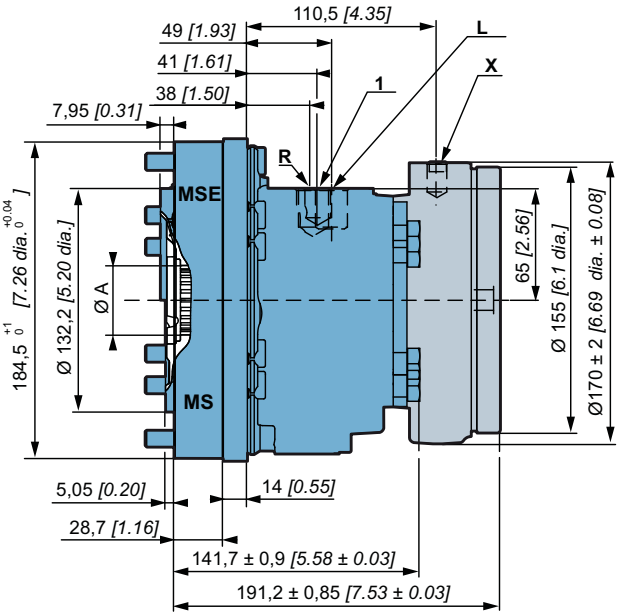




	Without brake	With brake
	18,8 kg [41 lb]	24,9 kg [55 lb]
	0,35 L [21 cu.in]	0,45 L [27 cu.in]

Dimensions for hydrobase with exchange



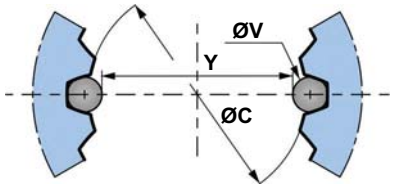


	Without brake	With brake
	19 kg [42 lb]	25,1 kg [55 lb]
	0,40 L [24 cu.in]	0,50 L [30 cu.in]

Cylinder block splines

(as per standard NF E22-141)

ØA	Module	Z	Dimension on 2 pins Y	ØV	ØC
40 *[1,575]*	1,667	22	33,446 *[1,317]*	3,33 *[0,131]*	36,72 *[1,446]*



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.

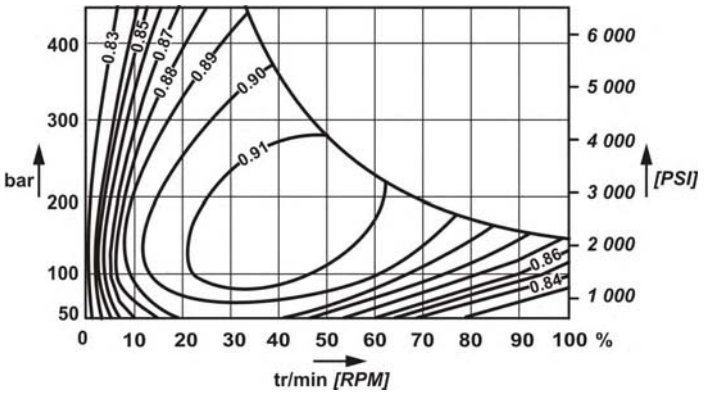
Efficiency and output torque

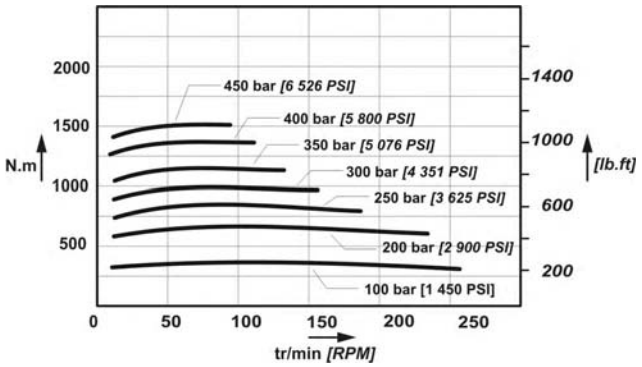
Overall efficiency

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

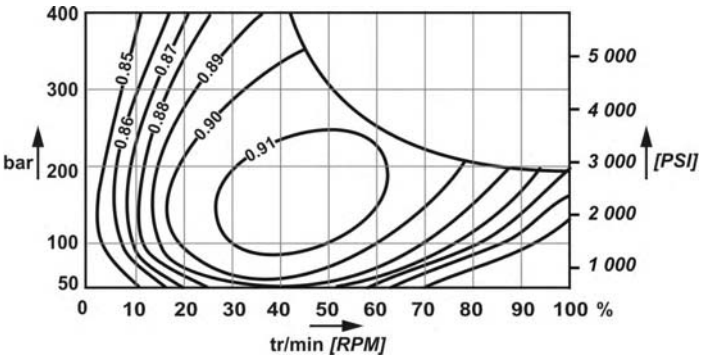
Actual output torque

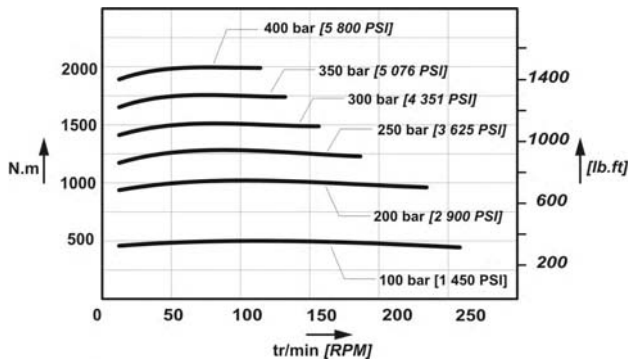
MS02





MSE02

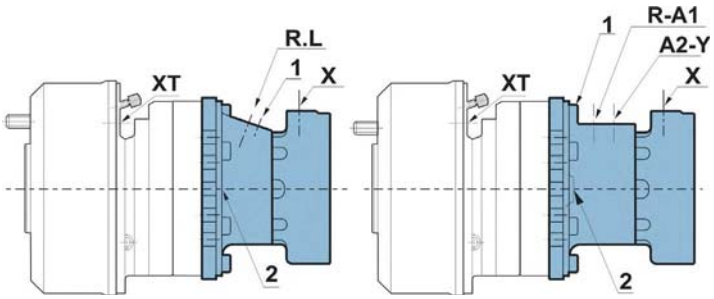


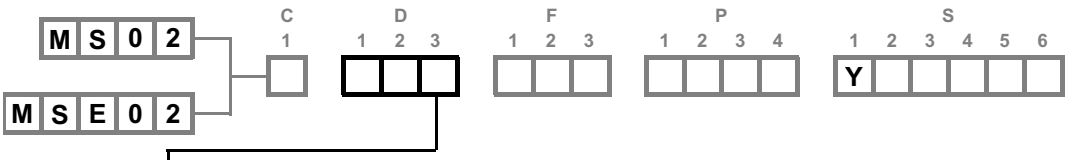


The starting torque is taken to be approximately 85% of the first value for available pressure. For a precise calculation, consult your Poclain Hydraulics application engineer.

VALVING SYSTEMS

Hydraulic connections





			Standards	Power supply	Case drain		2nd displacement control	Control of parking brake	Control of drum brake
				R-L	**1 - 2**			**X**	**XT**
	A	UNF (SAE)	**ISO 11 926-1**	7/8"-14 UNF	3/4"-16 UNF			9/16"-18 UNF	
	3	Gaz (BSPP)	**ISO 1 179-1**	G1/2	G3/8			G1/4	
	4	Metric	**ISO 9 974-1**	M22x1.5	M18x1.5			M14x1.5	
				R-A	**1 - 2**		**Y**	**X**	
	A	UNF (SAE)	**ISO 11 926-1**	7/8"-14 UNF	9/16"-18 UNF		9/16"-18 UNF	9/16"-18 UNF	
	3	Gaz (BSPP)	**ISO 1 179-1**	G1/2	G1/4		G1/4	G1/4	
	4	Metric	**ISO 9 974-1**	M22x1.5	M14x1.5		M14x1.5	M14x1.5	
				R-A1-A2	**1**	**2**		**X**	
	A	UNF (SAE)	**ISO 11 926-1**	7/8"-14 UNF	3/4"	9/16"		9/16"-18 UNF	
	3	Gaz (BSPP)	**ISO 1 179-1**	G1/2	M18	M14		G1/4	
	4	Metric	**ISO 9 974-1**	M22x1.5	G3/4	G1/4		M14x1.5	
			ISO 9 974-1						M10x1.0
Max. pressures			**MS** bar *[PSI]*	450 *[6 527]*	2,5 *[36]*		30 *[435]*	30 *[435]*	120 *[1 740]*
			MSE bar *[PSI]*	400 *[5 802]*					
Instantaneous pressure peaks resistance			bar *[PSI]*		15 *[218]*				

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

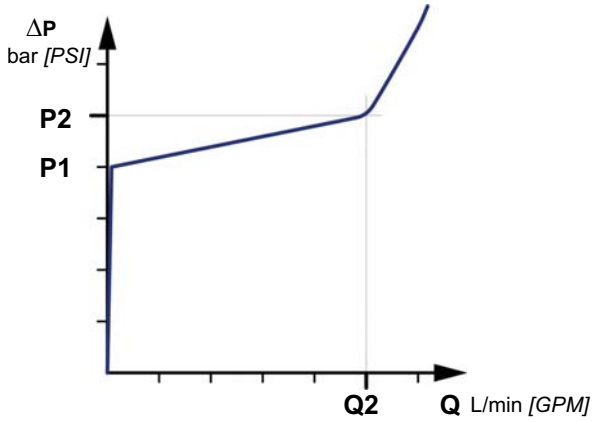
To find the connections' tightening torques, see the brochure "Installation guide" N° 801478197L.

Exchange

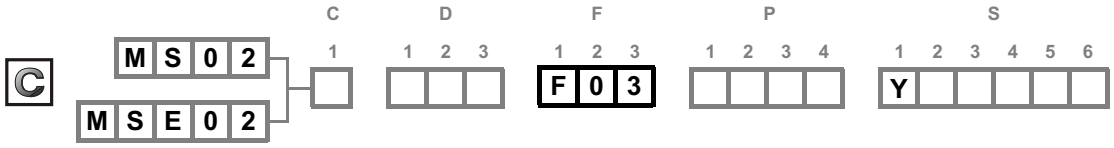
When a codification is requested, you must specify needed characteristics.

- Fitted valve

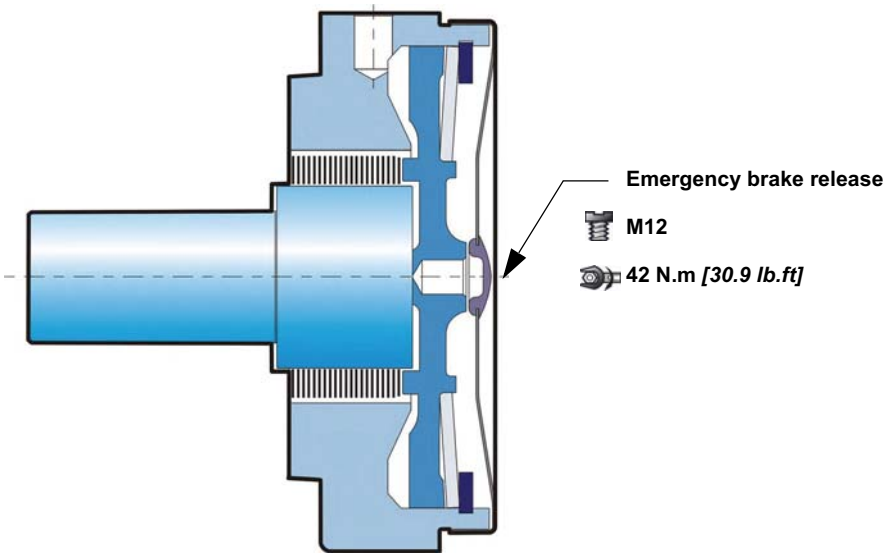
Opening pressure of selector bar *[PSI]*	**P1** bar *[PSI]*	**Q2** L/min *[GPM]*	**P2** bar *[PSI]*
10,0±1,0 *[145±14.5]*	15 *[218]*	9,5±2,5 *[2,51±0.66]*	25 *[363]*
8,5±1,5 *[123±21.75]*	20 *[290]*	13,0±1,0 *[3,43±0.26]*	31 *[450]*
8,5±1,5 *[123±21.75]*	18 *[261]*	3,7±0,5 *[0,98±0.13]*	24 *[348]*



BRAKES



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

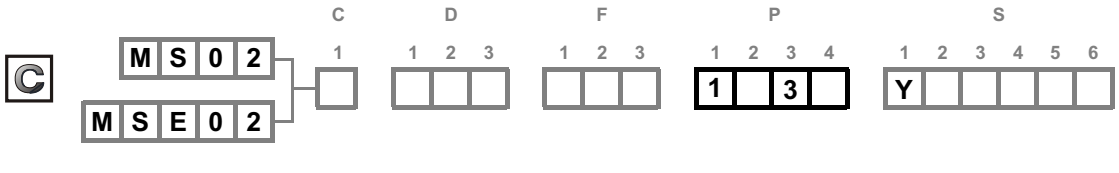
* After emergency brake has been used

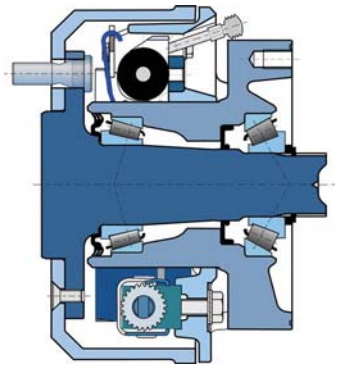
Do not run-in the multidisc brakes.

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/hour, please contact your Poclain Hydraulics application engineer.

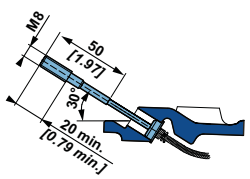
Drum brake(200 x 40 or 203 x 60)

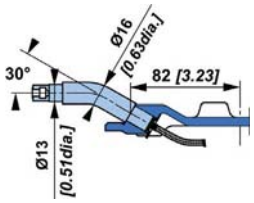
Diameter of brake pads : Ø 200 *[7.87 dia.]* or Ø 203 *[7.99 dia.]*
Width of friction surface : 40 *[1.57]* or 60 *[2.36]*





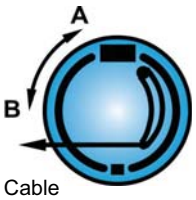
	Without cable	M8 connection	Hook connection
200 x 40	●	●	
203 x 60	●	●	●





Brake pads		200 x 40	203 x 60
Asbestos free material		BERAL 1106	BERAL 1117 or JURID 421
Compensation for wear		Automatic	Automatic
Hydraulically controlled dynamic braking			
Max. permissible continuous brake torque		780 N.m *[575 lb.ft]*	1 650 N.m *[1 217 lb.ft]*
Pressure to obtain max. permissible continuous brake torque		73 bar *[1 059 PSI]*	73 bar *[1 059 PSI]*
Max. permissible brake torque		1 300 N.m *[959 lb.ft]*	2 750 N.m *[2 028 lb.ft]*
Pressure to obtain max. permissible brake torque		120 bar *[1 740 PSI]*	120 bar *[1 740 PSI]*
Fluid			
Mineral		C **H** Yes	C **K** Yes
DOT 3/DOT4/SAE J1703		C **J** Yes	C **L** Yes
Max. volume required to bring pads into contact		1,2 cm³ *[0,07 cu.in]*	2,3 cm³ *[0,14 cu.in]*
Mechanically controlled parking brake			
Max. braking torque		1 300 N.m *[959 lb.ft]*	2 750 N.m *[2 028 lb.ft]*
Max permissible force on the cable		780 N *[175 lbf]*	1 650 N *[371 lbf]*
Force required to bring pads into contact		20 N *[4 lbf]*	37 N *[8 lbf]*
Stroke required to bring pads into contact	**A**	7,4 mm *[0,29 "]*	7,0 mm *[0,28 "]*
	B	8,5 mm *[0,33 "]*	8,5 mm *[0,33 "]*
Max. stroke before automatic brake adjustment	**A**	11,1 mm *[0,44 "]*	9,5 mm *[0,37 "]*
	B	12,8 mm *[0,50 "]*	10,5 mm *[0,41 "]*

End view of shaft



The max. braking torque can only be obtained when the brake has been run in. Consult your Poclain Hydraulics application engineer.

Control

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

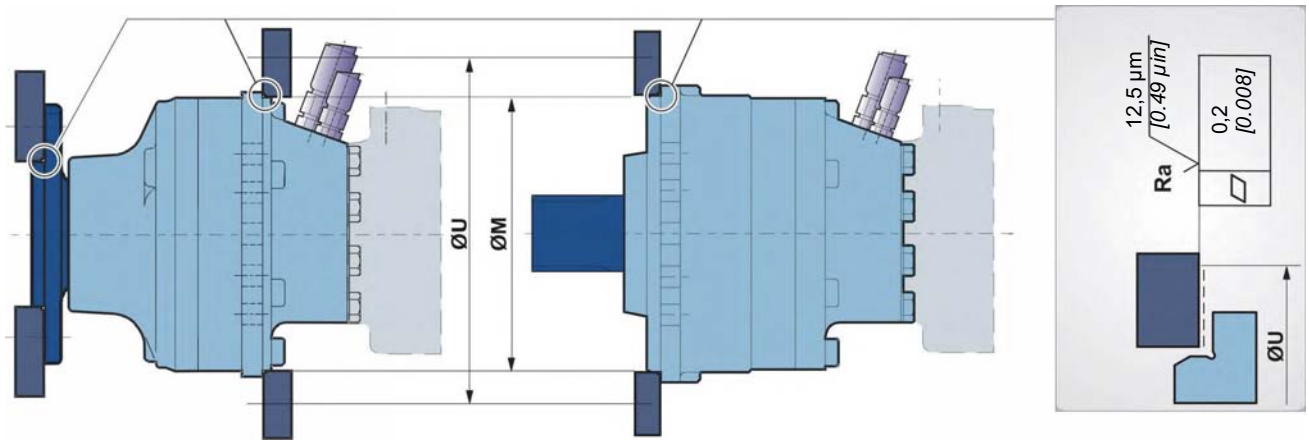
Do not use hydraulic and mechanical brake controls simultaneously.

See also 'Wheel motor' section (thumbnail opposite)

When making a codification request, you must indicate the following information:
- The material of the brake linings,
- Fill out the technical questionnaire for validation of the brake.

INSTALLATION

Customer's chassis and wheel rim mountings



Take care over the immediate environment of the connections.

ØU mm *[in]*	ØM (1) mm *[in]*		Class	*
240,00 *[9,45]*	180,25 *[7,10]*	10 M12 x 1,75	10.9	120 N.m *[89 lb.ft]*
			12.9	145 N.m *[107 lb.ft]*

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

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

You don't need to chamfer your chassis and wheel rim.

For more information see technical catalogue '' Installation guide N° 801478197L.

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.

OPTIONS

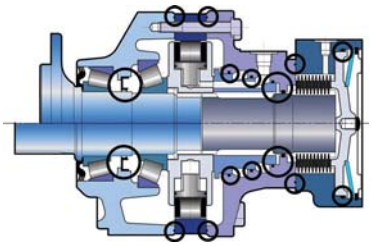
	C	D	F	P	S
	1	1 2 3	1 2 3	1 2 3 4	1 2 3 4 5 6
MS02					Y
MSE02					

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

Y Additional drain on valving systems (Steel plug) and Reinforced sealing

1 Fluorinated elastomer seals

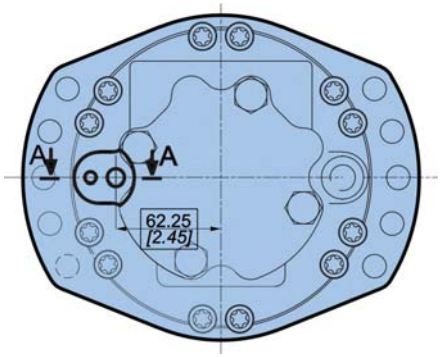
Nitrile seals marked in the figure below replaced by fluorinated elastomer seals.

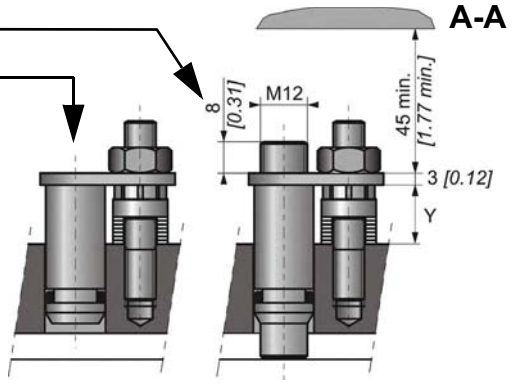


Consult your Poclain Hydraulics sales engineer.

2 S 8 Installed speed sensor or predisposition

Designation	C
T4 Speed sensor installed	2
TR Speed sensor installed (direction of rotation)	S
Predisposition for speed sensor	8





Max. length Y = 21,5 *[0.85]*

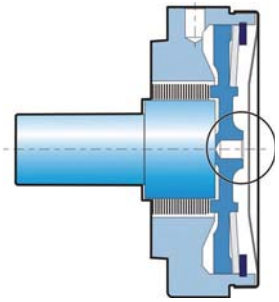
Standard number of pulses per revolution = 40

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.



6 Industrial support

Reduction of around 50% from the rated value in the bearings' preload value. Without external loads, increases the lifetime of the bearing support.

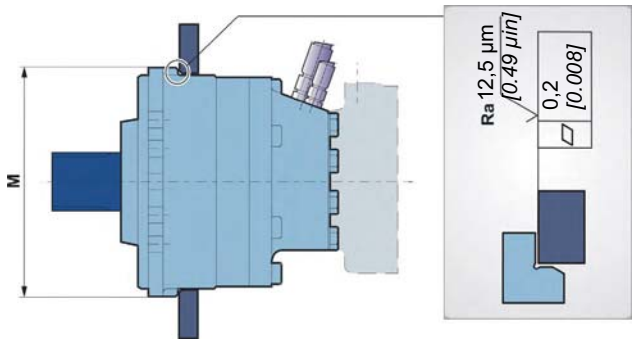
For a precise calculation, consult your Poclain Hydraulics application engineer.

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 Chassis mounting on cam ring side

Only available for shaft motors.

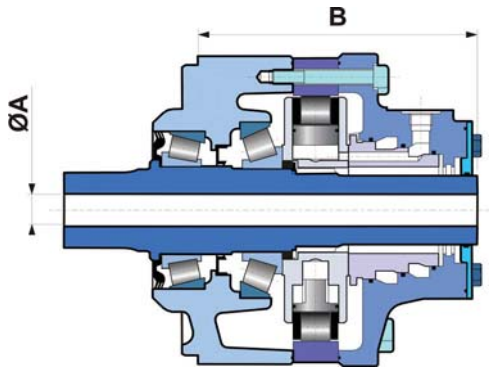


ØM (1)		Class	*
190,30 [7,49]	10 M12 x 1,75	10.9	120 N.m [89 lb.ft]
		12.9	145 N.m [107 lb.ft]

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

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

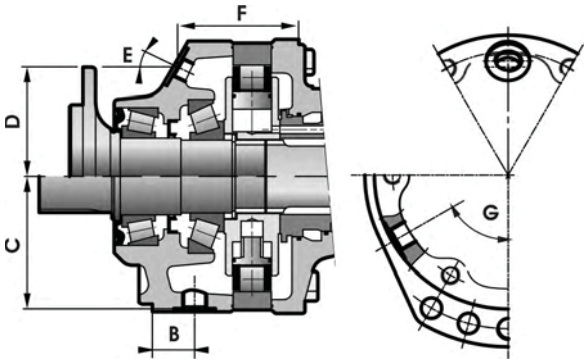
A Hollow shaft



A mm *[in]*	B mm *[in]*
Ø 15 *[0,59 dia.]*	175,2 ± 1,25 *[6,90] ±[0,05]*

Radial load x 0.75
No torque transmittable to the rear

B Drain on the bearing support



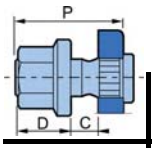
	GAZ (BSPP) ISO 1179-1	B mm *[in]*	C mm *[in]*	D mm *[in]*	E	F mm *[in]*	G
Wheel motor	**G1/4**	—	—	73,1±0.5 *[2,88±0.019]*	25°	76,1±0.9 *[3,00±0.035]*	-
Shaft motor	**G3/8**	33±0.5 *[1,3±0.019]*	90±0.5 *[3,54±0.019]*	—	-	—	60°

D Special paint or no paint

The motors are delivered with Poclain Hydraulics yellow ochre primer as standard.

Consult your Poclain Hydraulics application engineer for other colors of primer or topcoat.

G Special wheel rim mounting



		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]*
Various studs	M14x1.5	50 *[1,97]*	5 *[0,20]*	23 *[0,91]*	16,5 *[0,65]*	**12.9**	200 *[147,5]*	250 *[184,4]*
	M14x1.5	62 *[2,44]*		33 *[1,30]*				
	M16x1.5	50 *[1,97]*		23 *[0,91]*	21,0 *[0,83]*		300 *[221,3]*	380 *[280,3]*
Screws	M10x1.25					**10.9**	73 *[53,8]*	
	M12x1.75					**10.9**	120 *[88,5]*	

Consult your Poclain Hydraulics sales engineer.

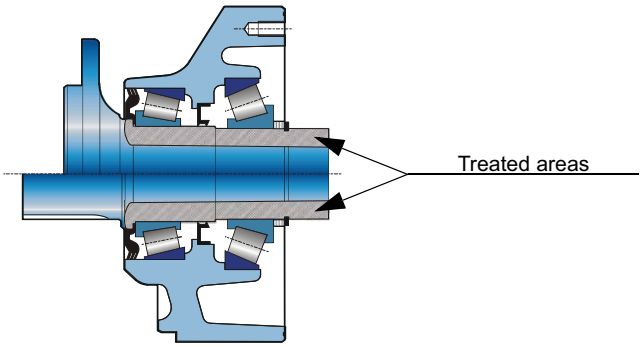
H High efficiency

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.



M High speed or reduced charge pressure

Option M leads to:

- In the case of MS02: Reduction in charge pressure.
- In the case of MSE02: An increase in speed and a reduction in charge pressure.

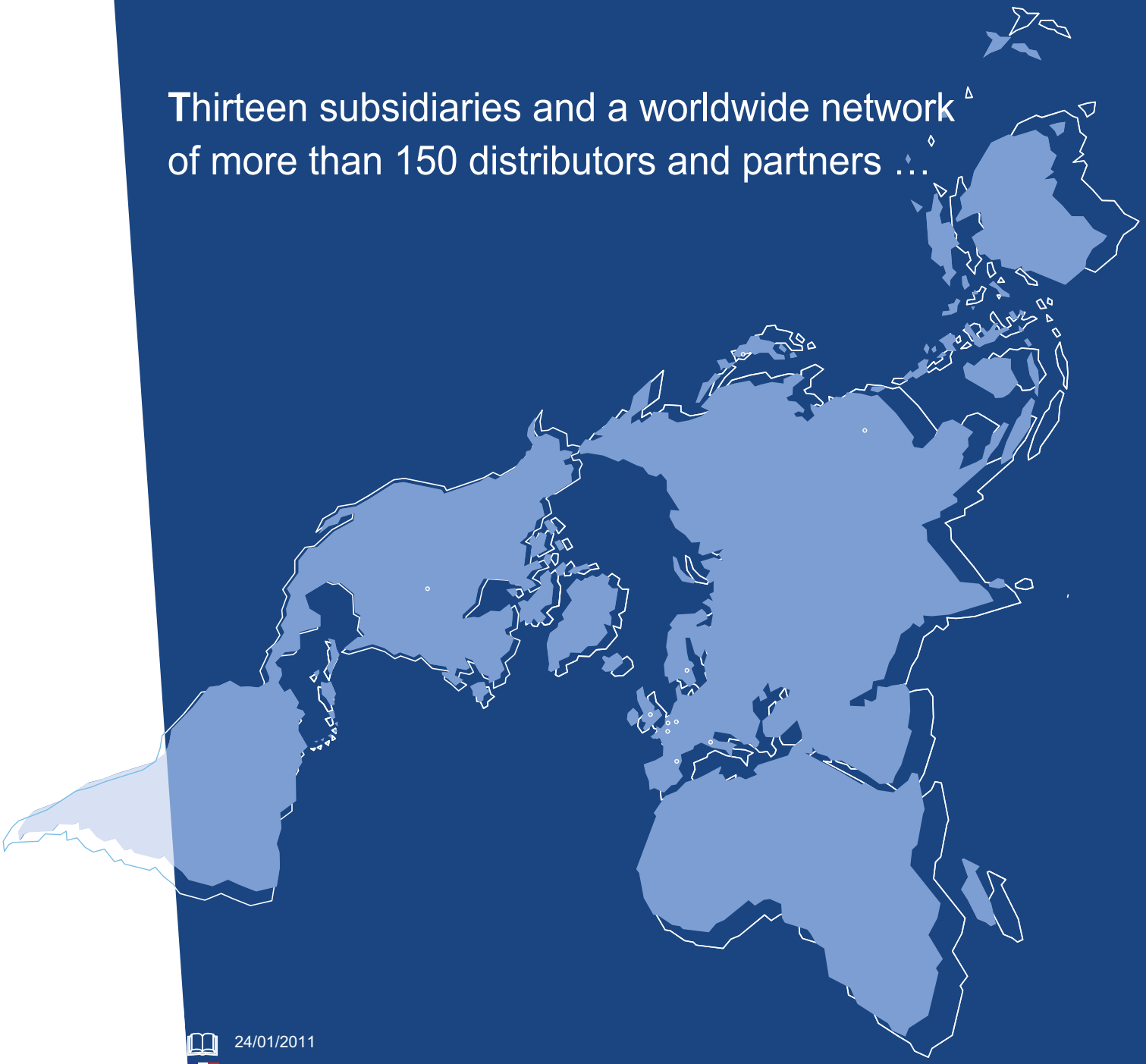
For a precise calculation, consult your Poclain Hydraulics application engineer.

P Customized identification plate

Your part number can be engraved on the plate.

Consult your Poclain Hydraulics application engineer for other possibilities.

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



24/01/2011

A36313V

A36314W

A36315X

A36316Z

A36317A

A36319C

Not available

A36318B

POCLAIN HYDRAULICS

More information on

www.poclain-hydraulics.com