

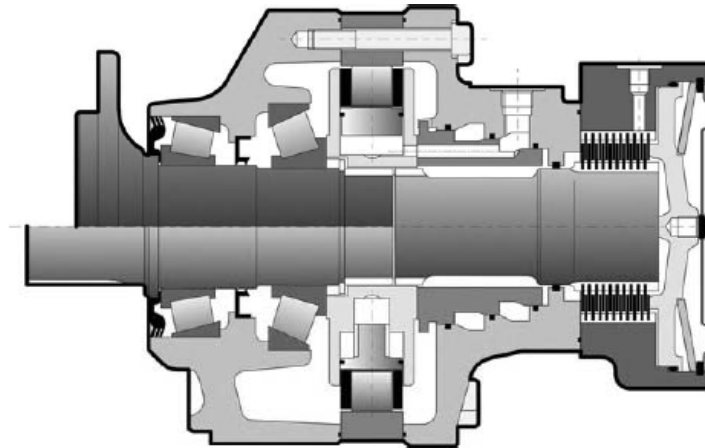


MS MOTORS



MS/MSE18. HYDRAULIC MOTOR.

CHARACTERISTICS



Motor inertia 0.2 kg.m²



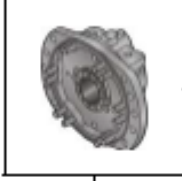
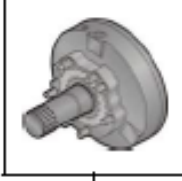
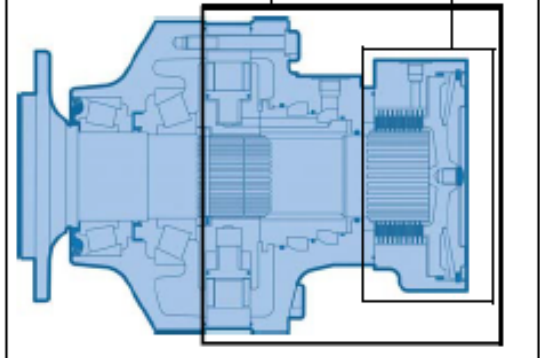
C	①		②		Theoretical torque		Max. power			Max. speed		Max. pressure		
	cm ³ /r [cu.in/rev.]	cm ³ /r [cu.in/rev.]	at 100 bar	at 1000 PSI	①	②	①	②	②	①	②			
			Nm	[lb.ft]	kW [HP]	kW [HP]	kW [HP]	preferred	non-preferred	l/min [RPM]	l/min [RPM]	bar [PSI]		
Cams with equal lobes	MS18	6	1 091 [66,5]	546 [33,3]	1 735 [882]						170	170	450 [6 527]	
		8	1 395 [85,1]	698 [42,5]	2 218 [1 128]						155	160		
		9	1 571 [95,8]	786 [47,9]	2 498 [1 270]						140	155		
		0	1 747 [106,5]	874 [53,3]	2 778 [1 413]	70 [94]	47 [63]	35 [47]			125	150		
		1	1 911 [116,6]	956 [58,3]	3 038 [1 545]						115	135		
		2	2 099 [128,0]	1050 [64,0]	3 337 [1 697]						100	125		
Cams with unequal lobes	MS18	0	2 340 [142,7]	1170 [71,4]	3 721 [1 892]						90	110	400 [5 802]	
		1	2 560 [156,1]	1280 [78,1]	4 070 [2 070]	70 [94]	47 [63]	35 [47]			85	100		
		2	2 812 [171,5]	1406 [85,8]	4 471 [2 274]						75	90		
		P	1 501 [91,5]	874 [53,3] 627 [38,2]	2 387 [1 214]						125	150		
		K	1 501 [91,5]	956 [58,3] 545 [33,2]	2 387 [1 214]						115	135		
		D	1 572 [95,9]	1049 [64,0] 523 [31,9]	2 499 [1 271]	70 [94]	47 [63]	35 [47]			100	125		
	MSE18	MS18	F	1 650 [100,6]	990 [60,4] 660 [40,3]	2 624 [1 334]						110	135	450 [6 527]
			A	1 745 [106,4]	1049 [64,0] 698 [42,6]	2 775 [1 411]						100	125	
			B	1 865 [113,7]	1049 [64,0] 816 [49,8]	2 965 [1 508]						100	125	
			P	2 010 [122,6]	1170 [71,4] 840 [51,2]	3 196 [1 625]						90	110	
			K	2 010 [122,6]	1280 [78,1] 730 [44,5]	3 196 [1 625]						85	100	
			D	2 106 [128,4]	1406 [85,8] 700 [42,7]	3 349 [1 703]	70 [94]	47 [63]	35 [47]			75	90	
MSE18	MSE18	F	2 209 [134,7]	1326 [80,9] 883 [53,9]	3 512 [1 786]						85	95	400 [5 802]	
		A	2 341 [142,8]	1406 [85,8] 935 [57,0]	3 722 [1 893]						75	90		
		B	2 499 [152,4]	1406 [85,8] 1093 [66,7]	3 973 [2 021]						75	90		

① First displacement

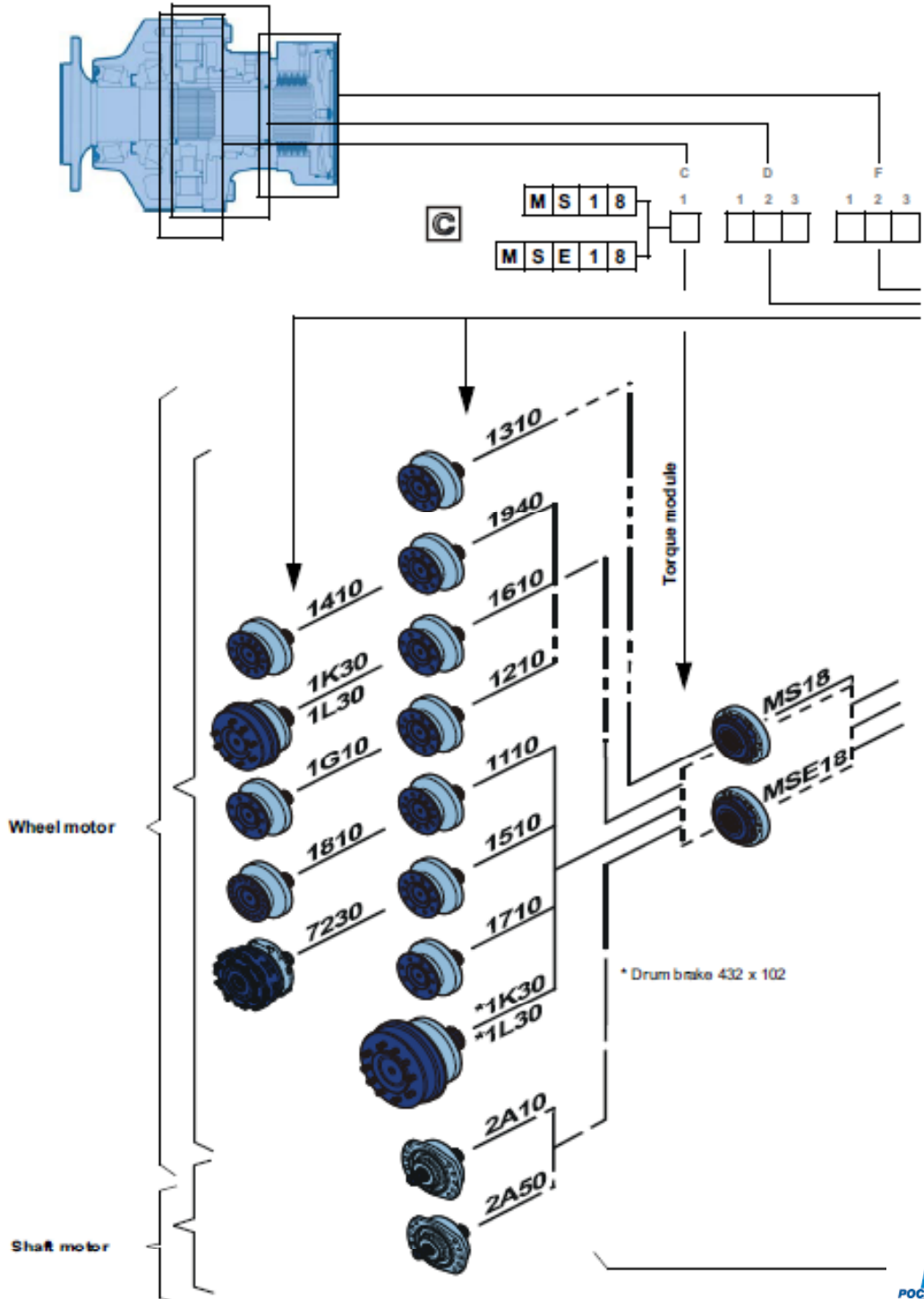
② Second displacement

* See option "M" for higher speed.

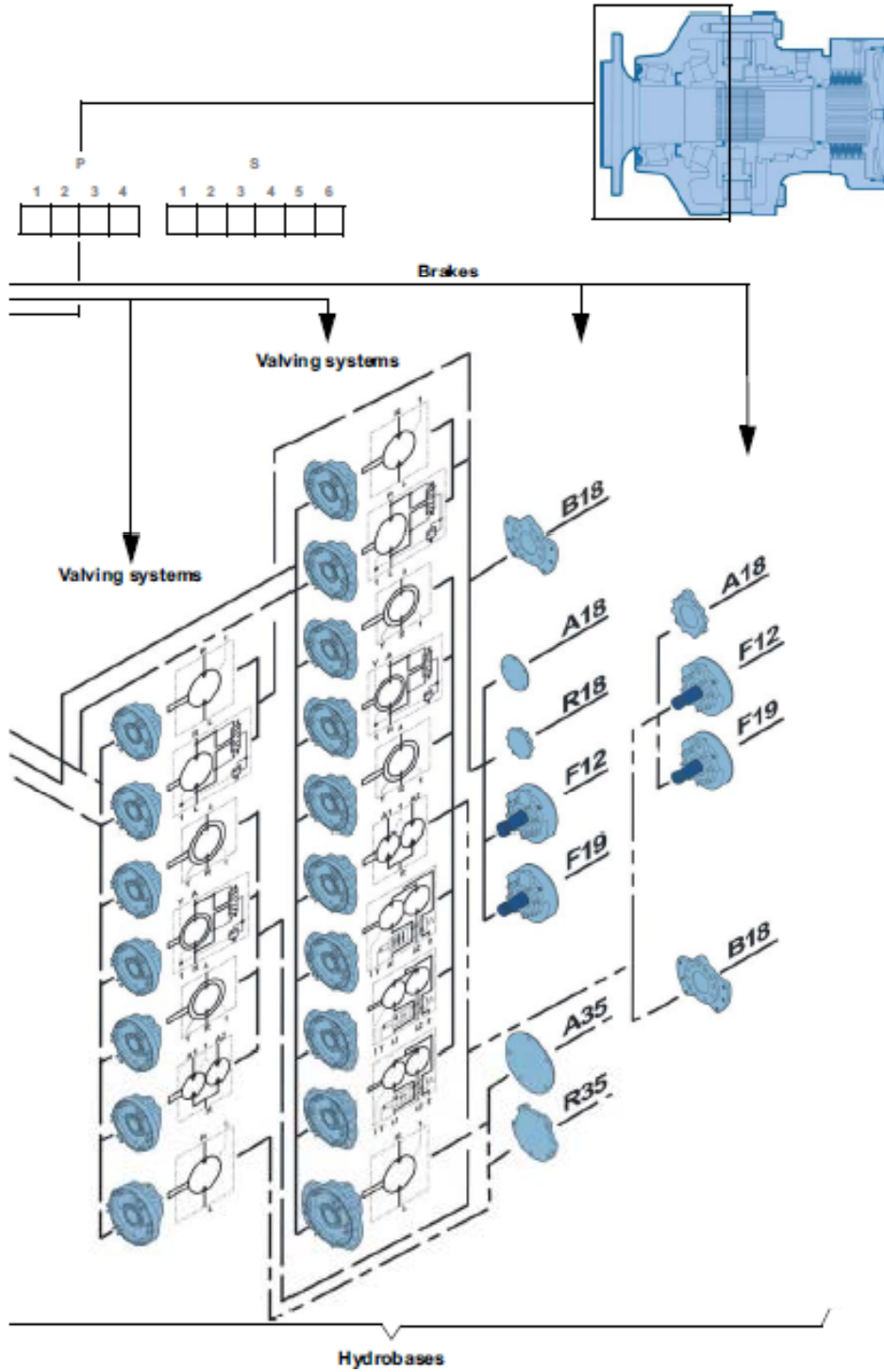
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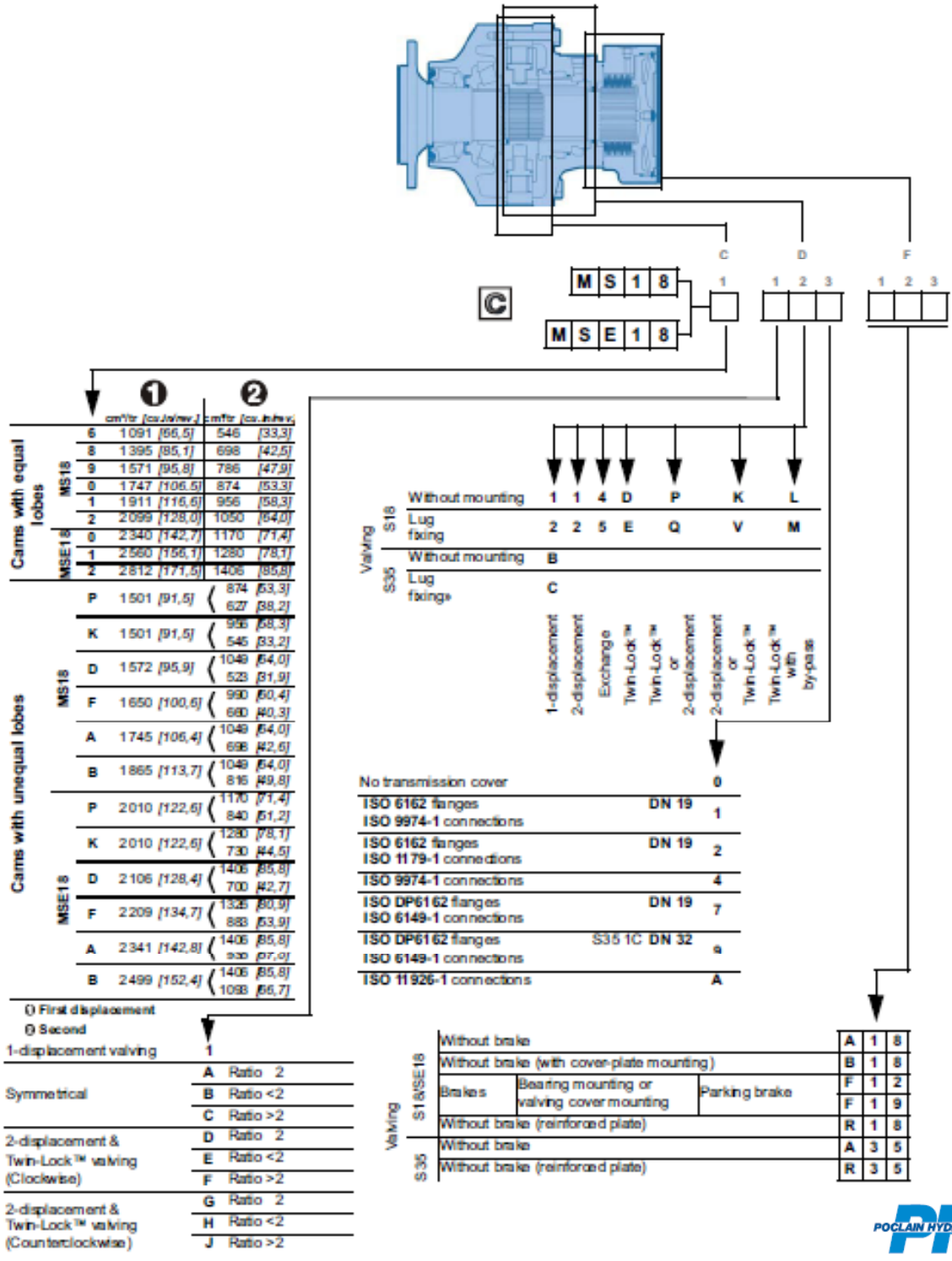
MODULARITY



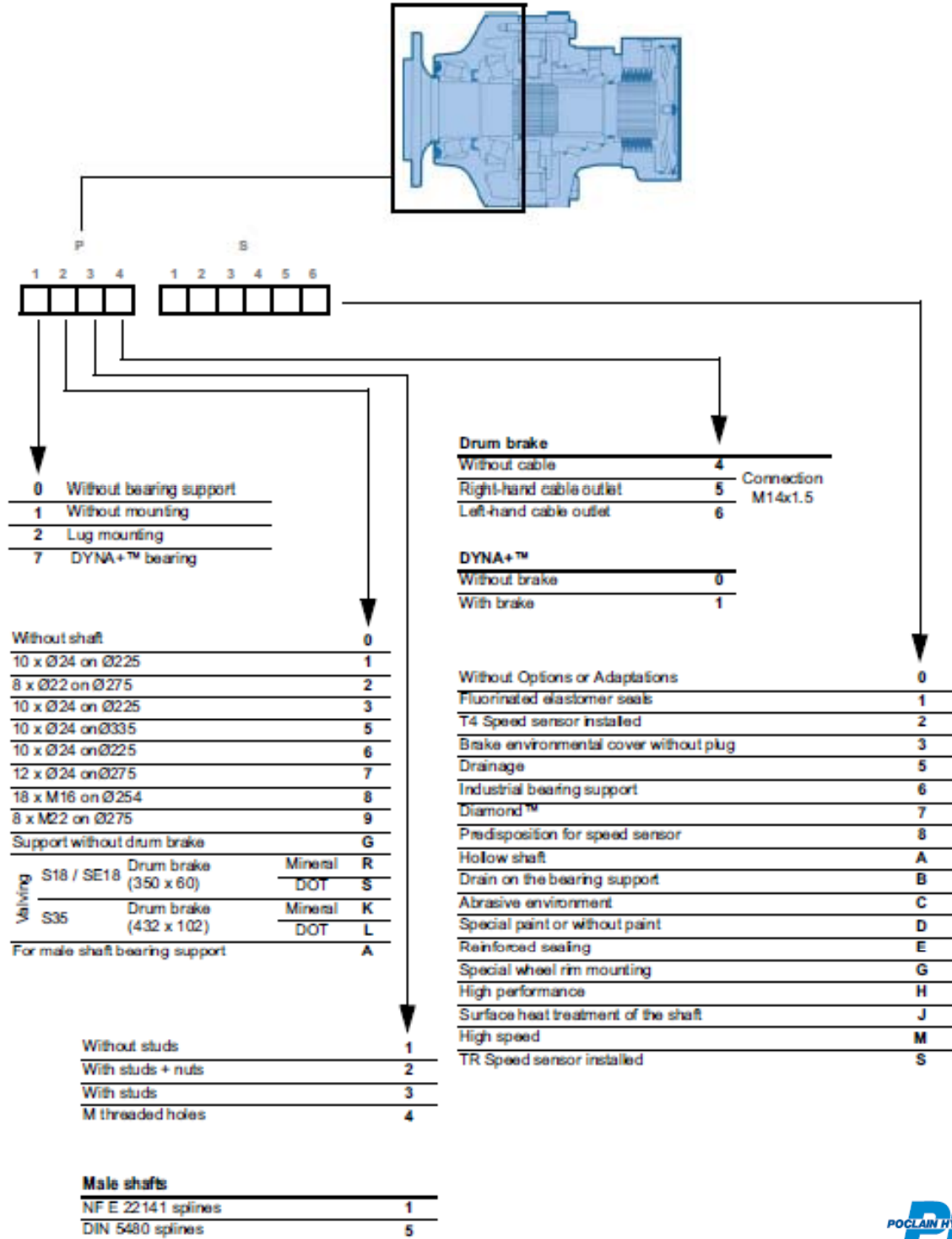
MODULARITY



MODEL CODE



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 code.



Weight of component without oil.



Volume of oil.



Units.



Tightening torque.



Screws.



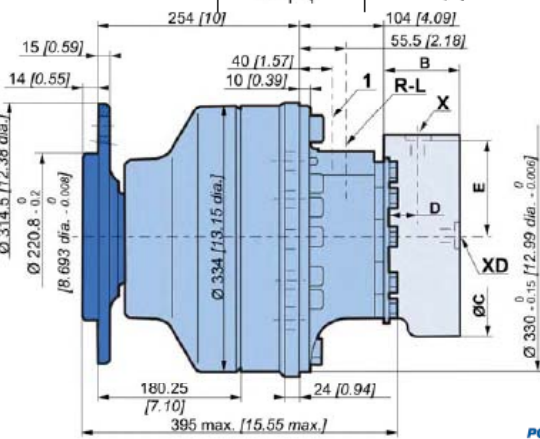
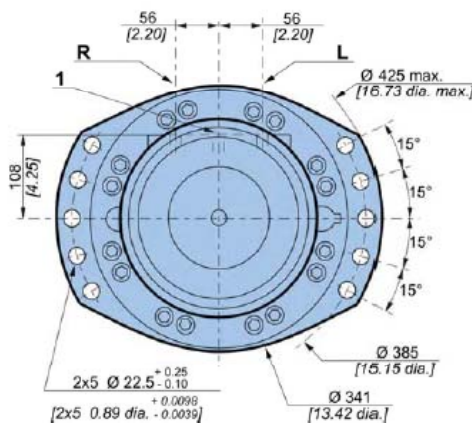
Information intended for Poclairn-Hydraulics personnel.

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>



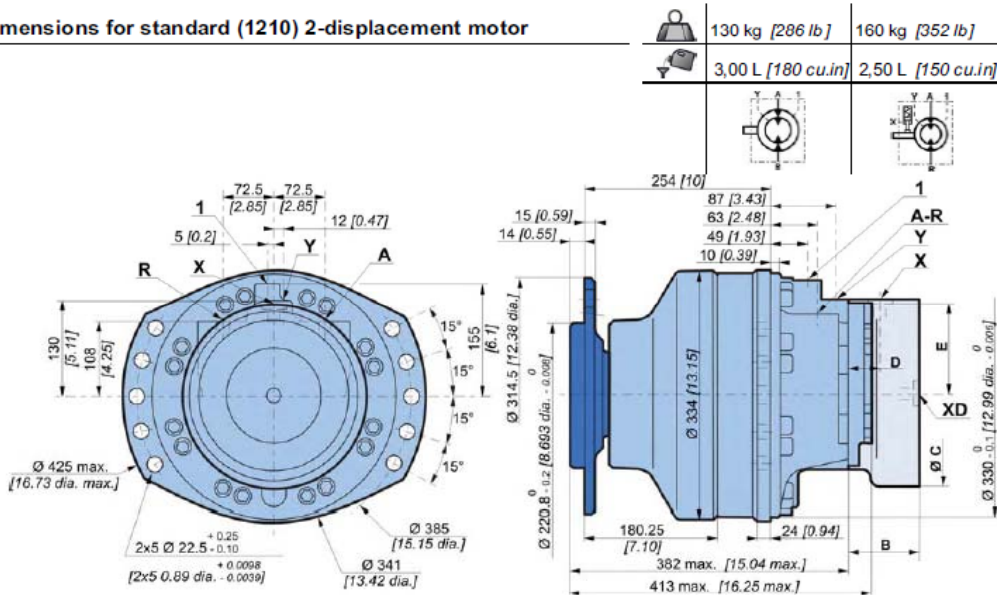
Dimensions for standard (1210) 1-displacement motor

	120 kg [264 lb]	150 kg [330 lb]
	3,00 L [180 cu.in]	2,50 L [150 cu.in]

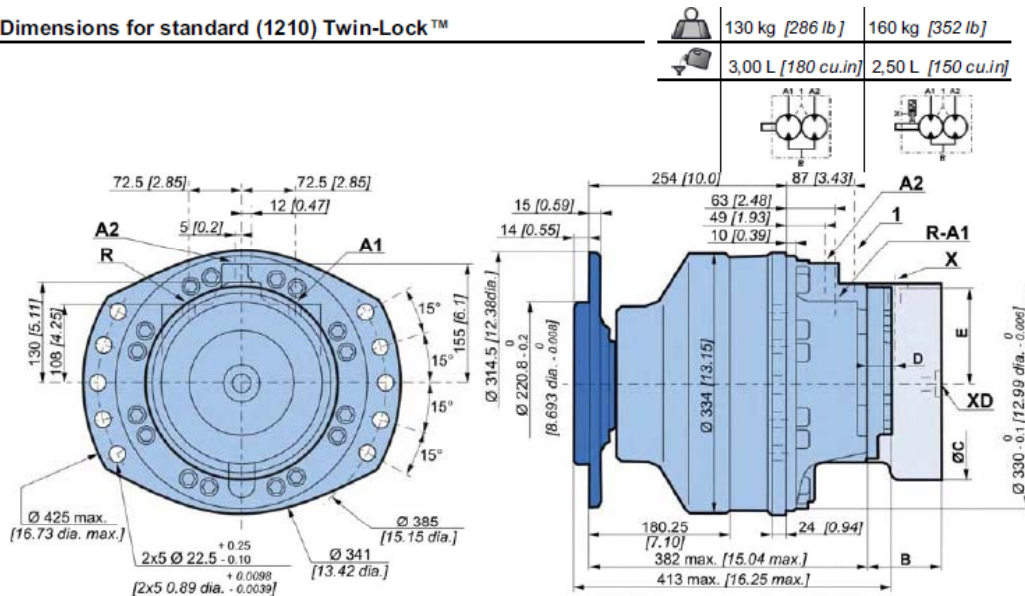


WHEEL MOTOR

Dimensions for standard (1210) 2-displacement motor



Dimensions for standard (1210) Twin-Lock™



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

	F12	F19
B	76,7 [3,02]	98,5 [3,88]
C	Ø247 [9,72 dia.]	Ø250 [9,84 dia.]
D	25 [0,98]	45 [1,77]
E	155 [6,10]	121,5 [4,78]

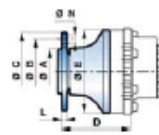


Also see 'Brakes' section (thumbnail opposite).



Support types

	C			D			F			P				S								
	M S 1 8				1 2 3				1 2 3				1 2 3 4				1 2 3 4 5 6					
	M S E 1 8				1 2 3				1 2 3				1 2 3 4				1 2 3 4 5 6					
C	A	B	C	D	E	N	Wheel rim mountings	L														
	mm [in]	mm [in]	mm [in]	mm [in]	mm [in]	mm [in]		mm [in]														
	Ø 175,7 [6,92 dia.]	Ø 225 [8,86 dia.]	Ø 265 [10,43 dia.]	253,45 [9,98]	Ø 334 [13,15 dia.]	Ø 24 [0,94 dia.]	10 x M22x1.5	14 [0,55]														
	Ø 220,7 [8,69 dia.]	Ø 275 [10,83 dia.]	Ø 314 [12,36 dia.]	253,25 [9,97]	Ø 334 [13,15 dia.]	Ø 22 [0,87 dia.]	8 x M20x1.5	14 [0,55]														
	Ø 220,7 [8,69 dia.]	Ø 275 [10,83 dia.]	Ø 314 [12,36 dia.]	253,25 [9,97]	Ø 334 [13,15 dia.]	Ø 24 [0,94 dia.]	12 x M22x1.5	18 [0,71]														
	Ø 220,7 [8,69 dia.]	Ø 275 [10,83 dia.]	Ø 314 [12,36 dia.]	253,25 [9,97]	Ø 334 [13,15 dia.]	Ø 24 [0,94 dia.]	8 x M20x1.5	18 [0,71]														
	Ø 175,7 [6,92 dia.]	Ø 225 [8,86 dia.]	Ø 276 [10,87 dia.]	208,75 [8,22]	Ø 334 [13,15 dia.]	Ø 24 [0,94 dia.]	10 x M22x1.5	14 [0,55]														
	Ø 220,7 [8,69 dia.]	Ø 254 [10,00 dia.]	Ø 285 [11,22 dia.]	163,2 [6,43]	Ø 334 [13,15 dia.]	Ø 17,5 [0,69 dia.]	10 x M16x1.5	15 [0,59]														
	Ø 220,7 [8,69 dia.]	Ø 254 [10,00 dia.]	Ø 285 [11,22 dia.]	163,2 [6,43]	Ø 334 [13,15 dia.]	10 x M16x1.5	-	15 [0,59]														
	Ø 280,7 [11,05 dia.]	Ø 335 [13,19 dia.]	Ø 382 [15,04 dia.]	292,2 [11,50]	Ø 334 [13,15 dia.]	Ø 24 [0,94 dia.]	10 x M22x1.5	25 [0,98]														
	Ø 175,7 [6,92 dia.]	Ø 225 [8,86 dia.]	Ø 265 [10,43 dia.]	208,75 [8,22]	Ø 334 [13,15 dia.]	Ø 24 [0,94 dia.]	10 x M22x1.5	16,5 [0,65]														



The supports in gray must not be assembled with an MSE hydrobase.

Studs

		P	C min.	C max.	D	Class	(1) *	(2) *
		mm [in]	mm [in]	mm [in]	mm [in]		N.m [lb.ft]	N.m [lb.ft]
Various studs	M16 x 2	50 [1.97]	5 [0.20]	17,75 [0.70]	21 [0.83]	12.9	300 [221.3]	380 [280.3]
	M20 x 1.5	60 [2.36]		20 [0.79]	25 [0.98]		600 [442.5]	770 [567.9]
	M20 x 1.5	70 [2.76]		27 [1.06]	25 [0.98]		695 [512.6]	1 050 [774.4]
	M22 x 1.5	80 [3.15]		24 [0.94]	26 [1.02]		275 [202.8]	275 [202.8]
Screws	M16 x 1.5	-	-	29 [1.14]	26 [1.02]	10.9	535 [394.6]	535 [394.6]
	M20 x 1.5	-	-	-	-		-	-

(*) 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.



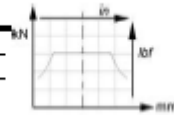
Load curves

Permissible radial loads

Test conditions :

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

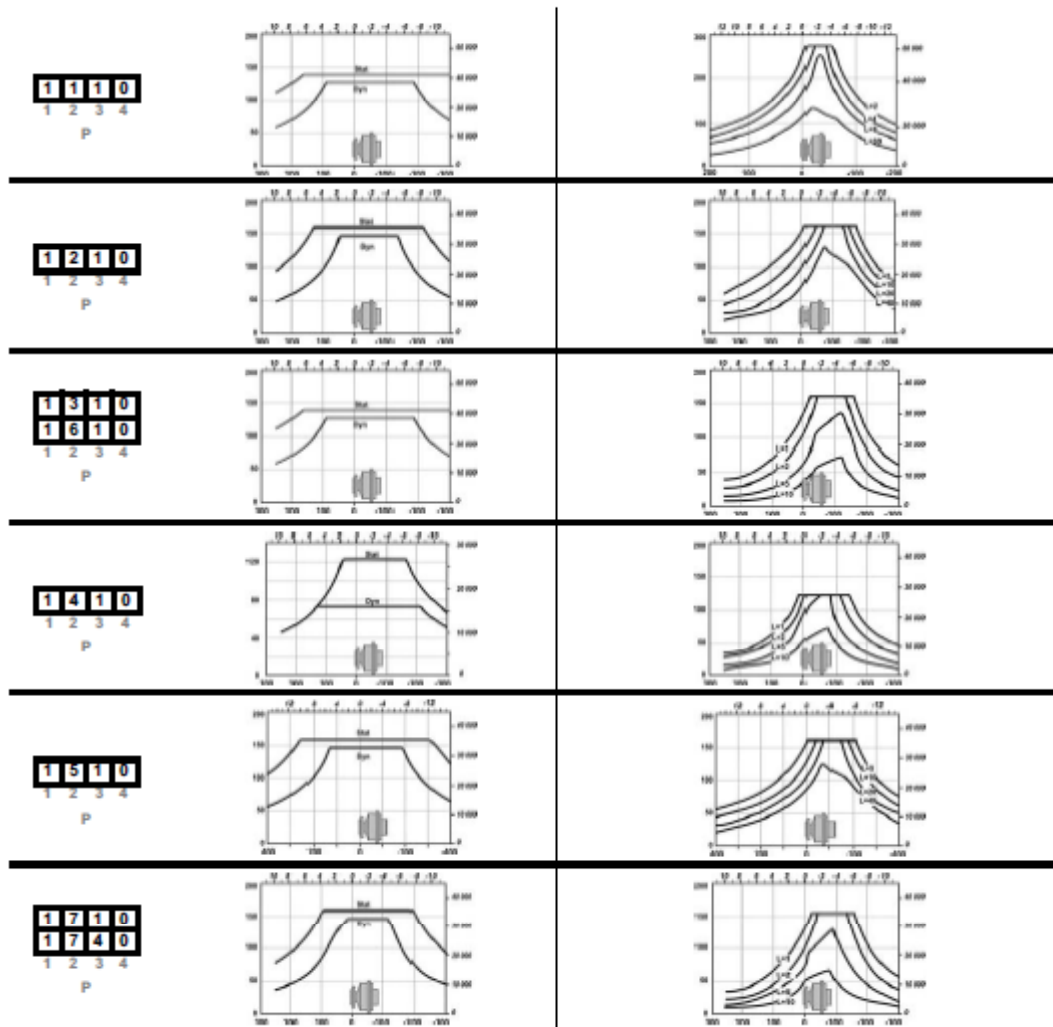
Dynamic : 0 tr/min [0 RPM], code 0 displacement, without axial load at max. torque



Service life of bearings

Test conditions :

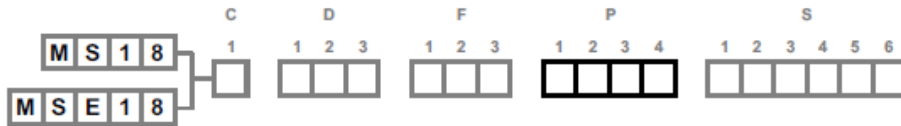
L : Millions B10 revolutions at 150 bars (average pressure), with 25 cSt fluid, code 0 displacement, without axial load.



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 (continued)



C	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 9 1 0 1 2 3 4 P	Ø 220,7 [8,69 dia.]	Ø 275 [10,83 dia.]	Ø 314 [12,36 dia.]	208,75 [8,22]	Ø 334 [13,15 dia.]	Ø 22 [0,87 dia.]	8 x M20x1.5	18 [0,71]	
1 K 3 0 1 L 3 0 1 2 3 4 P 350 x 60	Ø 220,7 [8,69 dia.]	Ø 275 [10,83 dia.]	Ø 378 [14,88 dia.]	320,8 [12,63]	Ø 334 [13,15 dia.]	Ø 24 [0,94 dia.]	8 x M20x1.5	44 [1,73]	 Also see 'Brakes' section (thumbnail opposite).
1 G 1 0 1 2 3 4 P	Ø 280,7 [11,05 dia.]	Ø 335 [13,19 dia.]	Ø 385 [15,16 dia.]	301 [11,85]	Ø 334 [13,15 dia.]	Ø 24 [0,94 dia.]	10 x M20x1.5	14 [0,55]	
1 K 3 0 1 L 3 0 1 2 3 4 P 432 x 102	Ø 280,7 [11,05 dia.]	Ø 335 [13,19 dia.]	Ø 461,5 [18,17 dia.]	361,9 [14,25]	Ø 334 [13,15 dia.]	Ø 24 [0,94 dia.]	10 x M22x1.5	48 [1,89]	 Also see 'Brakes' section (thumbnail opposite).
7 2 3 0 1 2 3 4 P	Ø 220,7 [8,69 dia.]	Ø 275 [10,83 dia.]	Ø 363 [14,29 dia.]	264 [10,39]	Ø 381 [15,00 dia.]	212,0 [8,35]	8 x M20x1.5	44 [1,73]	 Also see 'Brakes' section (thumbnail opposite).

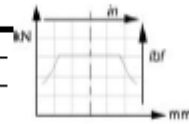
Load curves (continued)

Permissible radial loads

Test conditions :

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

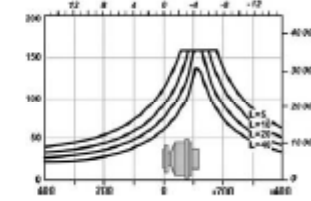
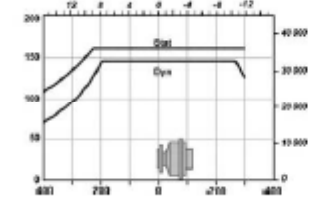
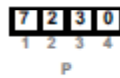
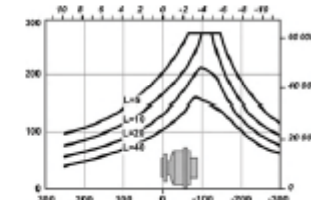
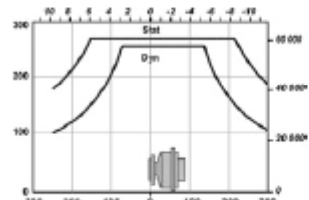
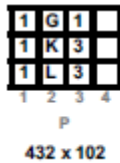
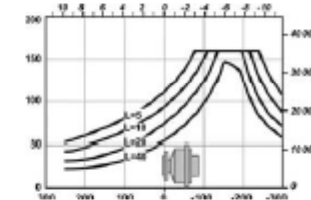
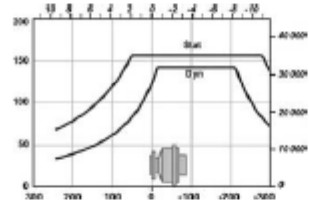
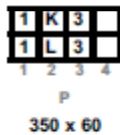
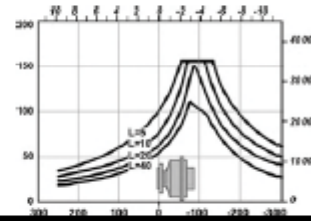
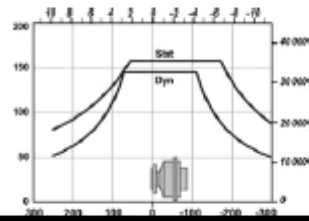
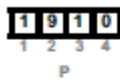
Dynamic : 0 tr/min [0 RPM], code 0 displacement, without axial load at max. torque



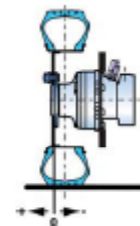
Service life of bearings

Test conditions :

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



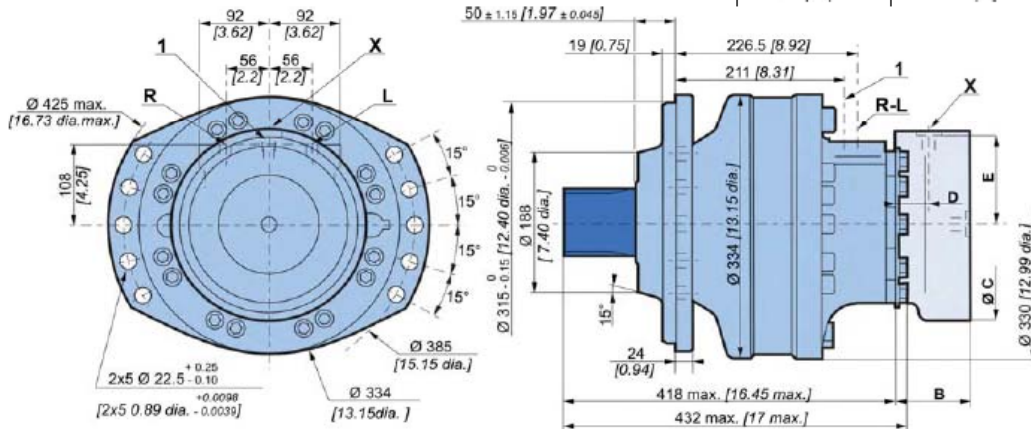
The service life of the components is influenced by the pressure. You must check that the combination of forces applied (Axial load / Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications.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



SHAFT MOTOR

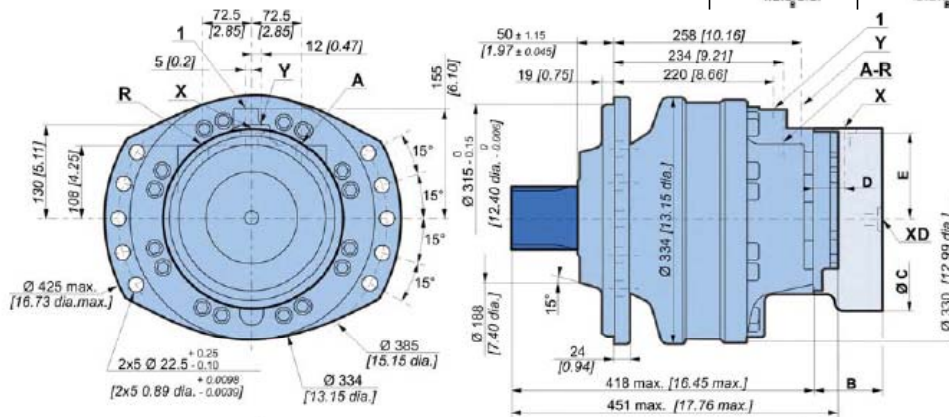
Dimensions for standard (2A50) 1-displacement motor

	112 kg [246 lb]	142 kg [312 lb]
	3,00 L [180 cu.in]	2,50 L [150 cu.in]



Dimensions for standard (2A50) 2-displacement motor

	112 kg [246 lb]	152 kg [334 lb]
	3,00 L [180 cu.in]	2,50 L [150 cu.in]



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

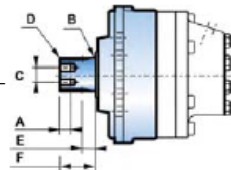
	F12	F19
B	76,7 [3,02]	98,5 [3,88]
C	$\text{Ø } 247$ [9,72 dia.]	$\text{Ø } 250$ [9,84 dia.]
D	25 [0,98]	45 [1,77]
E	155 [6,10]	121,5 [4,78]

I Also see 'Brakes' section (thumbnail opposite).



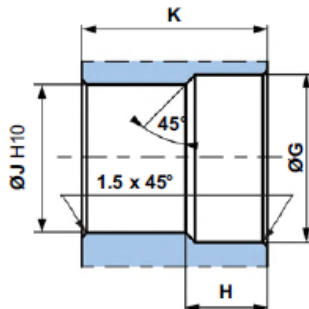


		A	B	C	D	E	F
DIN 5480 splines							
2 A 5 0	Nominal Ø	23	R3	35	2 x M14	23	90
	Module	[0,91]	[R 0,12]	[1,38]		[0,91]	[3,54]
	Z						
NF E22-141 splines							
2 A 1 0	Nominal Ø	23	R3	35	2 x M14	23	90
	Module	[0,91]	[R 0,12]	[1,38]		[0,91]	[3,54]
	Z						



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

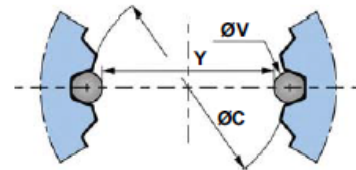
Splined coupling



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

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

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



		Ø G	H	Ø J	K	N	Mo	Z	Offset	Ø C (H10)	Ø V	Y	Tolerance µm [µin]
2 A 1 0		91	28	85	89	90	2,5	34	2	85	5	80,169	+104 / 0
		[3,58]	[1,10]	[3,35]	[3,50]	[3,54]			[0,08]	[3,35]	[0,20]	[3,16]	[+4.094 / 0]
2 A 5 0		91,5	25	84	89	90	3	28	1,35	84	5,25	79,110	+68 / 0
		[3,60]	[0,98]	[3,31]	[3,50]	[3,54]			[0,0531]	[3,31]	[0,21]	[3,11]	[+2.677 / 0]

General tolerances : ± 0.25 [±0.0098].
 Material : 35CD4 [4135].
 Hardening treatment to obtain R = 800 to 900 N/mm² [R = 116 030 to 130 533 PSI].



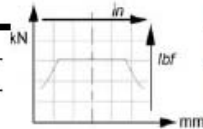
Load curves

Permissible radial loads

Test conditions :

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

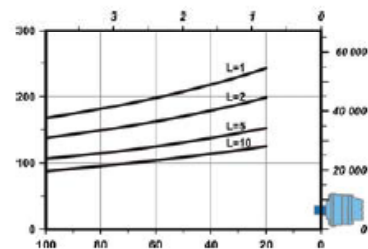
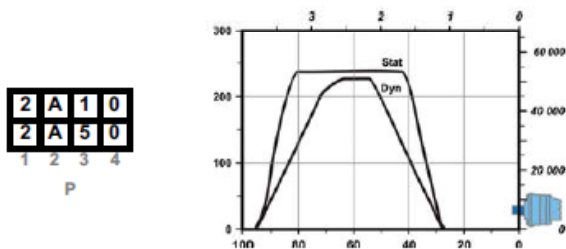
Dynamic : 0 tr/min [0 RPM], code 0 displacement, without axial load at max. torque



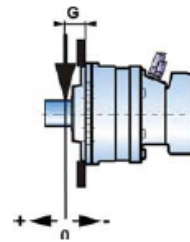
Service life of bearings

Test conditions :

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

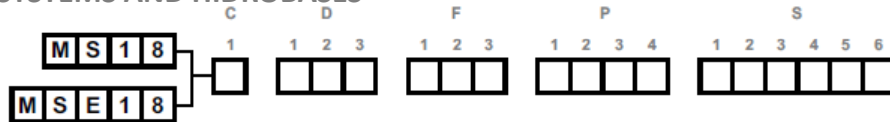


The service life of the components is influenced by the pressure. You must check that the combination of forces applied (Axial load / Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications.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



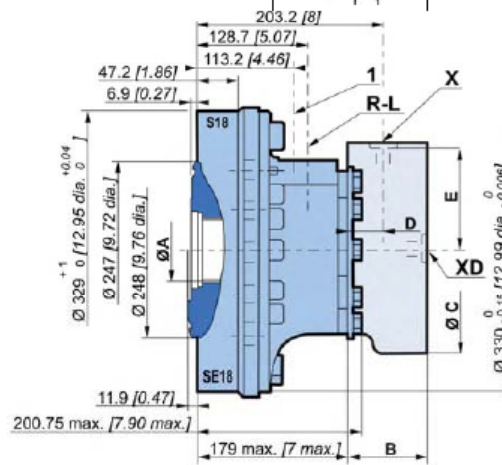
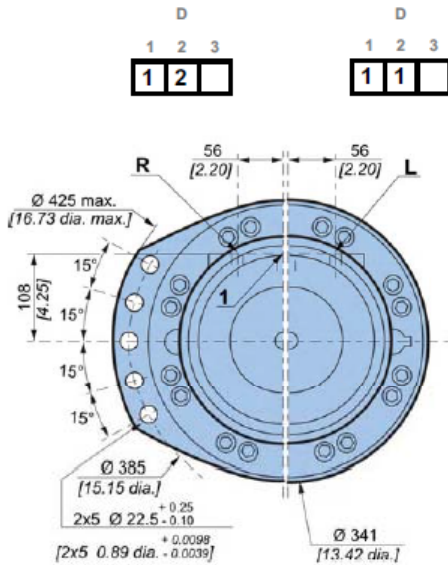
	C	G
2 A 1 0		96.95 [3.82]
2 A 5 0		96.95 [3.82]

VALVING SYSTEMS AND HIDROBASES



Dimensions for 1-displacement valving

	68 kg [150 lb]	93 kg [205 lb]
	1.25 L [75 cu.in]	1.00 L [60 cu.in]



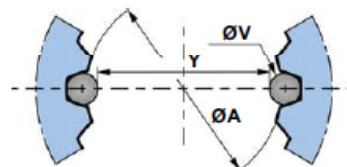
	C	F12	F19
	B	76,7 [3,02]	98,5 [3,88]
	C	Ø247 [9,72 dia.]	Ø250 [9,84 dia.]
	D	25 [0,98]	45 [1,77]
	E	155 [6,10]	121,5 [4,78]

Also see 'Brakes' section (thumbnail opposite).

Cylinder block splines

(as per standard NF E22-141)

ØA	Module	Z	Dimension on 2 pins	
			Y	ØV
90 [3,543]	2,5	34	65,169 [3,156]	5 [0,197]



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

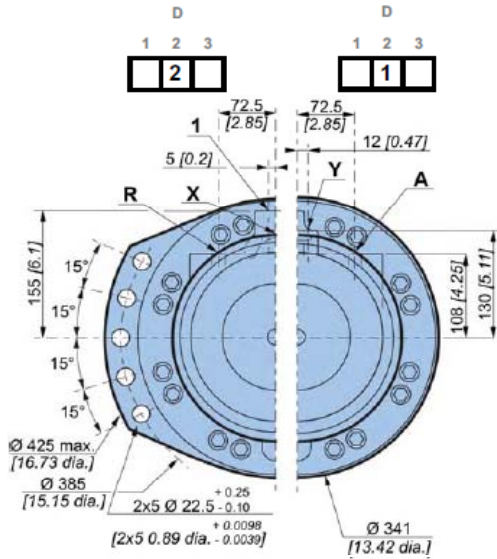


We must provide you with a detailed plan of the interface for any hydraulic unit use, consult your Poclair Hydraulics sales engineer.

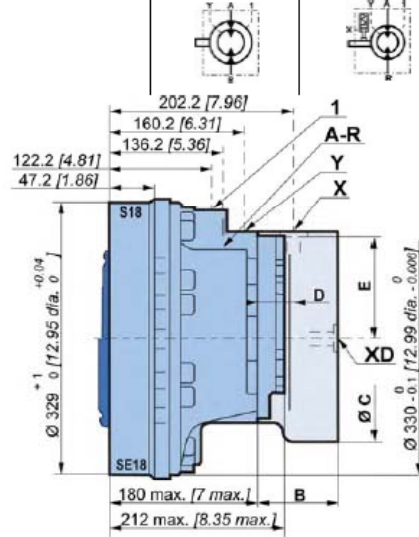


VALVING SYSTEMS AND HIDROBASES

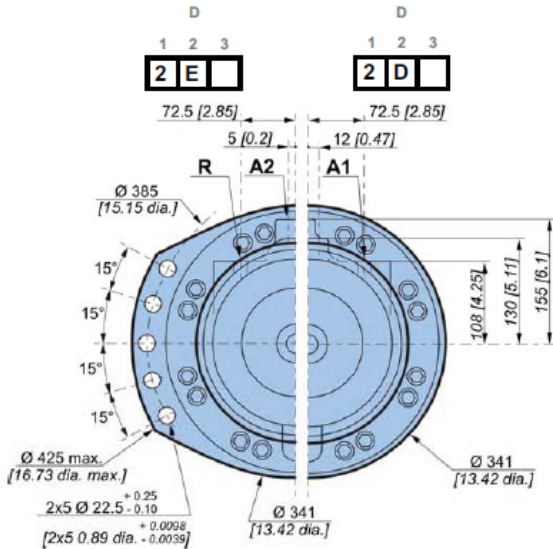
Dimensions for 2-displacement valving



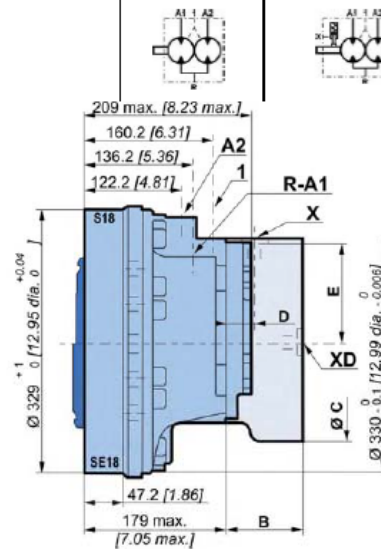
	78 kg [172 lb]	99 kg [218 lb]
	1,25 L [75 cu.in.]	1,00 L [60 cu.in.]



Dimensions for Twin-Lock™ valving



	78 kg [172 lb]	99 kg [218 lb]
	1,25 L [75 cu.in.]	1,00 L [60 cu.in.]

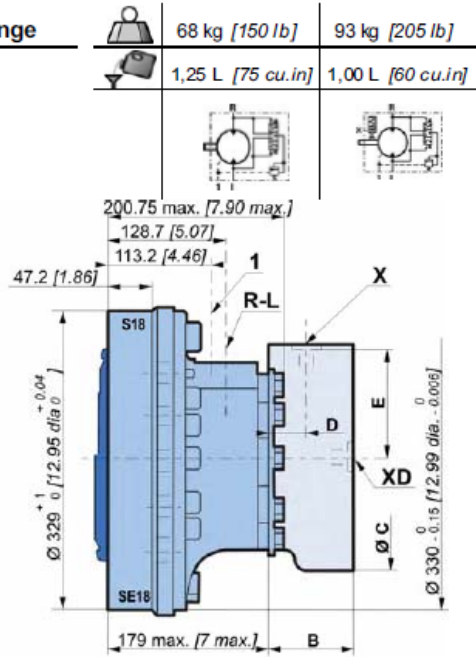
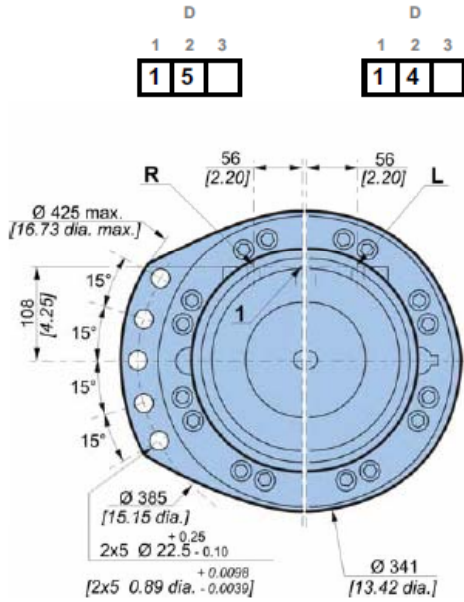


	F12	F19
B	76,7 [3,02]	98,5 [3,88]
C	Ø247 [9,72 dia.]	Ø250 [9,84 dia.]
D	25 [0,98]	45 [1,77]
E	155 [6,10]	121,5 [4,78]

Also see 'Brakes' section (thumbnail opposite).

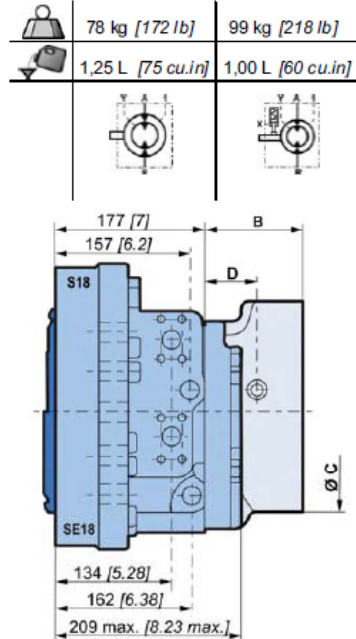
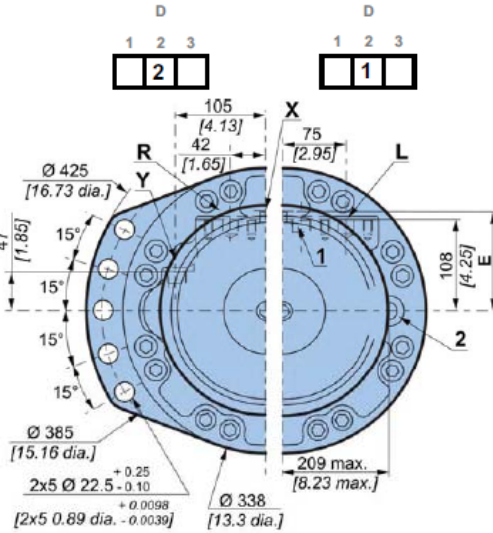


Dimensions for 1-displacement valving with built-in exchange



Dimensions for 2-displacement symmetrical valving

For a small displacement, there is no preferred orientation for this motor.

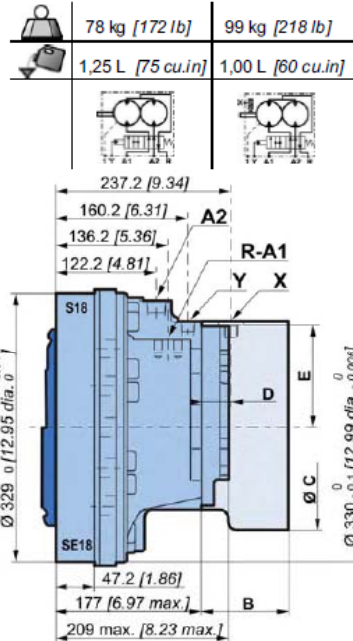
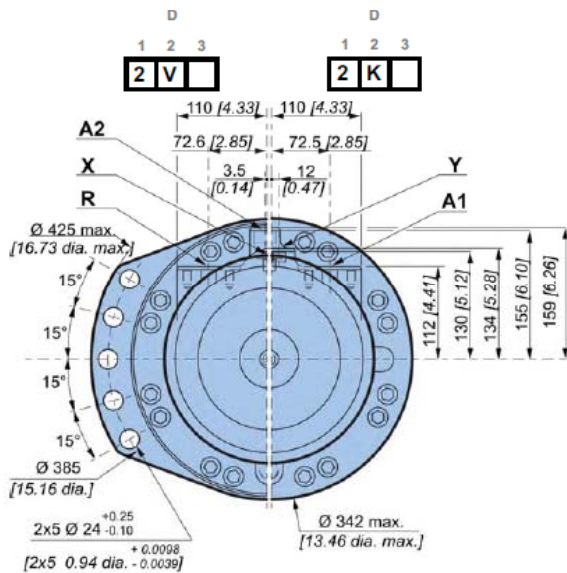


	C	F12	F19
	B	76,7 [3,02]	98,5 [3,88]
	C	Ø247 [9,72 dia.]	Ø250 [9,84 dia.]
	D	25 [0,98]	45 [1,77]
	E	155 [6,10]	121,5 [4,78]

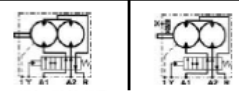
Also see 'Brakes' section (thumbnail opposite).



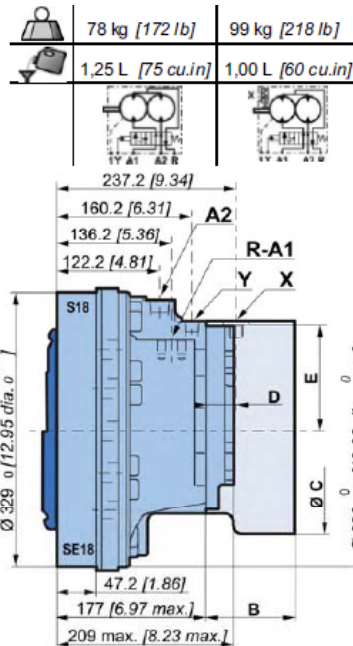
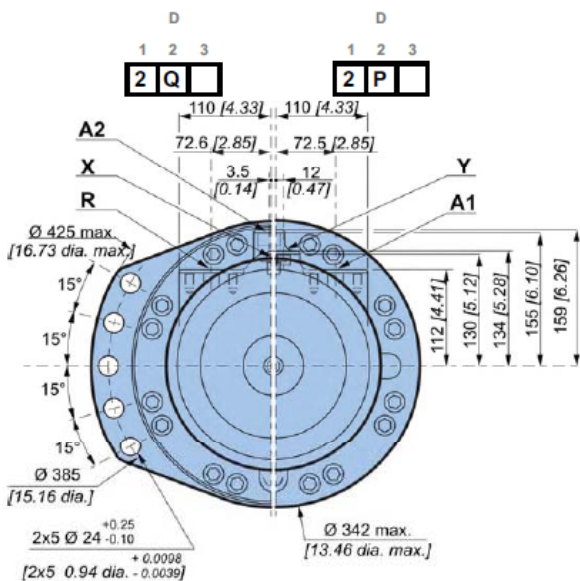
Dimensions for Twin-Lock™ / 2-displacement valving



	78 kg [172 lb]	99 kg [218 lb]
	1,25 L [75 cu.in.]	1,00 L [60 cu.in.]



Dimensions for 2-displacement / Twin-lock™ valving



	78 kg [172 lb]	99 kg [218 lb]
	1,25 L [75 cu.in.]	1,00 L [60 cu.in.]



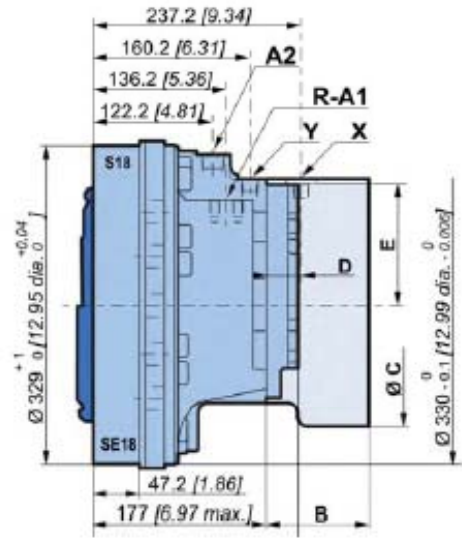
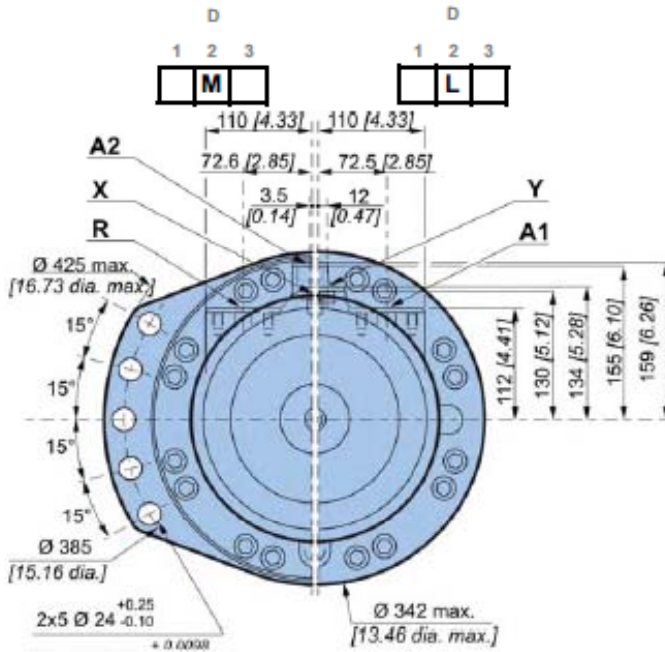
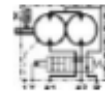
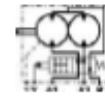
	F12	F19
C		
B	76,7 [3,02]	98,5 [3,88]
C	Ø247 [9,72 dia.]	Ø250 [9,84 dia.]
D	25 [0,98]	45 [1,77]
E	155 [6,10]	121,5 [4,78]

Also see 'Brakes' section (thumbnail opposite).



Dimensions for Twin-Lock™ valving with by-pass

	78 kg [172 lb]	99 kg [218 lb]
	1,25 L [75 cu.in]	1,00 L [60 cu.in]

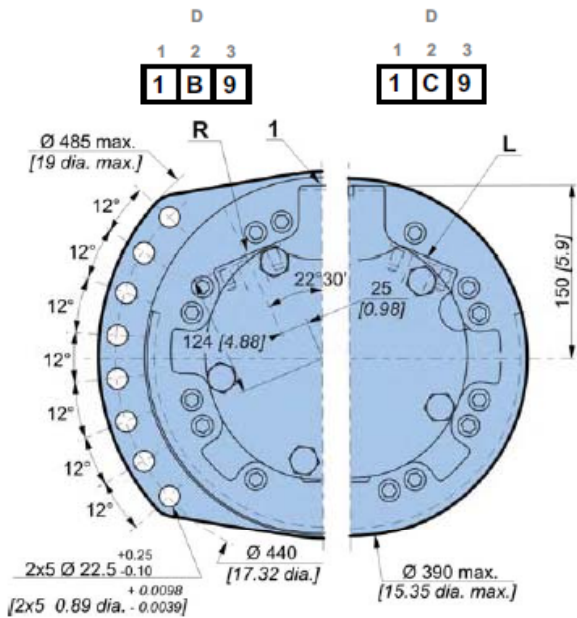


C	F12	F19
B	76,7 [3,02]	98,5 [3,88]
C	Ø247 [9,72 dia.]	Ø250 [9,84 dia.]
D	25 [0,98]	45 [1,77]
E	155 [6,10]	121,5 [4,78]

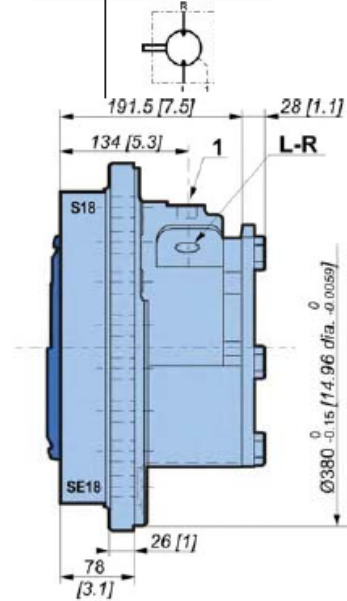
Also see 'Brakes' section (thumbnail opposite).

We can obtain a more important flow and speed with this valving system. For an accurate calculation, consult your Poclair Hydraulics application engineer.

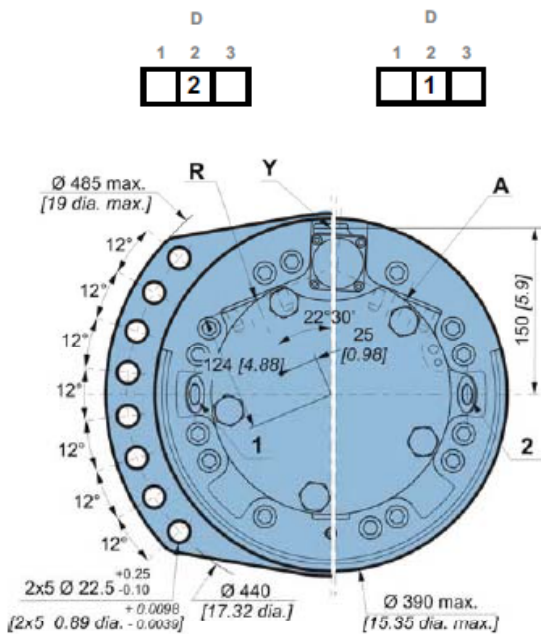
Dimensions for 1-displacement valving



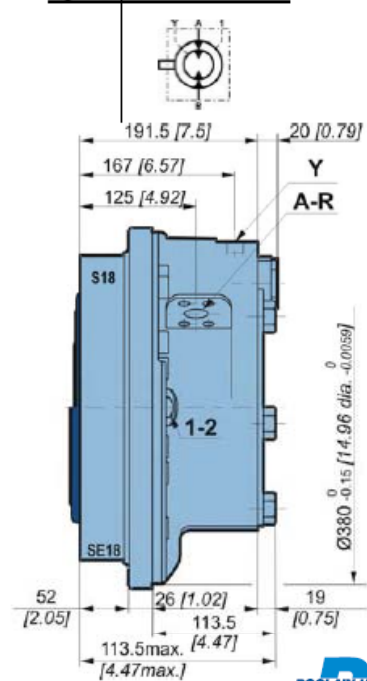
	91 kg [199 lb]
	2,00 L [120 cu.in]



Dimensions for 2-displacement valving



	91 kg [199 lb]
	2,00 L [120 cu.in]



Exchange

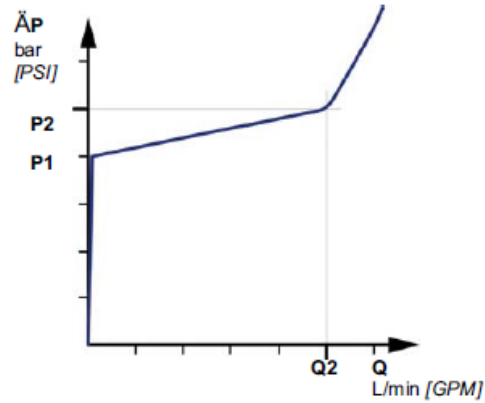
When a coding request is made, you must specify information on the threshold of the selector and the valve.

Selector spool

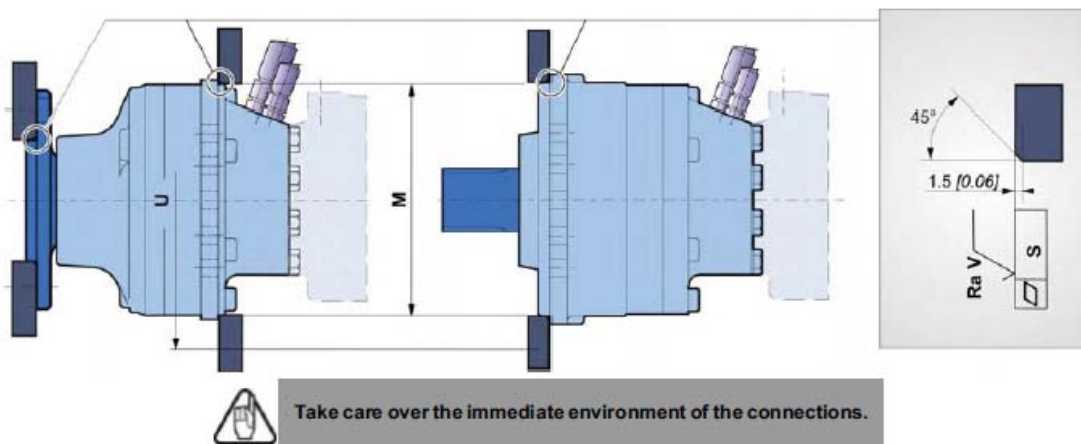
Selector threshold bar [PSI]	Opening pressure of selector bar [PSI]
8 [116]	9.9 ± 1.2 [144 ± 17]



Fitted valve

P1 bar [PSI]	Q2 L/min [GPM]	P2 bar [PSI]
13.5 [195]	14 [3.7]	16 [232]
18 [261]	15 [3.9]	21 [305]
22 [319]	16 [4.2]	25 [363]



Chassis mountings



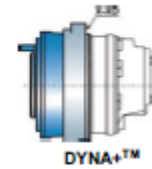
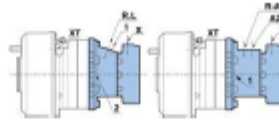
		ØM ⁽¹⁾	ØU	S	Ra V		Class	 *
MS35	Wheel motor	330 [12,99]	385 [15,16]	0,2 [0,008]	12,5 [0,492]	2 x 5 M20 x 2.5	10,9	580 N.m [428 lb.ft]
	Shaft motor	315 [12,40]	385 [15,16]			2 x 9 M20 x 2.5		
MS18 / MSE18	Wheel motor	330 [12,99]	385 [15,16]			2 x 8 M20 x 2.5		
	Shaft motor	380 [14,96]	440 [17,32]			2 x 8 M20 x 2.5		
	Short wheel motor					2 x 8 M20 x 2.5		

(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	Case drain	2 nd displacement control	Control of parking break	Control of drum break	Control of parking break	Control of service break	
818			R-L	1, 2		X	XT	X	XD	
1 displacement	A	SAE J5# ISO 11 926-1	† 1 B-12 UNF	7/8"-14 UNF		9/16"-8 UNF 3/4"-8 UNF		3/4"-16 UNF	9/16"-18 UNF	
	1	ISO 6 162 DIN 3 852 ISO 9 974-1	DN B PN400	M 22x1.5		M 16x15		M 6x15	M 4x15	
	2	ISO 6 162 BSPP ISO 1 179-1	DN B PN400	Ø21 [1/2" dia.]		Ø17 [3/8" dia.]		M 6x15	M 4x15	
	4	NFE48050 ISO 9 974-1	M27x2	M 22x1.5		M 16x15		M 6x15	M 4x15	
	7	ISO 6 162 SAE J5# ISO 11 926-1	DN B PN400	7/8"-14 UNF		9/16"-8 UNF 3/4"-8 UNF		3/4"-16 UNF	9/16"-18 UNF	
2 Displacement	A	SAE J5# ISO 11 926-1	† 1 B-12 UNF	7/8"-14 UNF	3/4"-16 UNF	9/16"-8 UNF		3/4"-16 UNF	9/16"-18 UNF	
	1	ISO 6 162 DIN 3 852 ISO 9 974-1	DN B PN400	M 22x1.5	M 6x15	M 16x15		M 6x15	M 4x15	
	1*	ISO 6 162 DIN 3 852 ISO 9 974-1	DN B PN400	M 22x1.5	M 22x1.5	M 16x15		M 6x15	M 4x15	
	4	NFE48050 ISO 9 974-1	M27x2	M 22x1.5	M 6x15	M 16x15		M 6x15	M 4x15	
	4*	NFE48050 ISO 9 974-1	M27x2	M 22x1.5	M 22x1.5	M 16x15		M 6x15	M 4x15	
	7	ISO 6 162 SAE J5# ISO 11 926-1	DN B PN400	7/8"-14 UNF	3/4"-16 UNF	9/16"-8 UNF 3/4"-8 UNF		3/4"-16 UNF	9/16"-18 UNF	
	7*	ISO 6 162 SAE J5# ISO 11 926-1	DN B PN400	7/8"-14 UNF	7/8"-14 UNF	9/16"-8 UNF 3/4"-8 UNF		3/4"-16 UNF	9/16"-18 UNF	
Twin-Lock™	A	SAE J5# ISO 11 926-1	† 1 B-12 UNF	† 1/16"-12 UNF	3/4"-16 UNF 7/8"-14 UNF	9/16"-18 UNF 3/4"-16 UNF		3/4"-16 UNF	9/16"-18 UNF	
	1	ISO 6 162 DIN 3 852 ISO 9 974-1	DN B PN400	M 27x2	M 22x1.5	M 6x15	M 16x15	M 6x15	M 4x15	
	7	ISO 6 162 SAE J5# ISO 11 926-1	DN B PN400	† 1/16"-12 UNF	3/4"-16 UNF	9/16"-18 UNF	9/16"-8 UNF 3/4"-8 UNF	3/4"-16 UNF	9/16"-18 UNF	
838			R-L	1, 2		X		X	XD	
	9	ISO 6 162 DIN 3 852 ISO 9 974-1	DN32 PN400	M 22x1.5		M 16x15		M 6x15	M 4x15	
2C			R-A	1, 2	Y	X		X	XD	
	1	ISO 6 162 DIN 3 852 ISO 9 974-1	DN25 PN400	M 22x1.5	M 6x15	M 16x15		M 6x15	M 4x15	
	7	ISO 6 162 SAE J5# ISO 11 926-1	DN25 PN400	† 1 B-12 UNF	9/16"-18 UNF	9/16"-8 UNF 3/4"-8 UNF		3/4"-16 UNF	9/16"-18 UNF	
		ISO 9 974-1					M 4x15			
Max. pressures	M S	bar (PSI)	450 [6 527]	450 [6 527]	1 [6]	30 [435]	30 [435]	120 [1740]	30 [435]	120 [1740]
	M SE		400 [5 802]	400 [5 802]						

* : Only symmetrical valving



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



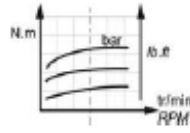
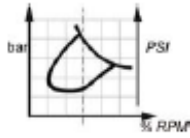
To find the connections' tightening torques, see the brochure "Installation guide" N° 801478197L.



Efficiency

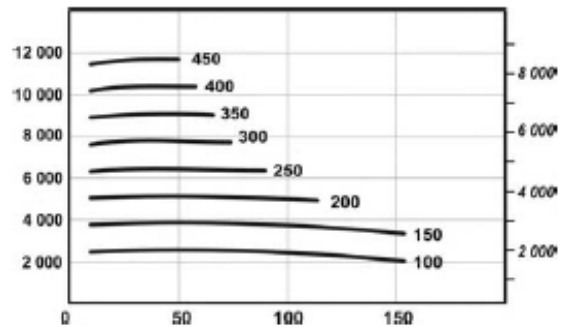
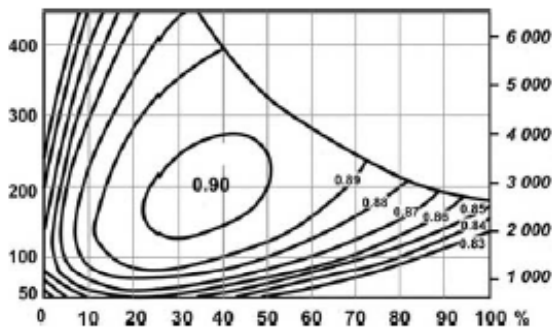
Overall efficiency

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

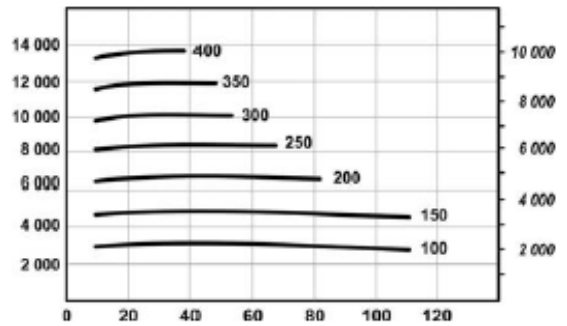
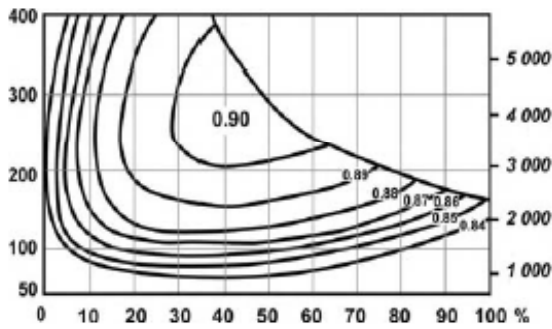


Actual output torque

MS18

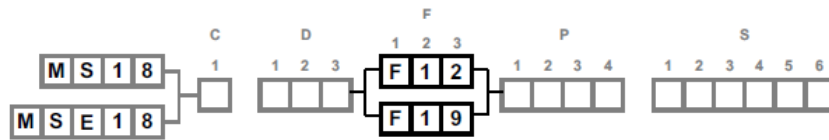


MSE18

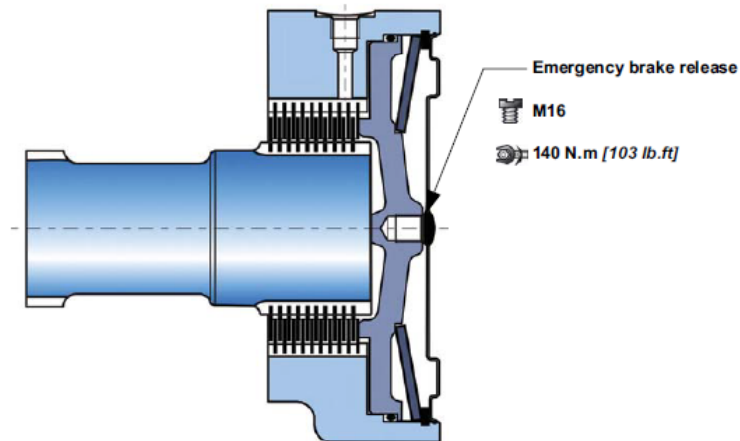


The starting torque is taken to be approximately 85% of the first value for available pressure. For a precise calculation, consult your Poclain Hydraulics application engineer.

BRAKES



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

C	F 1 2	F 1 9
Parking brake torque at 0 bars on housing (new brake)	11 840 Nm [8 730 lb.ft]	18 600 Nm [13 720 lb.ft]
Dynamic emergency braking torque at 0 bars on housing (max. 10 uses of emergency brakes)	7 695 Nm [5 680 lb.ft]	12 800 Nm [9 440 lb.ft]
Residual parking braking at 0 bars on housing *	8 880 Nm [6 550 lb.ft]	13 940 Nm [10 280 lb.ft]
Min. brake release pressure	12 bar [174 PSI]	12 bar [174 PSI]
Max. brake release pressure	30 bar [435 PSI]	30 bar [435 PSI]
Oil capacity	170 cm ³ [10,4 cu.in]	180 cm ³ [11,0 cu.in]
Volume for brake release	40 cm ³ [2,4 cu.in]	70 cm ³ [4,3 cu.in]
Max. energy dissipation	123 699 J	193 033 J

* After emergency brake has been used

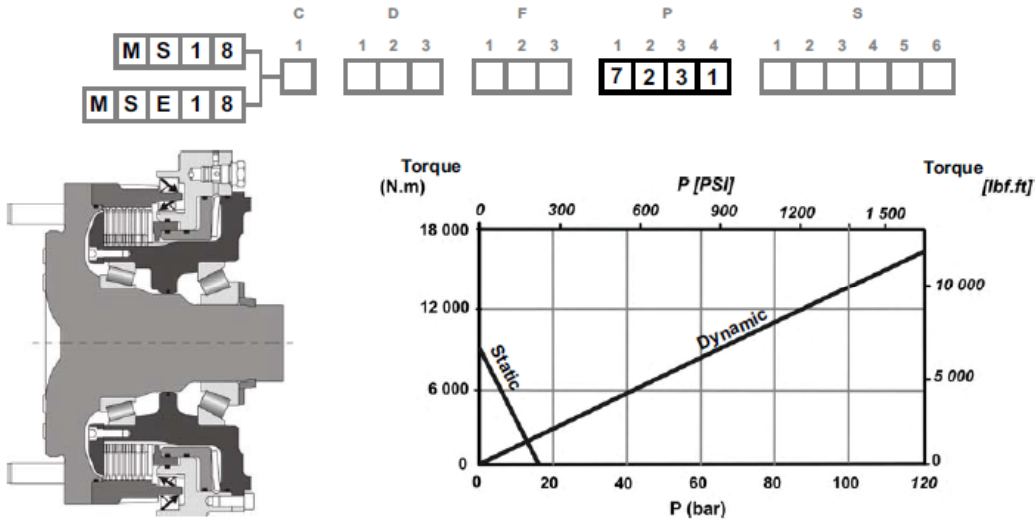


Do not run in multidisc brakes.



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.

DYNA+™ Brake



Brake operation

This multi-disk brake operates in two distinct ways:

- Either by an absence of pressure (static braking): The spring applies a force to the static piston that is transmitted to the dynamic piston, which clamps the fixed and free disks, preventing the shaft from turning. Braking torque decreases linearly as a function of unlocking pressure.
- Or by braking pressure (dynamic braking). The braking command creates a pressure on the dynamic braking piston, which clamps the fixed and free disks, preventing the shaft from turning. Braking torque increases linearly as a function of the unlocking pressure.

C 7 2 3 1

Hydraulically controlled dynamic braking

Max. permissible brake torque	16 600 Nm [12 240 lb.ft]
Pressure to obtain max. permissible brake torque	120 bar [1 740 PSI]
Volume required for braking	22 cm ³ [1,34 cu.in]
Mini. irrigation flow rate for dynamic braking	4 L/min [1,06 GPM]

Hydraulically controlled parking brake

Parking brake torque (new brakes)	9 580 Nm [7 070 lb.ft]
Parking brake torque (after 500 dynamic braking)	7 660 Nm [5 650 lb.ft]
Parking brake torque mini. requiring renovation	6 830 Nm [5 040 lb.ft]
Max. release brake pressure	30 bar [435 PSI]
Volume for brake release	86 cm ³ [5,25 cu.in]
Inlet conditions for brake release in towing (Flow rate of 2 L/min)	14 bar [203 PSI]
Emergency dynamical braking torque at 0 bar to the case	8 000 Nm [5 900 lb.ft]
Max. energy dissipation	890 kJ

Indicative values coming from fly-wheel test bench. Braking performance must be performed on machine by the manufacturer.



Brake release pressure vented.



Do not use both dynamic and parking brake simultaneously.



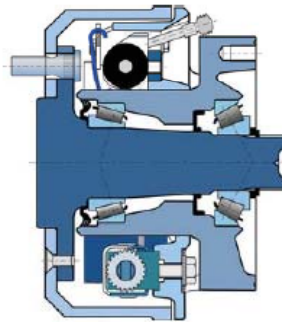
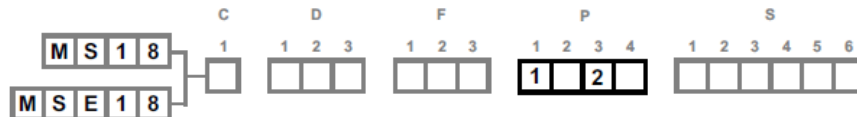
The use of certain oils, can not offer the characteristics ones above. Consult your Poclain Hydraulics sales engineer.



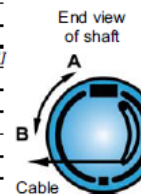
Drum brake (350 x 60 or 432 x 102)

Diameter of brake pads : Ø 350 [13.77 dia.] or Ø 432 [17 dia.]

Width of friction surface : 60 [2.36] or 102 [4]



Brake pads	350 x 60		432 x 102	
Asbestos free material	BERAL 1109 or JURID 505		BERAL 1109 or JURID 505	
Compensation for wear	Automatic		Automatic	
Hydraulically controlled dynamic braking				
Max. permissible continuous brake torque	6 600 N.m [4 868 lb.ft]		16 200 N.m [11 948 lb.ft]	
Pressure to obtain max. permissible continuous brake torque	70 bar [1 015 PSI]		71 bar [1 030 PSI]	
Max. permissible brake torque	11 000 N.m [8 113 lb.ft]		27 000 N.m [19 914 lb.ft]	
Pressure to obtain max. permissible brake torque	120 bar [1 740 PSI]		120 bar [1 740 PSI]	
Fluid				
Mineral	R	Yes	K	Yes
DOT 3/DOT4/SAE J1703	S	Yes	L	Yes
Max. volume required to bring pads into contact	8,8 cm ³ [0,54 cu.in]		10,2 cm ³ [0,62 cu.in]	
Mechanically controlled parking brake				
Max. braking torque	11 000 N.m [8 113 lb.ft]		27 000 N.m [19 914 lb.ft]	
Max permissible force on the cable	2 900 N [652 lb.f]		5 700 N [1 281 lb.f]	
Force required to bring pads into contact	35 N [8 lb.f]		37 N [8 lb.f]	
Stroke required to bring pads into contact	A	8 mm [0,31 "]	17 mm [0,67 "]	
	B	8 mm [0,31 "]	15 mm [0,59 "]	
Max. stroke before automatic brake adjustment	A	50 mm [1,97 "]	19 mm [0,75 "]	
	B	50 mm [1,97 "]	19 mm [0,75 "]	



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



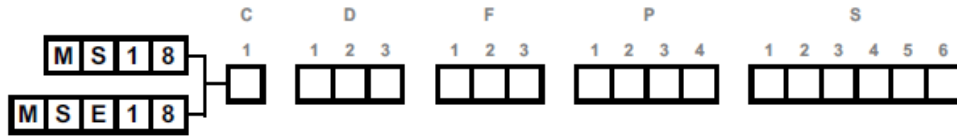
See also 'Wheel motor' section (thumbnail opposite)



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.

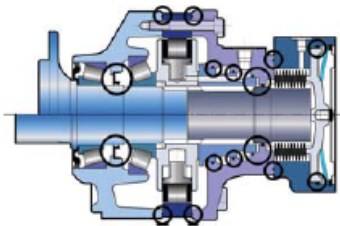
OPTIONS



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

1 - Fluorinated elastomer seals

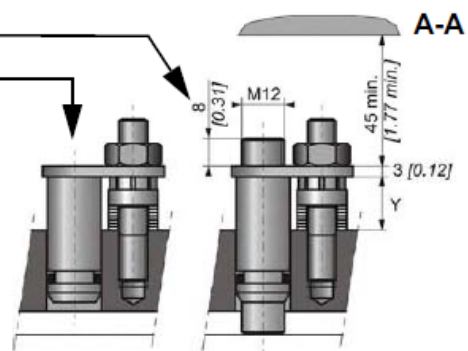
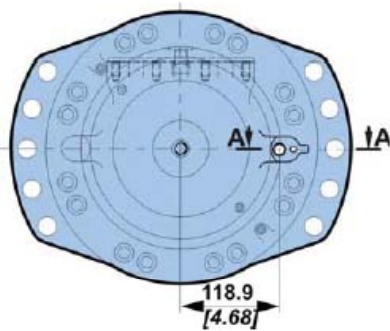
Nitrile seals marked in the figure below replaced by fluorinated elastomer seals.



Consult your Poclair 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= 17.6
Standard number of pulses per revolution= 60



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



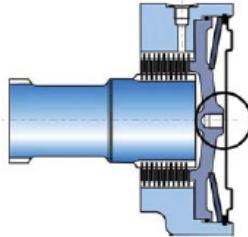
To install the sensor, see the "Installation guide" brochure No. 801478197L.



OPTIONS

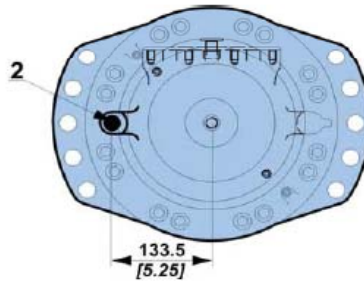
3 - Brake environmental cover without plug

No plug or hole in the cover.
(see figure opposite)



5 - Drainage

Additional drain in the cover.



6 - Industrial support

Reduction of around 50% from the rated value in the bearings' preload value.

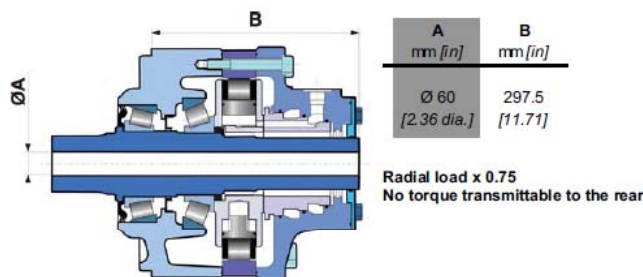


For a precise calculation, consult your Poclain Hydraulics application engineer.

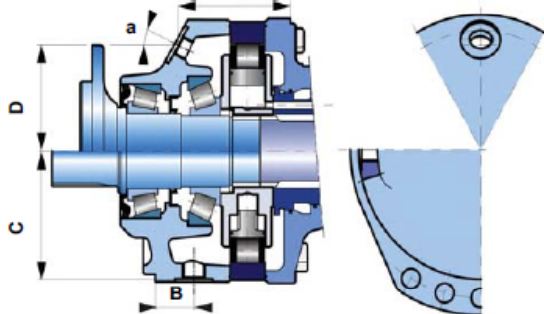
7 - Diamond™

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.

A - Hollow shaft



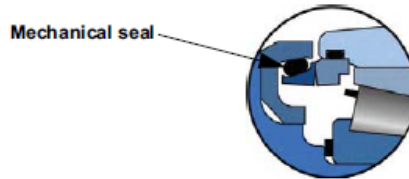
B - Drain on the bearing support



		B	C	D	F	a
		mm [in]	mm [in]	mm [in]	mm [in]	
Shaft motor	M16 x 1.5	34,0 [1,34]	100 [3,94]			
Wheel motor	M22 x 1.5			130,5 [5,14]	135 [5,31]	36°
Short wheel motor				123 [4,84]	121 [4,76]	25°

C - Abrasive environments (mechanical seal)

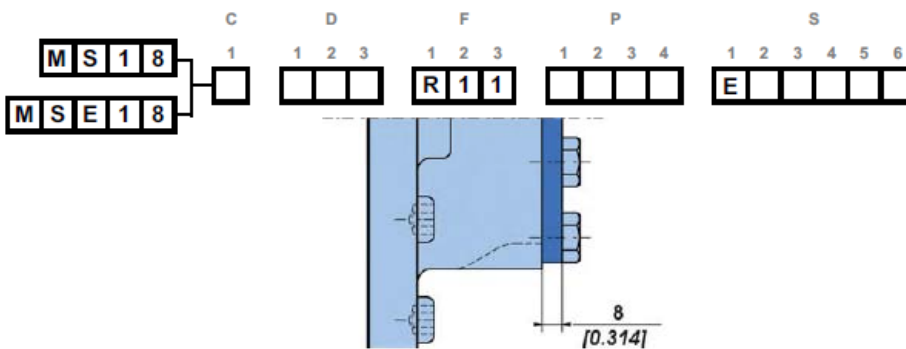
Some environments can be very harmful. The mirror seal gives reinforced motor sealing.



Consult your Poclain Hydraulics sales engineer.

E - Reinforced sealing

Requires reinforced seals and, for an unbraked motor, a rear reinforced plate (R18 - 8 [0.314]thick, instead of 4 [0.157]).



G - Special wheel rim mounting

Enables certain combinations different from the standard mountings defined on pages 10.



Consult your Poclain Hydraulics sales engineer.



H - High efficiency

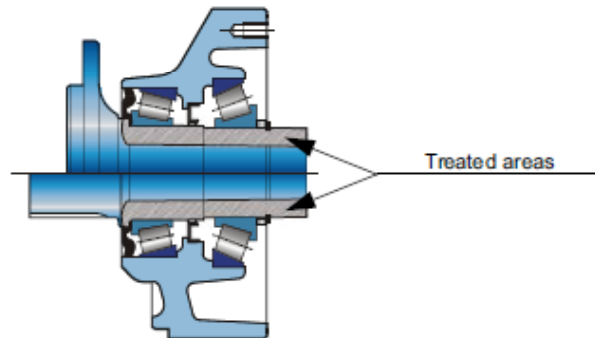
Reinforced piston sealing to improve volumetric efficiency.



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

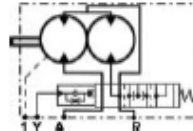
Under certain conditions, an increase in the maximum speed of 30% above the values indicated in the table on page 2 is possible.



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

T - Soft Shift™

Progressive displacement change (cushioned slide-valve)



Consult your Poclain Hydraulics sales engineer.