

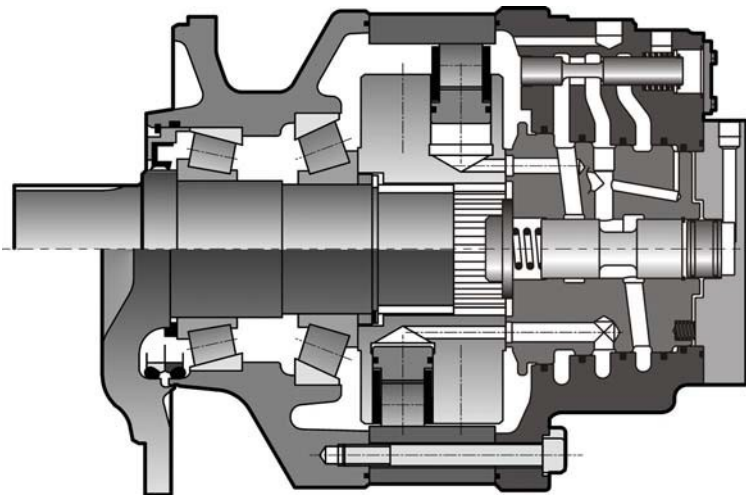


MW MOTORS

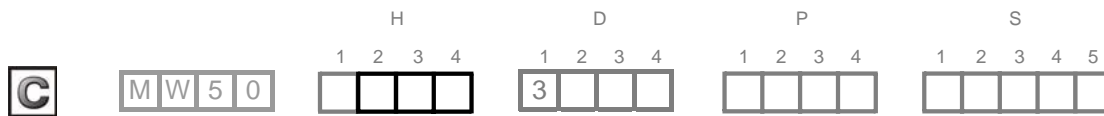


MW/MW50. HYDRAULIC MOTOR.

CHARACTERISTICS



Motor inertia 1 kg.m²



cm ³ /tr [cu.in./rev.]				Theoretical torque		Max.power				Max. speed			Max. pressure		
H2	H3	H4	①	②	③	at 100 bar at 1000 PSI	kW [HP]				tr/minRPM			bar [PSI]	
						Nm [lb.ft]	①	② preferred	② non-preferred	③ preferred	③ non-preferred	①	②	③	
9	8	9	4 333 [264,3]	2 833 [172,8]	1 500 [91,5]	6 889 [3 504]						70	120	160	
9	9	8	4 333 [264,3]	3000 [183,0]	1 333 [81,3]	6 889 [3 504]						70	115	155	
2	0	8	5 000 [305,0]	3 667 [223,7]	1 333 [81,3]	7 950 [4 043]						60	90	125	
8	2	0	5 000 [305,0]	3 333 [203,3]	1 667 [101,7]	7 950 [4 043]	140 [188]	109 [146]	70 [94]	77 [103]	56 [75]	60	100	135	450 [6 530]
0	8	2	5 000 [305,0]	3 000 [183,0]	2 000 [122,0]	7 950 [4 043]						60	110	150	
0	1	0	5 167 [315,1]	3 500 [213,5]	1 667 [101,7]	8 216 [4 178]						55	100	130	
0	0	1	5 167 [315,1]	3 333 [203,3]	1 834 [111,9]	8 216 [4 178]						55	105	135	
2	2	2	6 000 [365,9]	4 000 [244,0]	2 000 [122,0]	9 540 6 360									

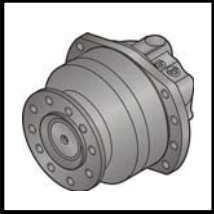
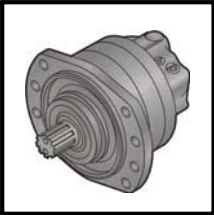
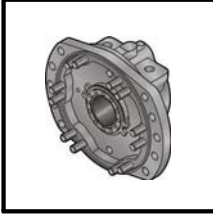
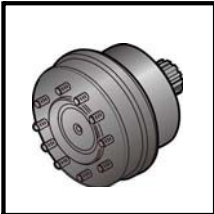
- ① First displacement
- ② Second displacement
- ③ Third displacement



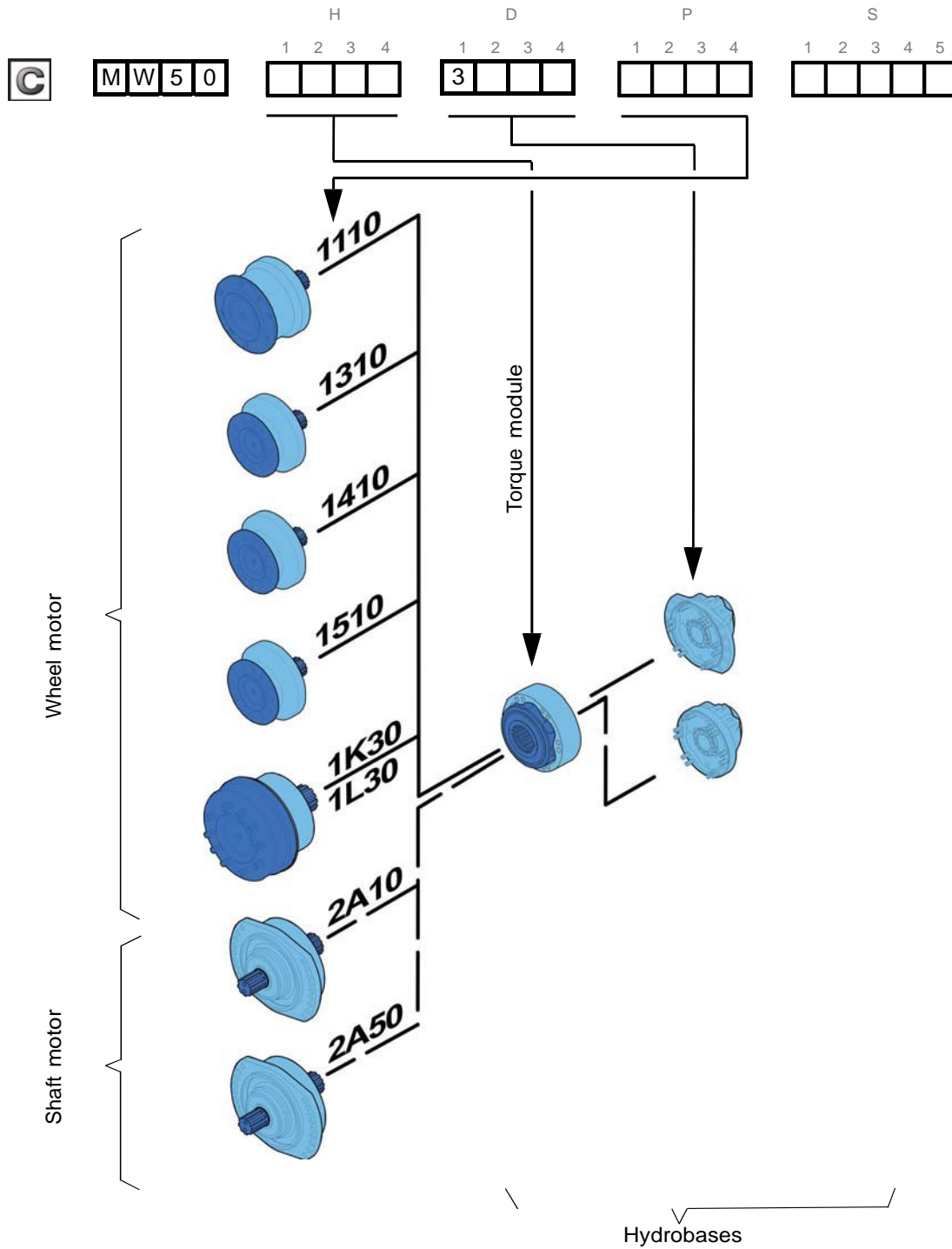
For other cams, consult your Poclain Hydraulics application engineer.



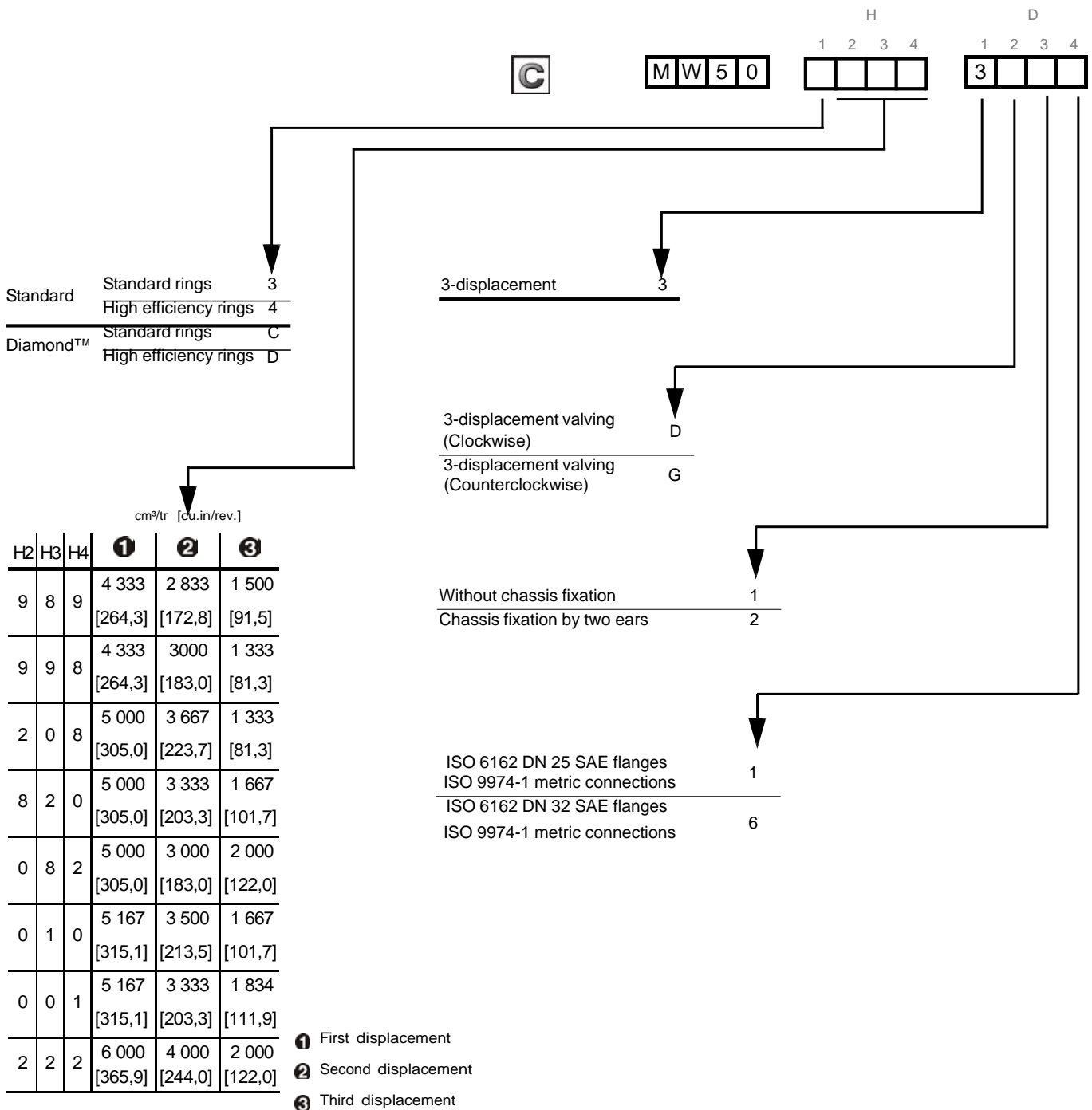
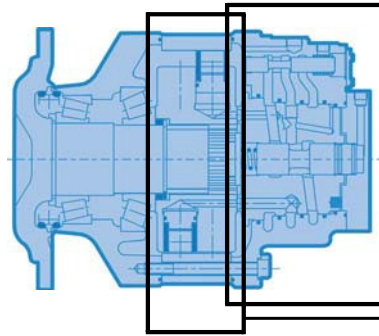
CONTENT

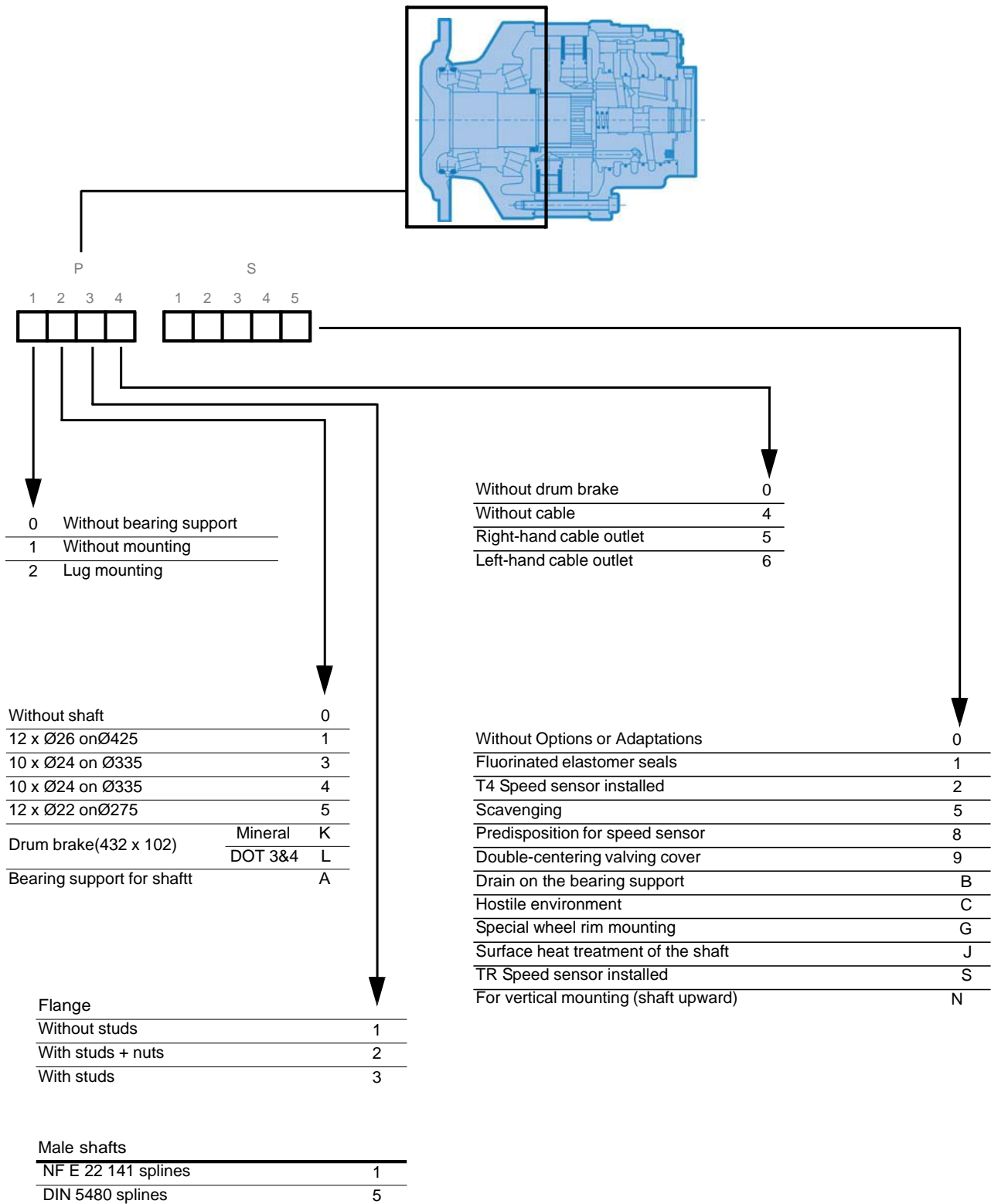
	MODULARITY	5	Modularity and Model code
	MODEL CODE	6	
	WHEEL MOTOR	8	Wheel motor
	Dimensions for standard (1110) 3-displacement motor	8	
	Support types	9	
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	SHAFT MOTOR	11	Shaft motor
	Dimensions for standard (2A50) 3-displacement motor	11	
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	VALVING SYSTEMS AND HYDROBASES	14	Valving systems and hydrobases
	Dimensions for 3-displacement valving	14	
	Cylinder block splines	14	
	Chassis mountings	15	
	Hydraulic connections	16	
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MODULARITY



MODEL CODE





Methodology :

This document is intended for manufacturers of machines that incorporate Poclairn Hydraulics products. It describes the technical characteristics of Poclairn 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 Poclairn-Hydraulics personnel.

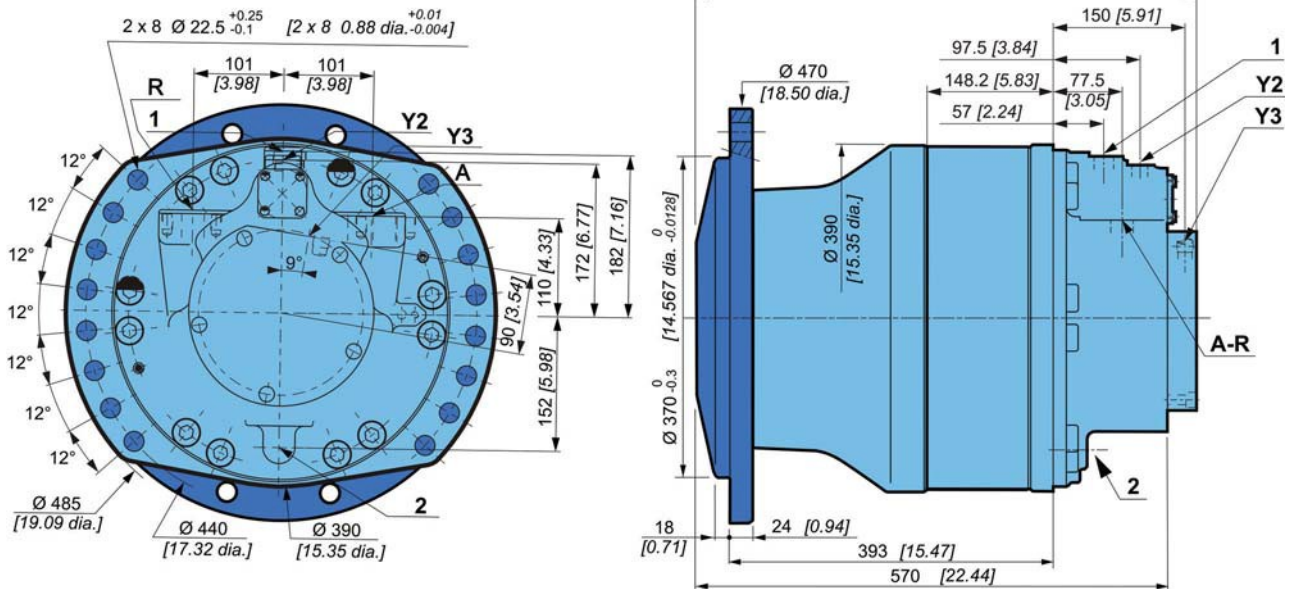
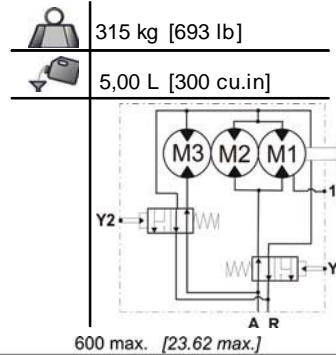
The views in this document are created using metric standards.

The dimensional data is given in mm and in inches (inches are between brackets and italic)



WHEEL MOTOR

Dimensions for standard (1110) 3-displacement motor



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

Support types

C	H				D				P				S								
	M	W	5	0	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	5
A	B	C	D	E	N	Wheel rim mountings	L														
mm [in]	mm [in]	mm [in]	mm [in]	mm [in]	mm [in]		mm [in]														
1 1 1 0 P	Ø 370 [14,57 dia.]	Ø 425 [16,73 dia.]	Ø 472 [18,58 dia.]	393 [15,47]	Ø 390 [15,35 dia.]	Ø 26 [1,02 dia.]	12 x M 24x2	24 [0,94]													
1 3 1 0 P	Ø 280,7 [11,05 dia.]	Ø 335 [13,19 dia.]	Ø 379 [14,92 dia.]	335 [13,19]	Ø 390 [15,35 dia.]	Ø 24 [0,94 dia.]	10 x M 22x1.5	17 [0,67]													
1 4 1 0 P	Ø 280,7 [11,05 dia.]	Ø 335 [13,19 dia.]	Ø 379 [14,92 dia.]	296 [11,65]	Ø 390 [15,35 dia.]	10 x Ø 24 [10 x 0,94 dia.]	-	17 [0,67]													
1 5 1 0 P	Ø 220,7 [8,69 dia.]	Ø 275 [10,83 dia.]	Ø 314,5 [12,38 dia.]	348 [13,70]	Ø 390 [15,35 dia.]	(8+4) x Ø 22 [0,87 dia.]	-	18 [0,71]													
1 K 2 0 1 L 2 0 P	Ø 280,7 [11,05 dia.]	Ø 335 [13,19 dia.]	Ø 482 [18,98 dia.]	396 [15,59]			10 x M 22x1.5	45 [1,77]													
										Also see 'Brakes' section (thumbnail opposite).											

Studs

		P	C min.	C max.	D	Class			
		mm [in]	mm [in]	mm [in]	mm [in]		(1) * N.m [lb.ft]	(2) * N.m [lb.ft]	
Various studs	M22 x 1.5	80 [3,15]	5 [0,20]	36 [1,42]	26 [1,02]	12,9		695 [512,6]	1 050 [774,4]
	M24 x 2	95 [3,74]		38 [1,50]	30 [1,18]			910 [671,2]	1 150 [848,2]
Screws	M20	-	-			12,9	600 [442,5]	770 [567,9]	

(*) 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.

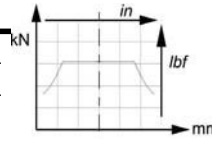
Load curves

Permissible radial loads

Test conditions :

Static : 0 tr/min [0 RPM] 0 bar [0 PSI]

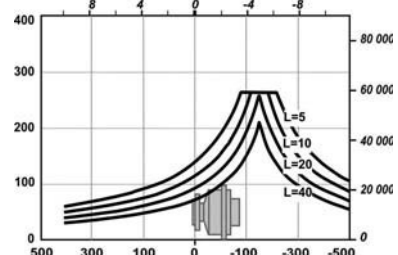
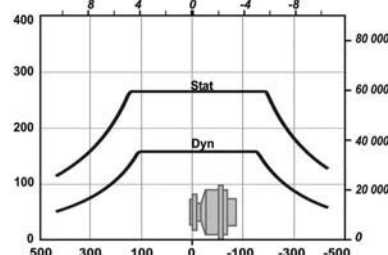
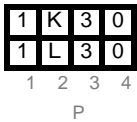
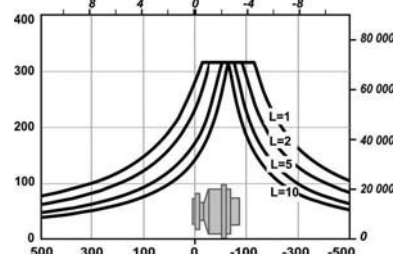
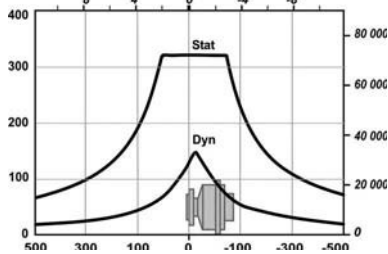
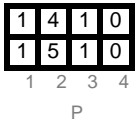
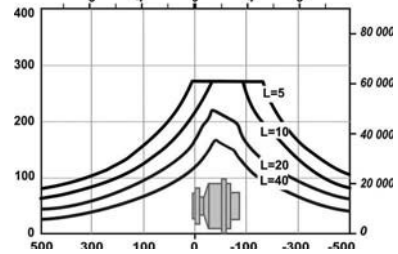
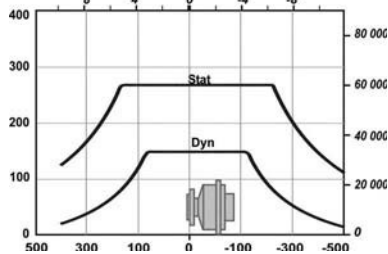
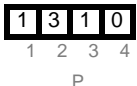
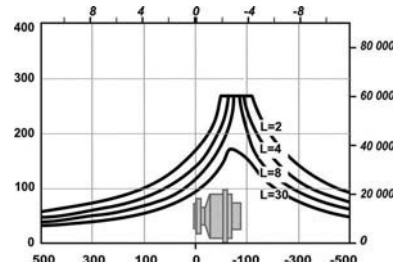
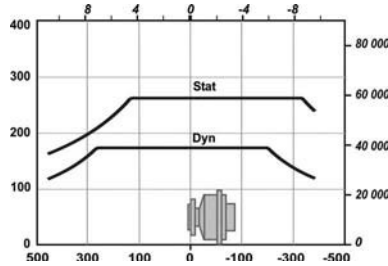
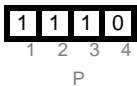
Dynamic : 0 tr/min [0 RPM], code 0 displacement, without axial load at max. torque



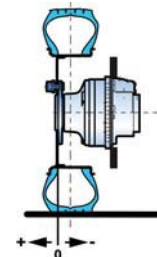
Service life of bearings

Test conditions :

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

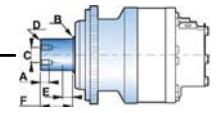


The service life of the components is influenced by the pressure. You must check that the combination of forces applied (Axial load / Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications.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



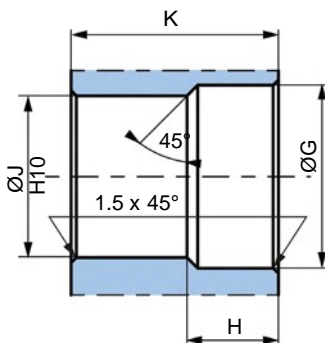
Support types

M W 5 0				H				D				P				S				
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	5
[2 A 5 0]				[3]				[]				[]								
DIN 5480 splines				A				B				C				D				
Nominal Ø				40				R 4				60				32				
Module				[1,57]				[R 0,16]				[2,36]				[1,26]				
Z				24				2 x M16				136								
NF E22-141 splines				A				B				C				D				
Nominal Ø				40				R 4				60				32				
Module				[1,57]				[R 0,16]				[2,36]				[1,26]				
Z				33				2 x M16				136								



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

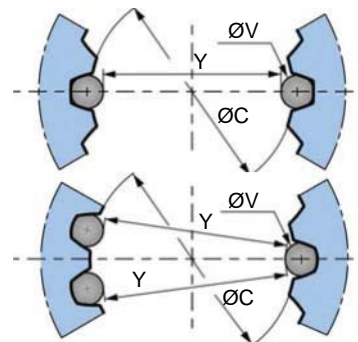
Splined coupling



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).



[2 A 5 0]				[2 A 1 0]							
1	2	3	4	1	2	3	4				
Ø G	H	Ø J	K	N	Mo	Z	Offset	Ø C (H10)	Ø V	Y	Tolerance
mm [in]	mm [in]	mm [in]	mm [in]	mm [in]			mm [in]	mm [in]	mm [in]	mm [in]	µm [µin]
132 [5,20]	33 [1,30]	120 [4,72]	135 [5,31]	130 [5,12]	5	24	2,25 [0,09]	120 [4,72]	9 [0,35]	111,104 [4,37]	+ 87 / 0 [+3.425 / 0]
131 [5,16]	33 [1,30]	122,5 [4,82]	135 [5,31]	130 [5,12]	3,75	33	2,373 [0,0934]	122,5 [4,82]	7,5 [0,30]	115,081 [4,53]	+ 113 / 0 [+4.448 / 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].

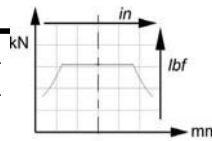
Load curves

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



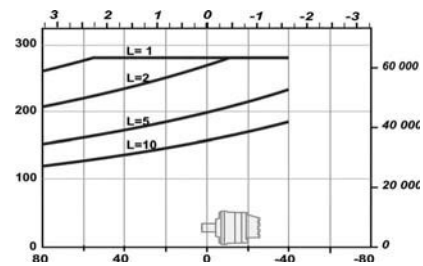
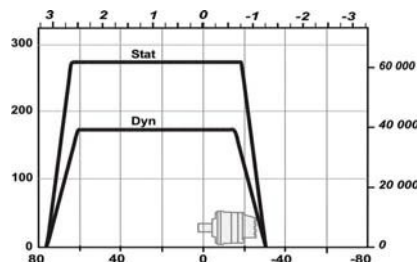
Service life of bearings

Test conditions :

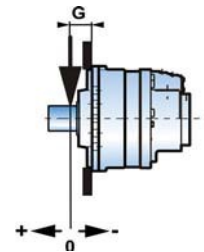
L : Millions B10 revolutions at 150 bars (average pressure), with 25 cSt fluid, code 0 displacement, without axial load.

2	A	5	0
1	2	3	4

P

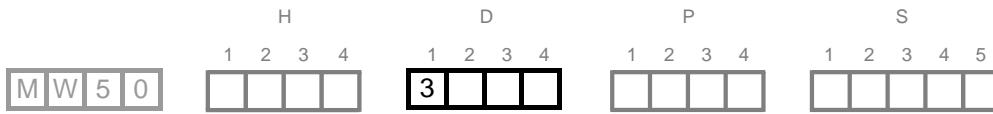


The service life of the components is influenced by the pressure. You must check that the combination of forces applied (Axial load / Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications.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



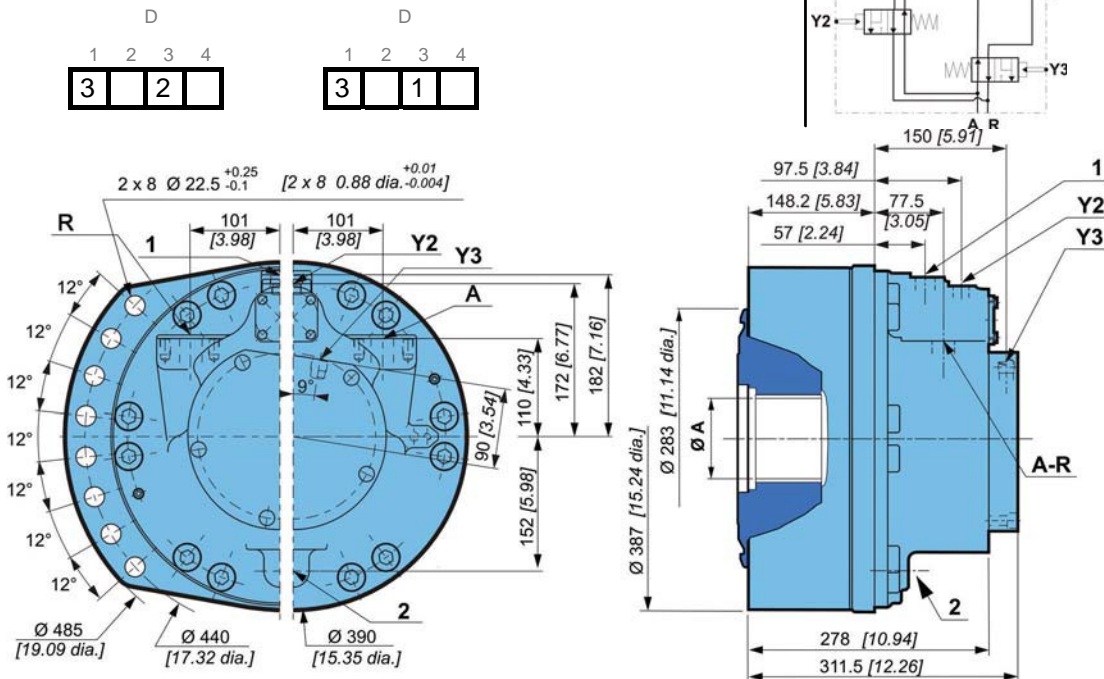
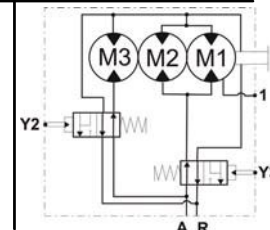
	G
	mm [in]
2 A 1 0	144 [5,67]
2 A 5 0	144 [5,67]

VALVING SYSTEMS AND HYDROBASES



Dimensions for 3-displacement valving

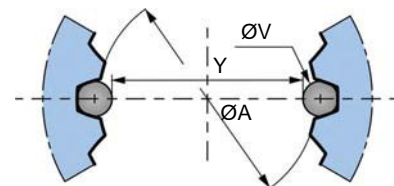
	160 kg [352 lb]
	2,00 L [120 cu.in]



Cylinder block splines

(as per standard NF E22-141)

ØA	Module	Z	Dimension on 2 pins	
			Y	ØV
100 [3,937]	2,5	38	90,169 [3,550]	5 [0,197]

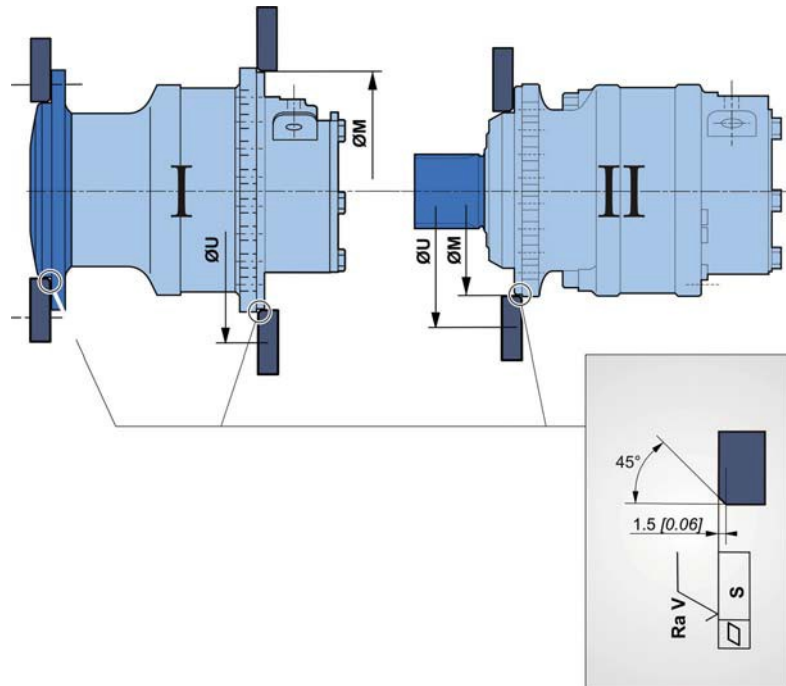


You are advised to have the installation validated by your Poclain Hydraulics application engineer before using the hydraulic unit in an application.





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

Chassis mountings



Take care over the immediate environment of the connections.

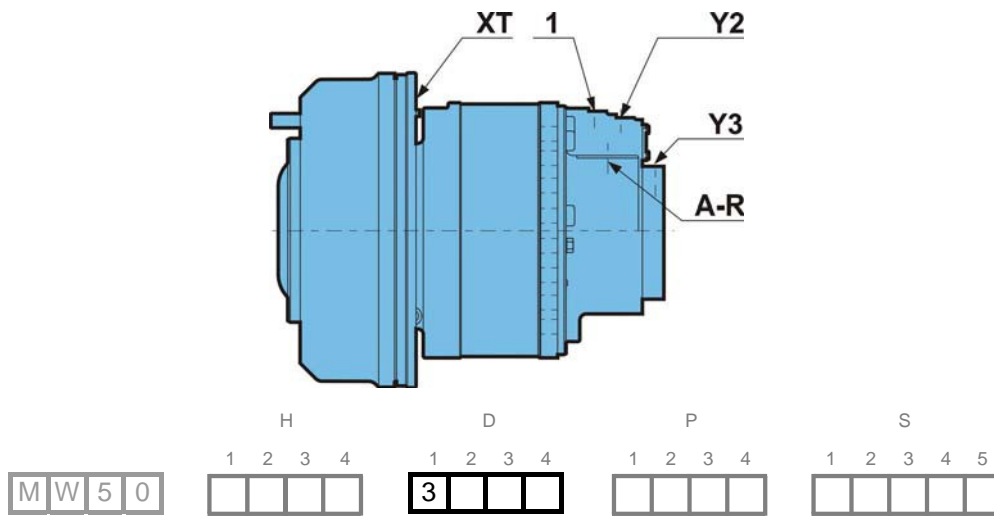
	$\varnothing M$ ⁽¹⁾ mm [in]	$\varnothing U$ mm [in]	$\varnothing T$ mm [in]	L mm [in]	S mm [in]	Ra V μm [μin]		Class	 * N.m [lb.ft]
I	380 [14,96]	440 [17,32]	-	-	-	-	2 x 8 M20 x 2	8,8	410 [302,4]
II		485 [19,09]	-	-	0,2 [0,008]	12,5 [0,49]			

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

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

Hydraulic connections

connections



	Old standards	Standards	Power supply	2 nd displacement control	Case drain	Control of drum break
			A-R	Y2, Y3	1, 2	XT
1	ISO 6 162 DIN 3852	ISO 6 162 ISO 9 974-1	DN25 PN400	M18 x 1.5	M22 x 1.5	
6	ISO 6 162 DIN 3852	ISO 6 162 ISO 9 974-1	DN32 PN400	M18 x 1.5	M22 x 1.5	
		ISO 9 974-1				M14 x 1.5
Max. pressures		bar [PSI]	450 [6 530]	30 [440]	1 [10]	120 [1 740]

- 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.

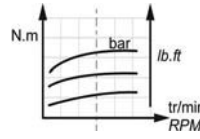
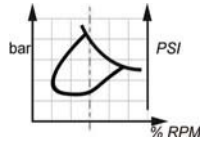
Pilotage des cylindrées

	Y2	Y3
① First displacement	0	0
② Second displacement	1	0
③ Third displacement	0	1

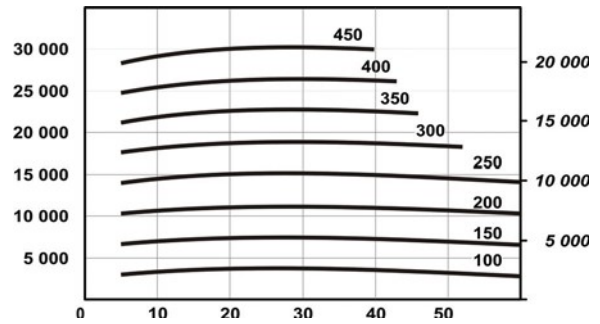
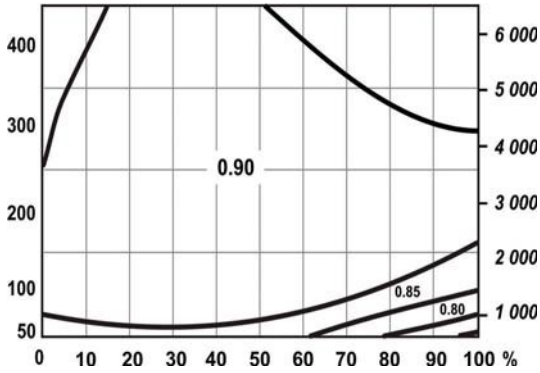
Efficiency

Overall efficiency

Average values given for guidance for code 208 displacement after 100 hours of operation with HV46 hydraulic fluid at 50°C [122°F].



Actual output torque

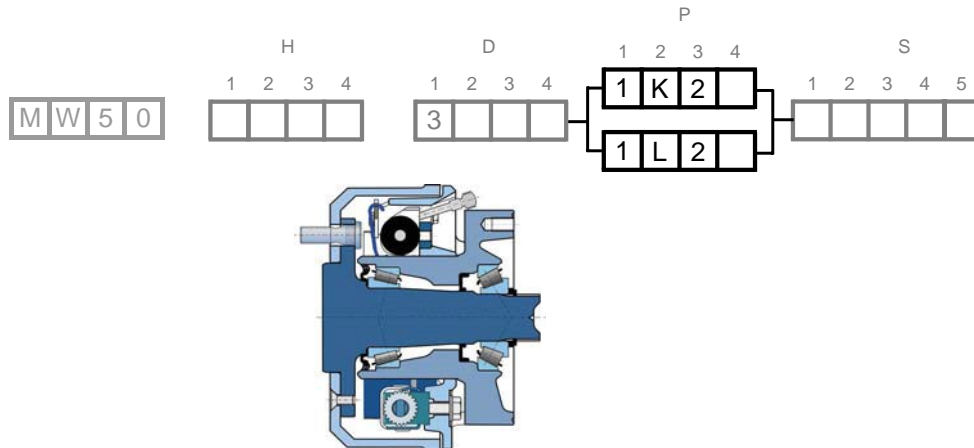


The starting torque is taken to be approximately 85% of the first value for available pressure. For a precise calculation, consult your Poclairn Hydraulics application engineer.

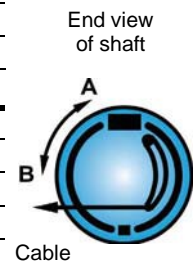
BRAKES

Drum brake (432 x 102)

Diameter of brake pads : Ø 432 [17 dia.]
Width of friction surface : 102 [4,01]



Brake pads		C
Asbestos free material	BERAL 1109	
Compensation for wear	Automatic	
Hydraulically controlled dynamic braking		
Max. permissible continuous brake torque	16 200 N.m [11 948 lb.ft]	
Pressure to obtain max. permissible continuous brake torque	71 bar [1 028 PSI]	
Max. permissible brake torque	27 000 N.m [19 914 lb.ft]	
Pressure to obtain max. permissible brake torque	120 bar [1 740 PSI]	
Fluid		
Mineral	Yes	K
DOT 3 / DOT 4 / SAE J1703	Yes	L
Max. volume required to bring pads into contact	10.15 cm ³ [0.62 cu.in]	
Mechanically controlled parking brake		
Max. braking torque	16 200 N.m [11 948 lb.ft]	
Max permissible force on the cable	3 000 N [674 lbf]	
Force required to bring pads into contact	37.2 N [8 lbf]	
Stroke required to bring pads into contact (new brake)	A	19 mm [0.73 "]
	B	16 mm [0.63 "]



The max. braking torque can only be obtained when the brake has been run in. Consult your Poclairn 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.



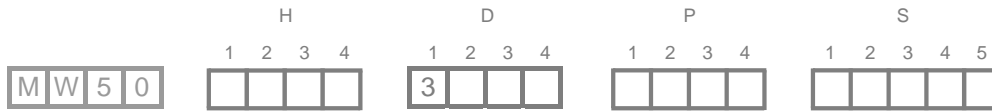
See also 'Wheel motor' section (thumbnail opposite)



When making an encoding request, you must indicate the following information:

- The material of the brake linings,
- The type of connection at the end of the parking brake control cable,
- Fill out the technical questionnaire for validation of the brake.

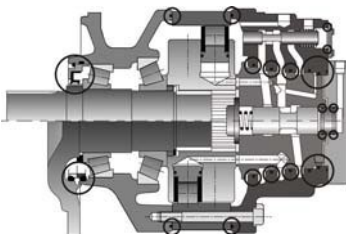
OPTIONS



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

1 - Fluorinated elastomer seals

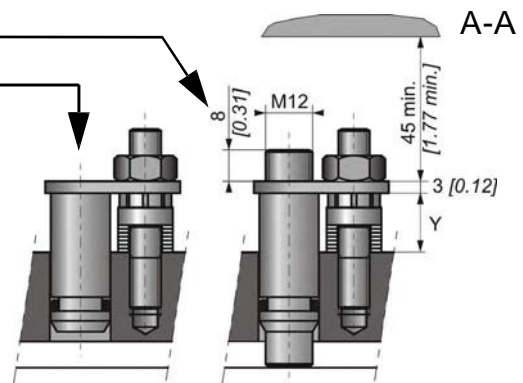
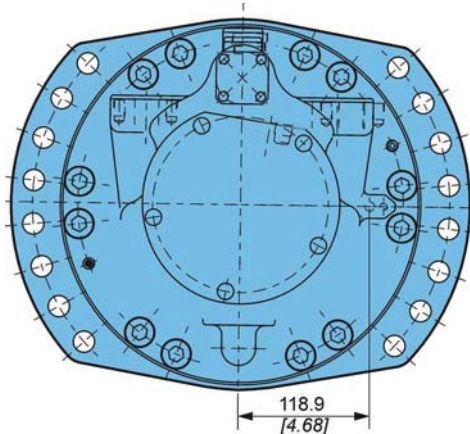
Nitrile seals marked in the figure below replaced by fluorinated elastomer seals.



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= 15.1
Standard number of pulses per revolution= 56

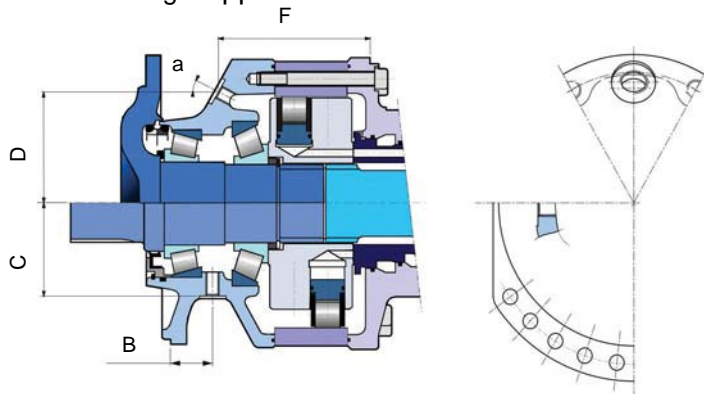


Look at the "Mobile Electronic" N° A01889D technical catalogue for the sensor specifications and its connection.



To install the sensor, see the "Installation guide" brochure No. 801478197L.

B - Drain on the bearing support



		B	C	D	F	a
		mm [in]	mm [in]	mm [in]	mm [in]	
Shaft motor	M22 x 1.5	56 [2,20]	133 [5,24]			
Wheel motor				159 [6,26]	221 [8,70]	45°

G - Special wheel rim mounting

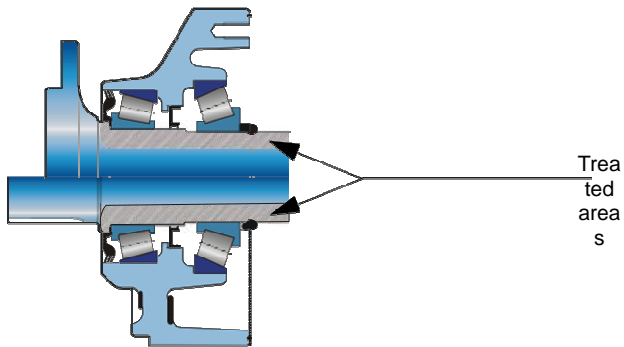
Enables certain combinations different from the standard mountings.



Consult your Poclairn Hydraulics sales engineer.

J - Treated shaft

Heat treatment on the indicated bearing radius and splines.



N - Drain on the bearing

A purge screw enables the motor to be mounted vertically, the shaft oriented upward.