MD11

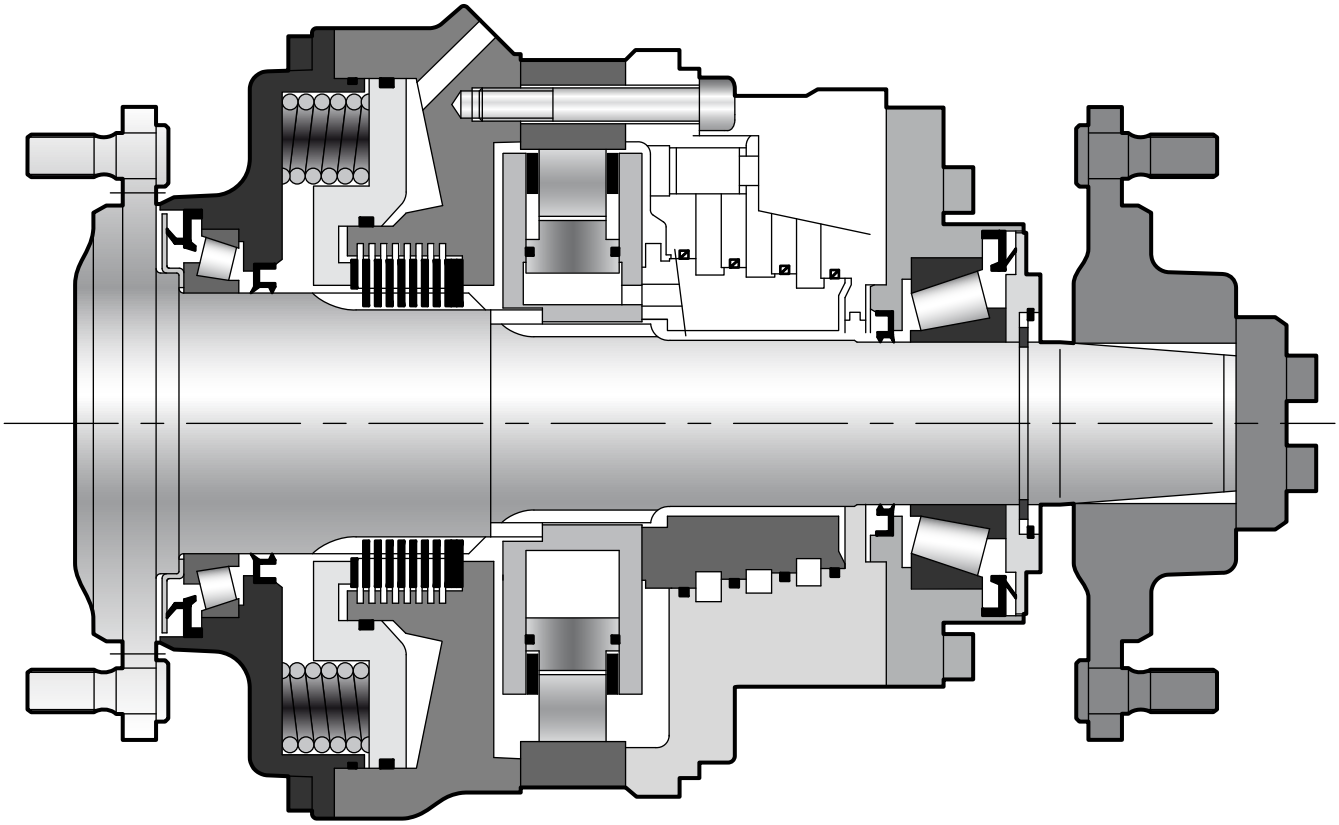
HYDRAULIC MOTORS

TECHNICAL CATALOG

POCLAIN HYDRAULICS

Poclain Driving Values for the Future

CHARACTERISTICS



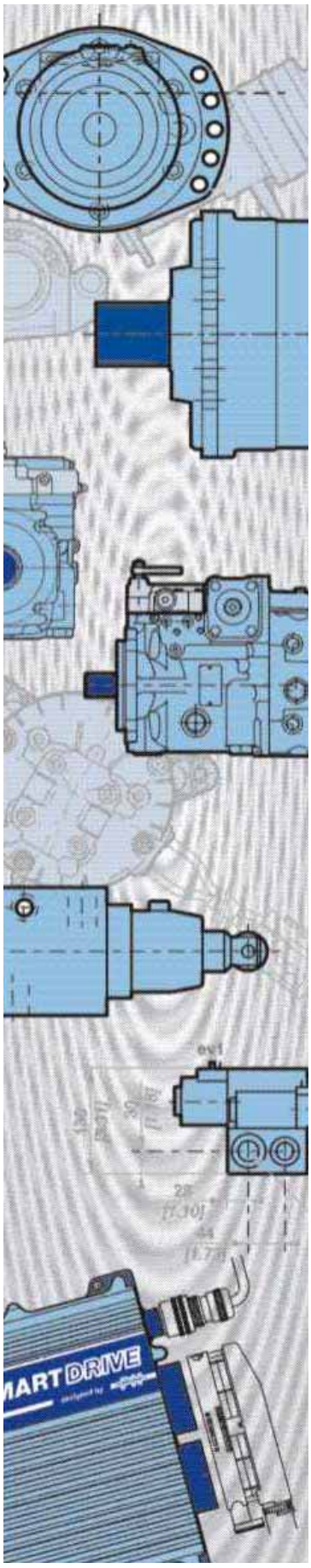
Motor inertia	**= 0.15 kg.m²**
Noise emissions	**= 60 dBA**

C	❶		❷		Theoretical torque ❶ at ΔP 100 bar	at ΔP 1000 PSI	Max.power ❶		❷ preferred		❷ non-preferred		Max.speed ❶	❷	Pression max.
	cm³/tr	*[cu.in/rev.]*	cm³/tr	*[cu.in/rev.]*	Nm	*[lb.ft]*	kW	*[HP]*	kW	*[HP]*	kW	*[HP]*	tr/min	*[RPM]*	bar *[PSI]*
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]*	50	*[67]*	33	*[44]*	25	*[34]*	185		450 *[6 527]*
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	

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

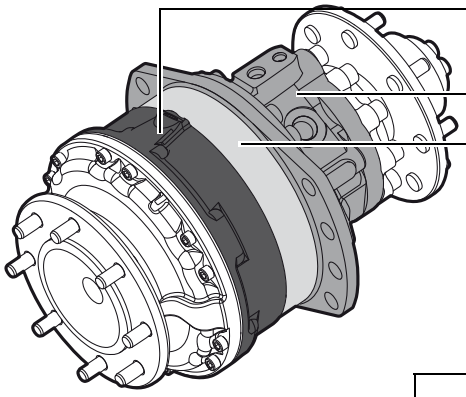
❶ **First displacement**

❷ **Second displacement**



CONTENT

MODEL



Brake

Valving System

Torque Module

				C		D			F		
				1		1	2	3	1	2	3
C	M	D	1	1							

C1

Cam ring type	
1 displacement cm³/rev *[cu.in/rev.]*	2 displacements cm³/rev *[cu.in/rev.]*
837 *[51.0]*	419 *[25.5]*	8
943 *[57.5]*	472 *[28.8]*	9
1048 *[63.9]*	524 *[32.0]*	0
1147 *[70.0]*	574 *[35.0]*	1
1259 *[76.8]*	630 *[38.4]*	2

D1

Valving type		
1-displacement valving		1
2-displacement valving (Clockwise)	Ratio 2	D
	Ratio <2	E
	Ratio >2	F
2-displacement valving (Counterclockwise)	Ratio 2	G
	Ratio <2	H
	Ratio >2	J

D2

Valving cover	
Without mounting	1
With mounting	2

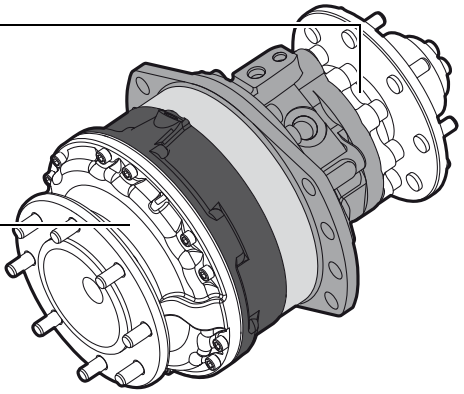
D3

Connection type		
No transmission cover		0
ISO 6162 Flanges	❶ DN 19 ❷ DN 13	1
ISO 9974-1 Connections (metric)		
ISO 1179-1 Connections (BSPP)		3
ISO 9974-1 Connections (metric)		4
ISO 6162 Flanges	❶ DN 19 ❷ DN 13	7
ISO 11926-1 Connections (SAE)		
ISO 11926-1 Connections (SAE)		A

F123

Brake			
Without brake	A	1	4
With brake	F	1	4

CODE



Bearing support

P				S					
1	2	3	4	1	2	3	4	5	6
	1								

P1

Bearing support unit	
0	Without chassis fixation
2	Chassis fixation on both bearing supports 12 x M12 on ∅ 276 *[dia. 10.87]*

P3

Flanges	
With male shaft	0
Without studs	1
With studs and nuts	2
With studs	3

S5-6

Options	
2	T4 speed sensor (without rotation direction)
5	Additional drain on valving systems (Steel plug)
7	Diamond™
8	Predisposition for speed sensor
D	Special paint or no paint
H	High efficiency
K	Heat treatment on external splines zone
P	Customized identification plate
Q	TD speed sensor (two phase shifted frequencies)
S	TR speed sensor (digital rotation direction)
M	High speed

P4

Shaft output	
0	With flange
1	Double splined male shaft NF E22141; 24 teeth; module 2,5

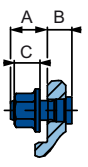
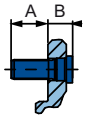
Methodology :
This document is intended for manufacturers of machines that incorporate Poclain Hydraulics products. It describes the technical characteristics of Poclain Hydraulics products and specifies installation conditions that will ensure optimum operation.
This document includes important comments 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) 

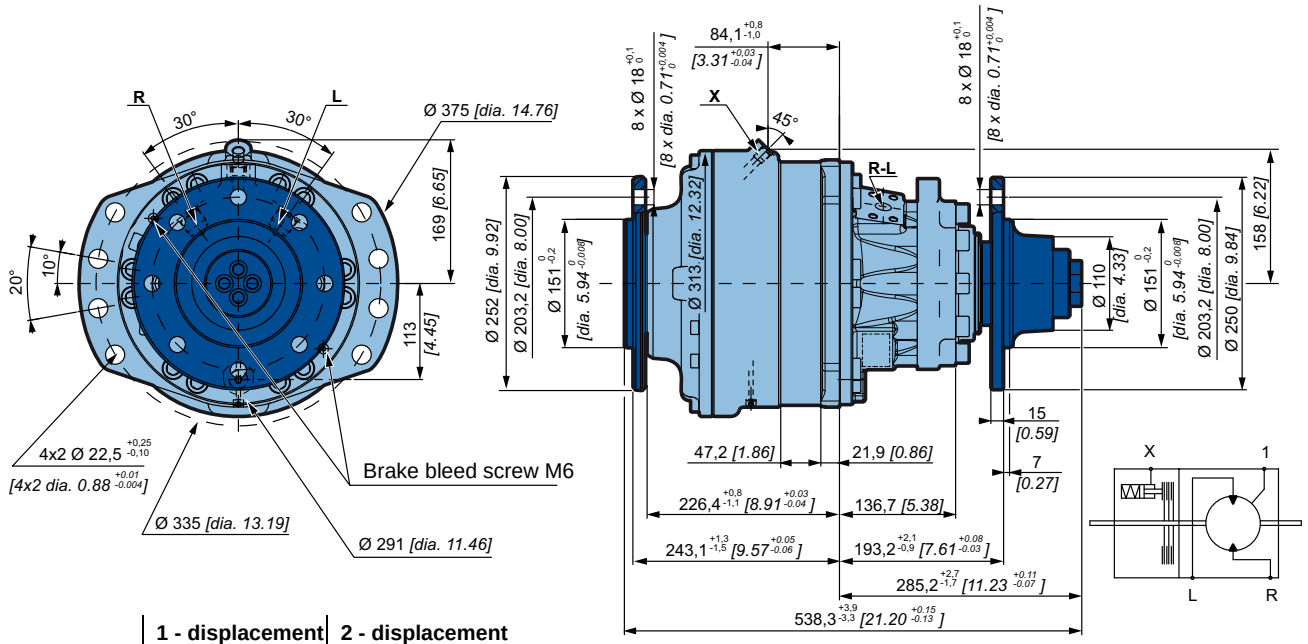
		A mm *[in]*	B mm *[in]*	C mm *[in]*
P 1 2 3 4 0 1 2 0		30 *[1.18]*	20 *[0.79]*	21 *[0.83]*
P 1 2 3 4 0 1 3 0		30 *[1.18]*	20 *[0.79]*	—

CHARACTERISTICS

Wheel motor

1 - displacement motor

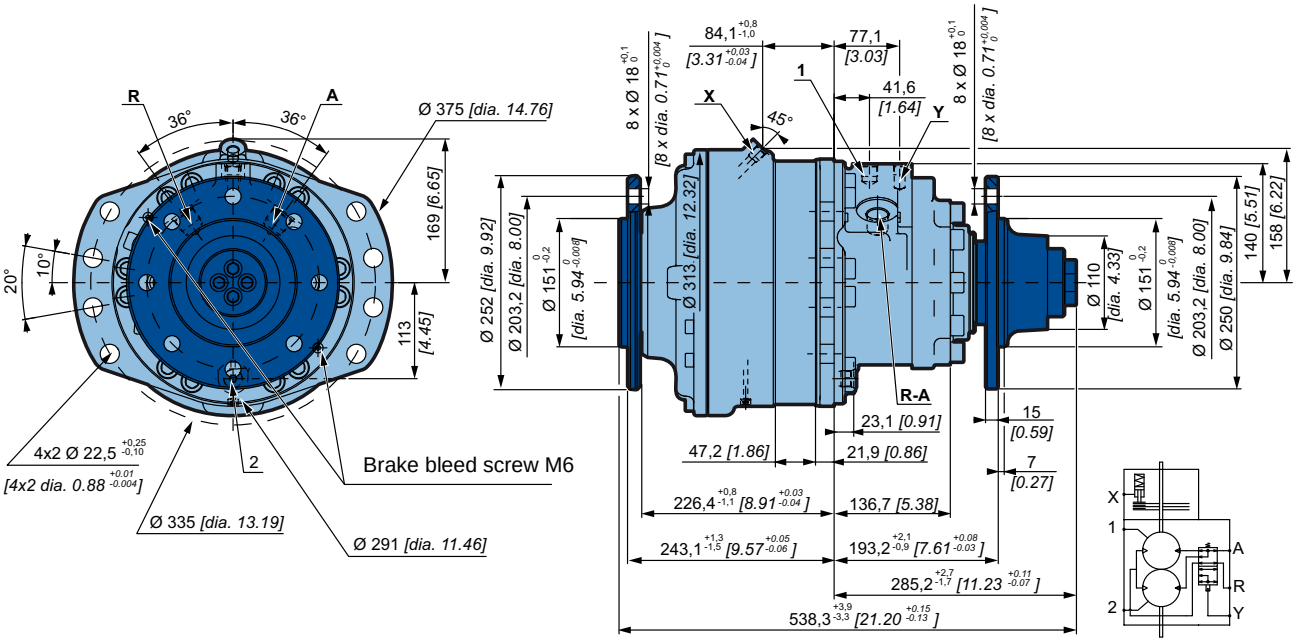
C	D		F			P				S					
1	1	2	3	1	2	3	1	2	3	4	1	2	3	4	5	6
M	D	1	1		1	2		0	1		0					



	1 - displacement	2 - displacement
kg [lb]	129 [284.4]	133 [293.2]
l [cu.in]	2,00 [122]	

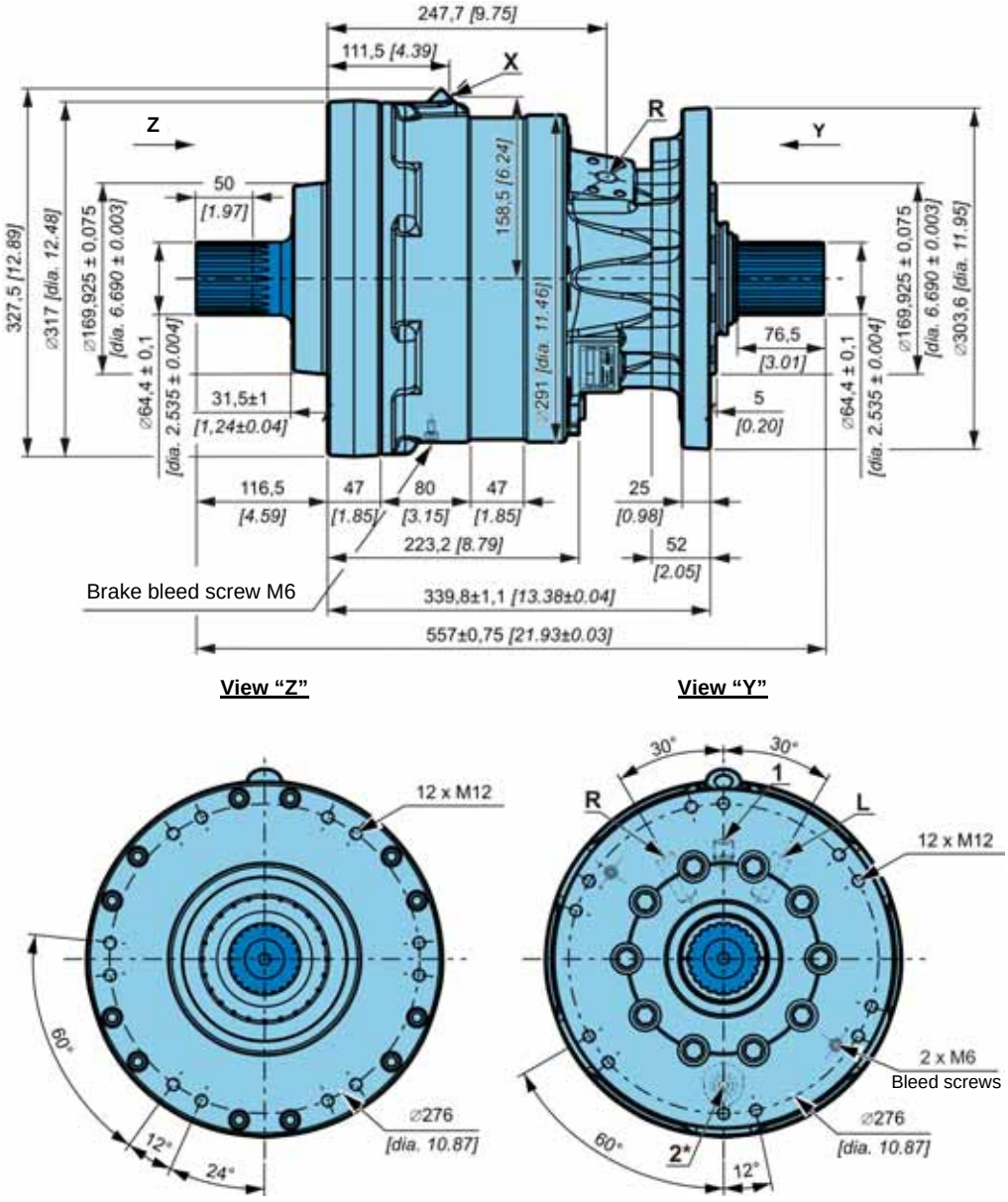
2 - displacement motor

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



Shaft motor

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



* Port 2 - option 5

kg *[lb]*	81 *[178.6]*
l *[cu.in]*	2,00 *[122]*

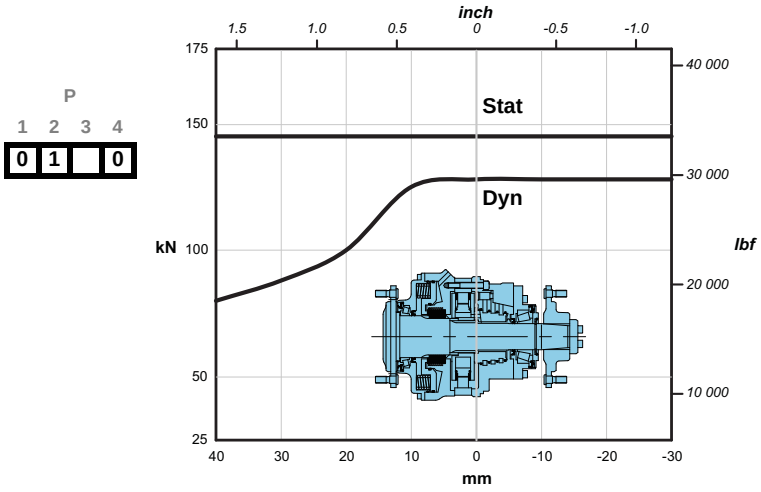
Radial load curves

Permissible radial loads

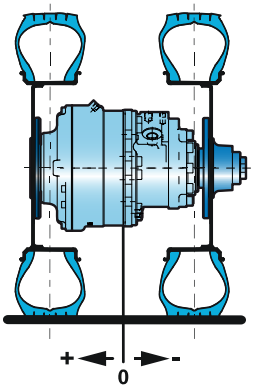
Test conditions:

Static: 0 rev/min *[0 RPM]* 0 bar *[0 PSI]*

Dynamic: 0 rev/min *[0 RPM]*, code 0 displacement, without axial load at max. torque.



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.

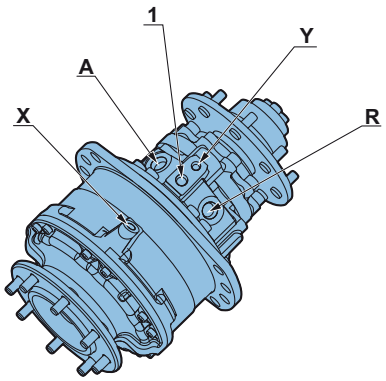


VALVING SYSTEM

Hydraulic connections

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

	Oldstandards	Standards	Power supply		Case drain	2nd displacement control	Control of parking brake
			R - L		1, 2		X
1	ISO 6 162 DIN 3 852	**ISO 6 162-2** **ISO 9 974-1**	PN400 DN13-NF		M 18x1,5		M 16x1,5
			R - A		1, 2	Y	X
A	SAE J514	**ISO 11926-1**	1" 1/16-12 UNF		3/4"-16 UNF	9/16"-18 UNF	9/16"-18 UNF
1	ISO 6 162 DIN 3 852	**ISO 6 162-2** **ISO 9 974-1**	PN400 DN13-NF		M 18x1,5	M 16x1,5	Ø17 *[3/8" dia.]*
3	BSPP	**ISO 1179-1**	Ø27 *[3/4" dia.]*		Ø21 *[1/2" dia.]*	Ø17 *[3/8" dia.]*	Ø17 *[3/8" dia.]*
4	NF E48 050	**ISO 9 974-1**	M 27x2		M 18x1,5	M 16x1,5	Ø17 *[3/8" dia.]*
7	ISO 6 162 DIN 3 852	**ISO 6 162-2** **ISO 9 974-1**	PN400 DN13-NF		3/4"-16 UNF	9/16"-18 UNF	9/16"-18 UNF
Max. pressures		bar *[PSI]*			15 *[218]*		
Instantaneous pressure peaks resistance		bar *[PSI]*	350 *[5076]*		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.

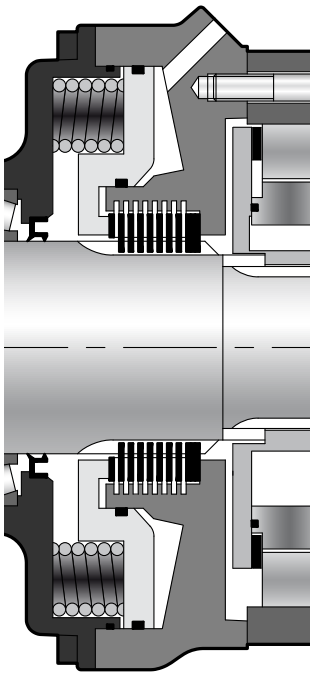
Do not put either a check valve or a poppet valve on the pilot lines (parking brake and displacement change) between the charge pump and the pilot valve. Do not use a piloting valve with integrated check valve.

BRAKES

	C	D	F	P	S
	1	1 2 3	1 2 3	1 2 3 4	1 2 3 4 5 6
C		2	F 1 4	1	

M D 1 1

Front brake



C	F 1 4
Parking brake torque at 0 bars on housing (new brake)	8 000 Nm *[5 900 lb.ft]*
Dynamic emergency braking torque at 0 bars on housing (max. 10 uses of emergency brakes)	5 200 Nm *[3 840 lb.ft]*
Residual parking braking at 0 bars on housing *	6 000 Nm *[4 430 lb.ft]*
Min. brake release pressure	10 bar *[145 PSI]*
Max. brake release pressure	30 bar *[435 PSI]*
Max. energy dissipation	90 500 J

* After emergency brake has been used

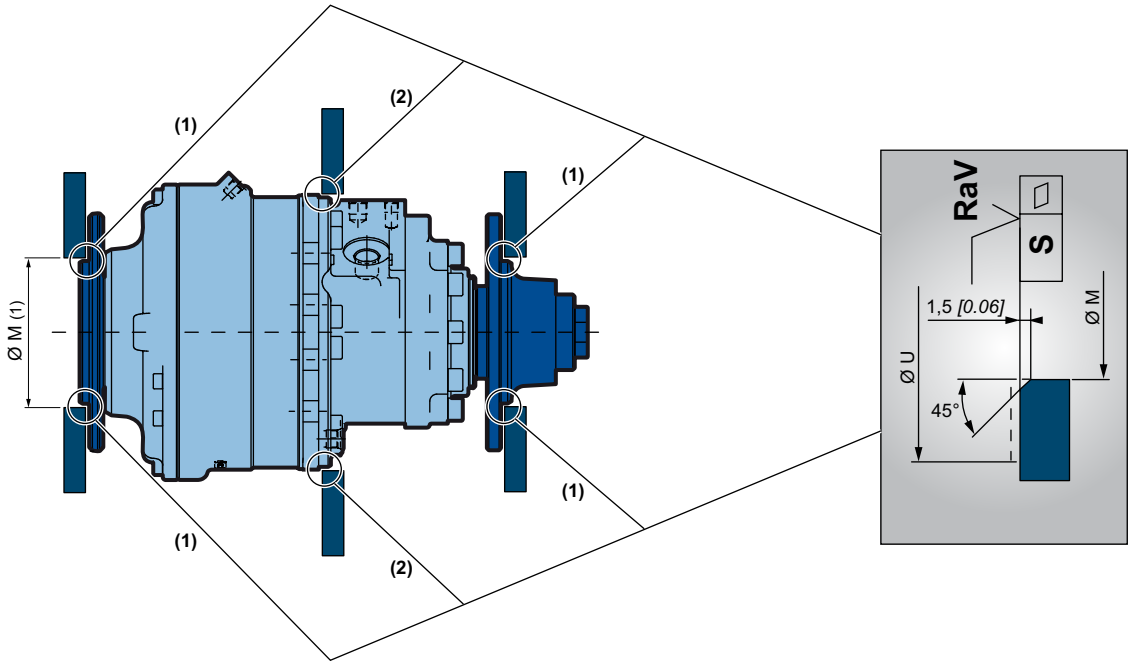
Do not run-in the multidisc brakes.

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.

INSTALLATION

Customer's chassis and wheel rim mountings

	C	D		F			P				S					
	1	1	2	3	1	2	3	1	2	3	4	1	2	3	4	5	6
MD11								0	1		0						



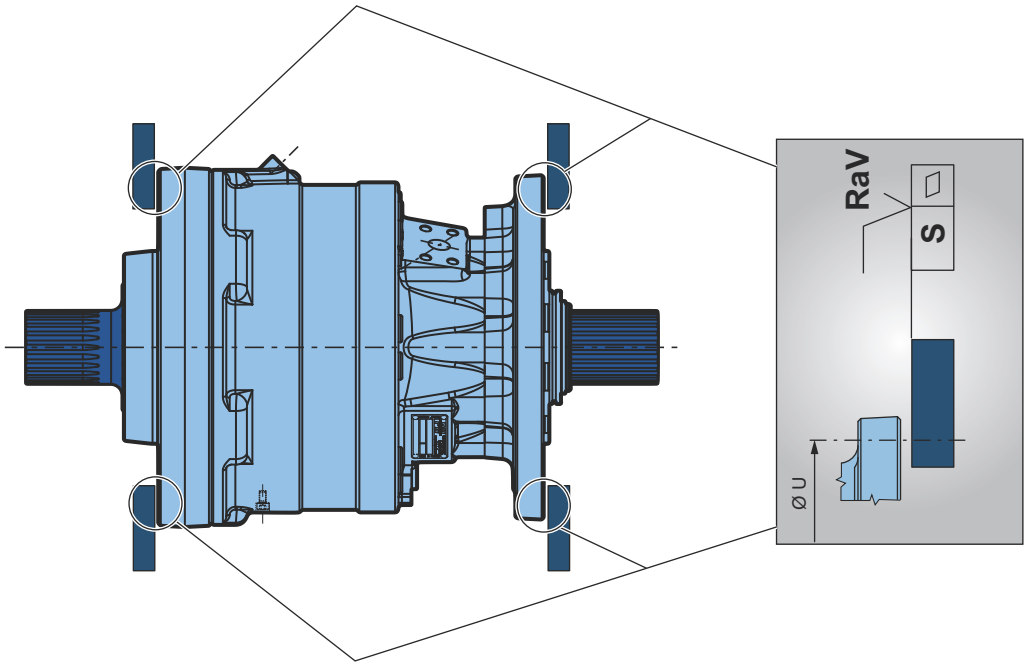
	ØU mm [in]	ØM (*) mm [in]	S	V µm [µinch]		Class		**
(1)	203,20 [8,00]	151,00 [5,94]	0.2 [0.008]	12,5 [492]	2 x 8 M16	8.8		210 N.m [155 lb.ft]
(2)	335,00 [13,19]	285,00 [11.22]			8 x M 20			410 N.m [302 lb.ft]

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

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

Customer's chassis mountings

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



	ØU mm *[in]*	S	V µm *[µinch]*		Class	**
	203,20 *[8,00]*	0.2 *[0.008]*	12,5 *[492]*	2 x 12 M12	**8.8**	86 N.m *[63 lb.ft]*

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

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

Take care over the immediate environment of the connections.

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.

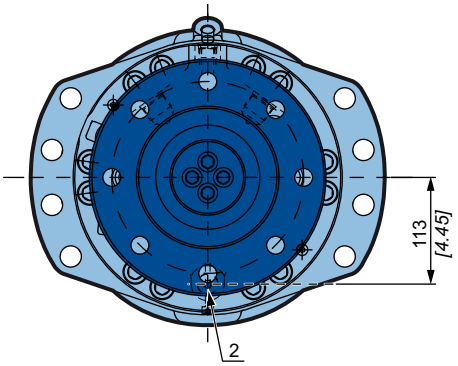
To find the connections' tightening torques, see the brochure "Installation guide" N° 801478197L.

OPTIONS

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

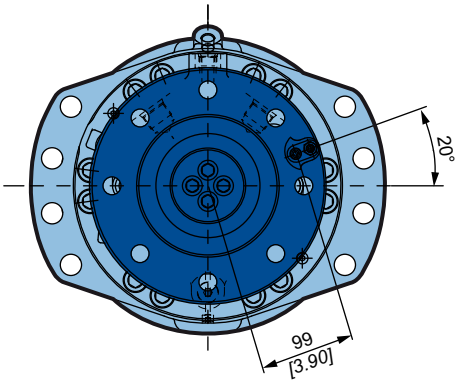
You can accumulate more than one optional part. Consult your Poclain Hydraulics sales engineer.

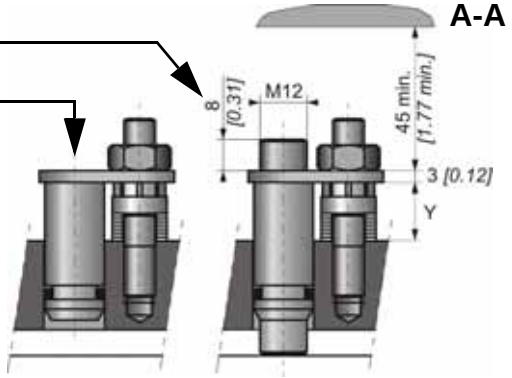
5 Drain on the valving system



2 S 8 Q 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



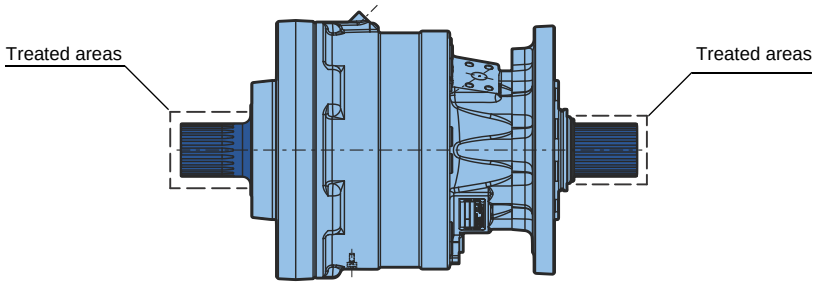


Max. length Y= 18,65 *[0.73]*

Standard number of pulses per revolution= 60

K Treated external splines zone

Heat treatment on the external splines zones.



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.

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.

H High efficiency

Reinforced piston sealing to improve volumetric efficiency.

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.

M High speed

Under certain conditions, an increase in the maximum speed of 30% above the values indicated in the table on page 2 is possible.

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

POCLAIN HYDRAULICS

Poclain Driving Values for the Future

28/06/2013
B01192U
B01191T

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