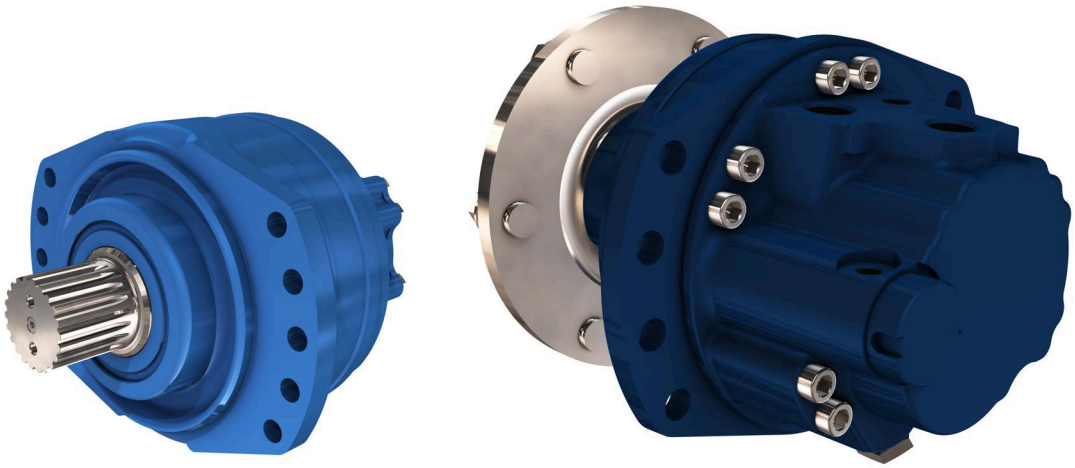
MS08 - MSE08

HYDRAULIC MOTORS



TECHNICAL CATALOG

POCLAIN Hydraulics

INTRODUCTION

Given their optimized and modular design capable of delivering high performance, motors from the MS Classic range have established themselves as a benchmark on the hydraulic motor market.

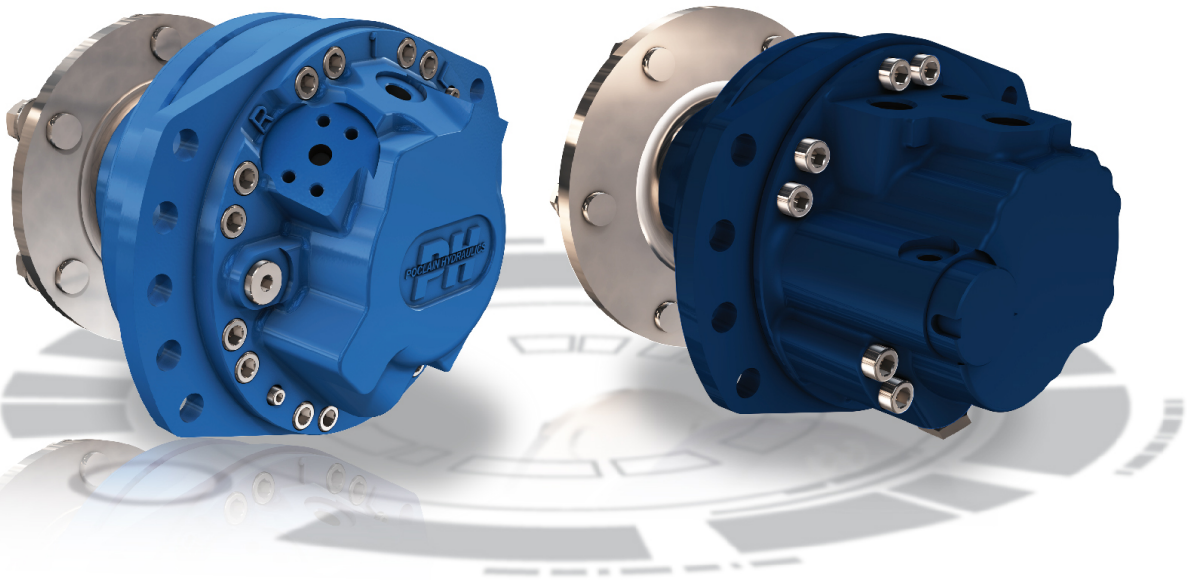
MS Classic range can be characterize by:

- **Compacity**
- **Optimized cost**
- **Power density**

The MS HighFlow™ motor range has all the qualities that have made the MS Classic range such a success: they are modular and robust, offering performance advantages (speed and power) at the same time.

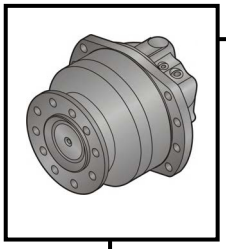
MS HighFlow™ motor range is different by:

- **Integrated exchange valve**
- **New ports geometry**
- **New valving**

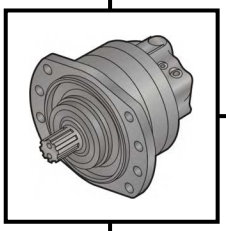


CONTENT

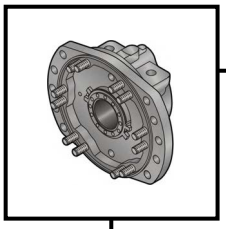
MODULARITY 6
MODEL CODE 8



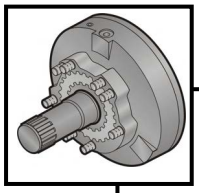
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Dimensions for Classic (1110) 2-displacement motor 12
Dimensions for Classic (1110) Twin-Lock™ 12
Dimensions for Standard (U310) 1-displacement motor 13
Dimensions for HighFlow™ (1110) 1-displacement motor 14
Dimensions for HighFlow™ (1110) 2-displacement motor 14
Dimensions for HighFlow™ (Y610) 2-displacement motor 15
Bearing support for Classic and HighFlow™ motor 16
Load curves for Classic and HighFlow™ motor 17
Bearing support for Classic and HighFlow™ motor (continued) 18



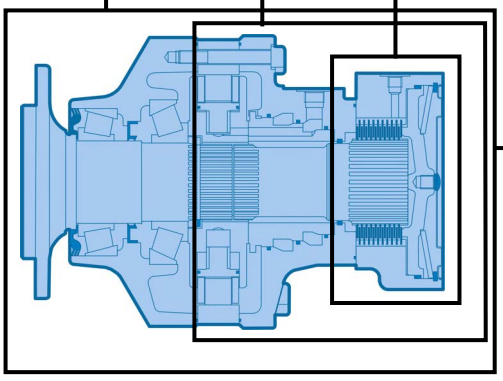
SHAFT MOTOR 20
Dimensions for Classic (2A50) 1-displacement motor 20
Dimensions for Classic (2A50) 2-displacement motor 20
Dimensions for HighFlow™ (2A50) 1-displacement motor 21
Dimensions for HighFlow™ (2A50) 2-displacement motor 21
Bearing support for Classic and HighFlow™ motor 22



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Dimensions for 1-displacement valving 24
Cylinder block splines 24
Dimensions for other valving systems 25
Exchange 27
Chassis mountings 27
Hydraulic connections 28
Efficiency for Classic and HighFlow™ motor 29

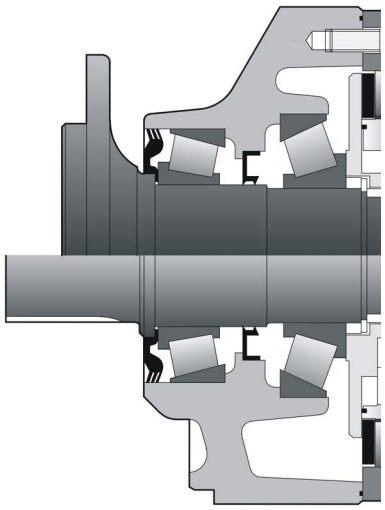


BRAKES 30
Rear brake 30
S08™ Service brake 31



OPTIONS 32

CHARAC



MS motor working pressure	**450 bar *[6 526 PSI]***
MSE motor working pressure	**400 bar *[5 801 PSI]***

Motor inertia

MS08-MSE08 HighFlow™

Max.power		
	1C motor	**41 kW**
	2C motor, 1st displacement	**41 kW**
	2C motor, 2nd displacement	**27 kW**

		C	❶ cm³/tr *[cu.in/rev.]*	❷ cm³/tr *[cu.in/rev.]*	Motor HighFlow™ 1C Max. speed * ❶ tr/min*[RPM]*	Motor HighFlow™ 2C Max. speed * ❶ tr/min*[RPM]*	❷ tr/min*[RPM]*
Cams with equal lobes	MS08	**6**	467 *[28,5]*	234 *[14,3]*	450	420	450
		8	627 *[38,2]*	314 *[19,2]*	340	330	350
		9	702 *[42,8]*	351 *[21,4]*	310	310	330
		0	780 *[47,6]*	390 *[23,8]*	280	260	280
		1	857 *[52,3]*	429 *[26,2]*	250	235	260
		2	934 *[57,0]*	467 *[28,5]*	230	220	240
	MSE08	**0**	1 043 *[63,6]*	522 *[31,8]*	210	190	220
		1	1 146 *[69,9]*	573 *[34,9]*	185	175	200
		2	1 248 *[76,1]*	624 *[38,1]*	170	160	180
Cams with unequal lobes	MS08	**Q**	624 *[38,1]*	390 *[23,8]* / 233 *[14,2]*	294	328	320
		D	700 *[42,7]*	467 *[28,5]* / 233 *[14,2]*	236	276	259
		A	780 *[47,6]*	467 *[28,5]* / 314 *[19,2]*	235	271	259
	MSE08	**Q**	834 *[50,9]*	522 *[31,8]* / 312 *[19,0]*	217	243	235
		D	936 *[57,1]*	624 *[38,1]* / 312 *[19,0]*	171	205	186
		A	1 043 *[63,6]*	624 *[38,1]* / 419 *[25,6]*	170	200	186

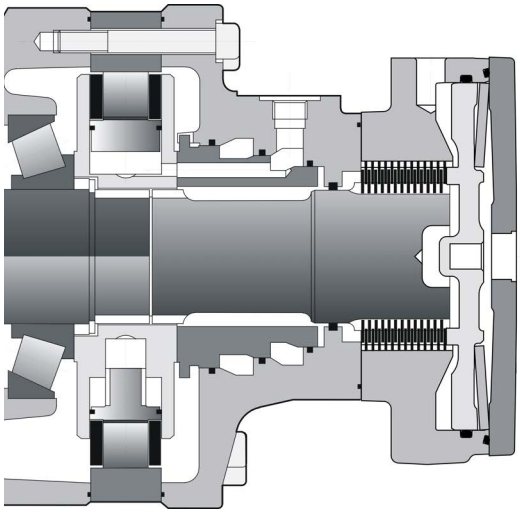
* Based on nominal no-load Δp of 20 bar *[290 PSI]*.

Max. power obtained at max speed, with Peek bushings.

❶ **First displacement**

❷ **Second displacement**

TERISTICS



= 0.05 kg.m²

MS motor working pressure	**450 bar *[6 526 PSI]***
MSE motor working pressure	**400 bar *[5 801 PSI]***

MS08-MSE08 Classic

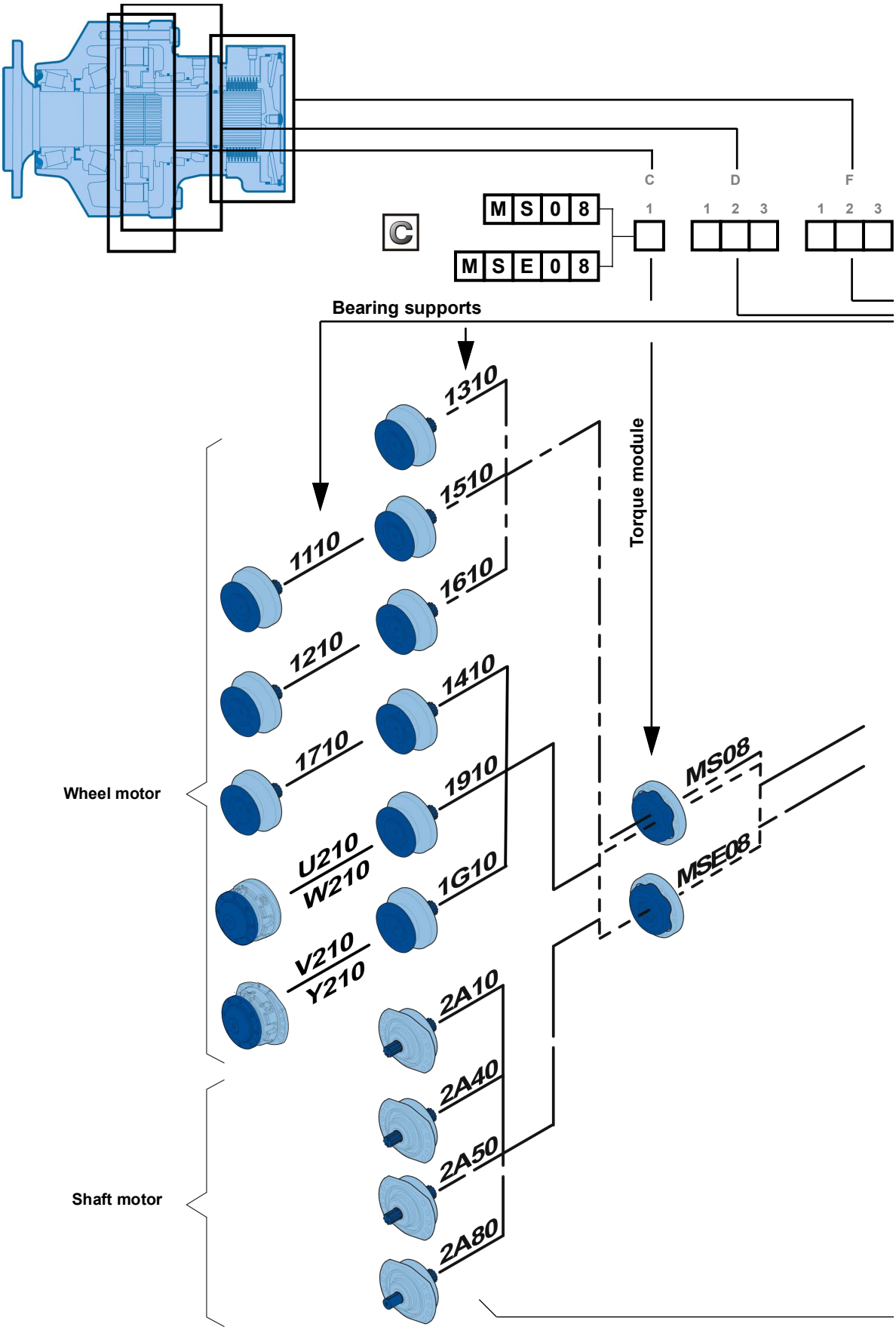
Max.power		
	1C motor	**41 kW**
	2C motor preferred	**27 kW**
	2C motor non-preferred	**21 kW**

		C	❶ cm³/tr *[cu.in/rev.]*	❷ cm³/tr *[cu.in/rev.]*	Classic motor 1C Max. speed ❶ tr/min*[RPM]*	Classic motor 2C Max. speed ❶ tr/min*[RPM]*	❷ tr/min*[RPM]*
Cams with equal lobes	MS08	6	467 *[28,5]*	234 *[14,3]*	255	235	250
		8	627 *[38,2]*	314 *[19,2]*	200	172	185
		9	702 *[42,8]*	351 *[21,4]*	180	155	165
		0	780 *[47,6]*	390 *[23,8]*	160	130	150
		1	857 *[52,3]*	429 *[26,2]*	145	120	125
		2	934 *[57,0]*	467 *[28,5]*	135	110	115
	MSE08	0	1 043 *[63,6]*	522 *[31,8]*	125	100	110
		1	1 146 *[69,9]*	573 *[34,9]*	110	90	95
		2	1 248 *[76,1]*	624 *[38,1]*	100	80	85
Cams with unequal lobes	MS08	Q	624 *[38,1]*	390 *[23,8]* / 233 *[14,2]*		140	250
		D	700 *[42,7]*	467 *[28,5]* / 233 *[14,2]*		110	115
		A	780 *[47,6]*	467 *[28,5]* / 314 *[19,2]*		110	110
	MSE08	Q	834 *[50,9]*	522 *[31,8]* / 312 *[19,0]*		105	110
		D	936 *[57,1]*	624 *[38,1]* / 312 *[19,0]*		80	85
		A	1 043 *[63,6]*	624 *[38,1]* / 419 *[25,6]*		80	85

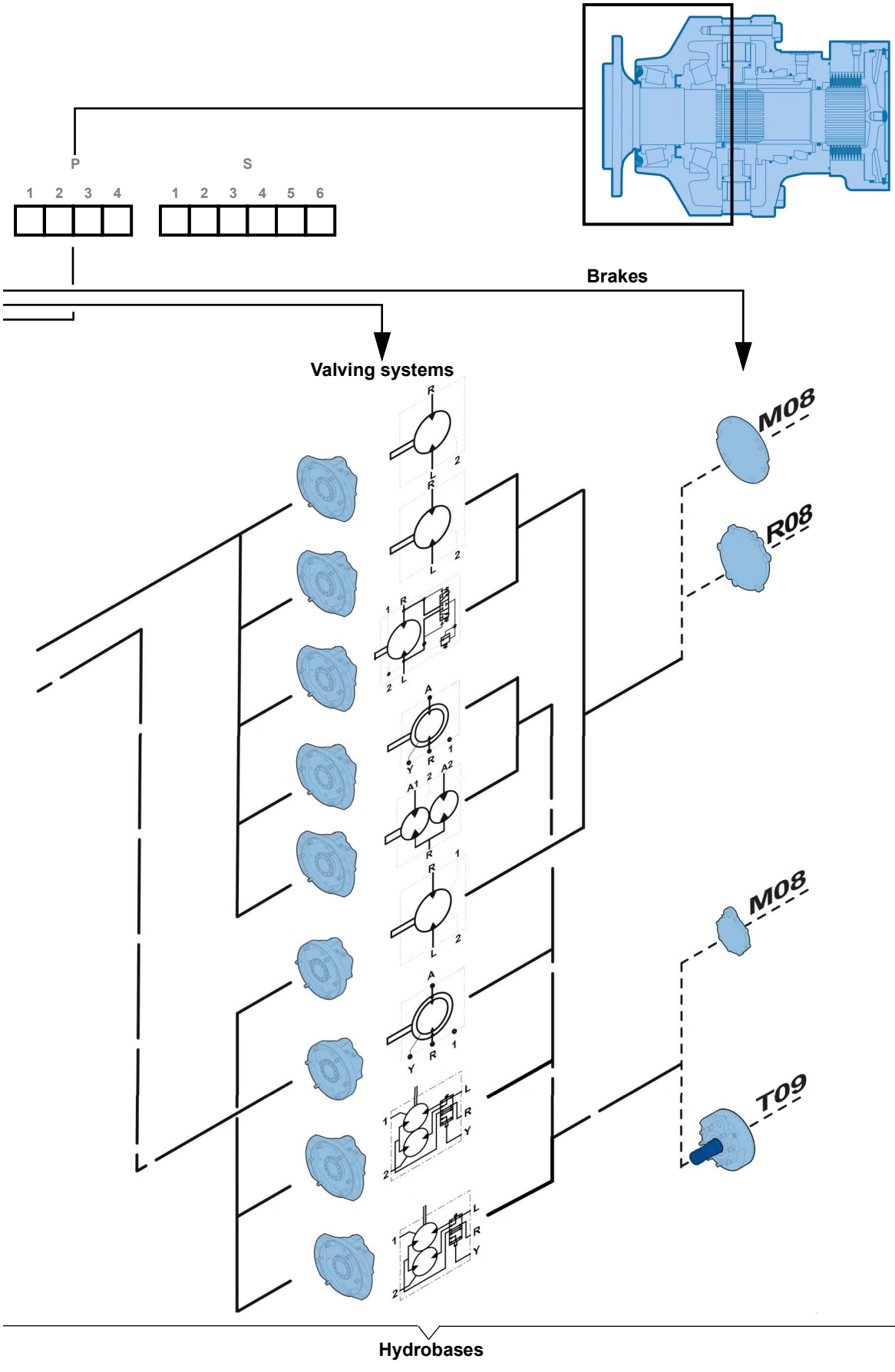
❶ **First displacement**

❷ **Second displacement**

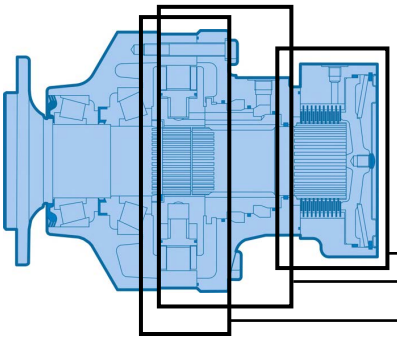
MODUL


C
D
F
1
1 2 3
1 2 3
M S 0 8
M S E 0 8
C
Bearing supports
Torque module
1310
1510
1610
1410
1910
1G10
1110
1210
1710
U210
W210
V210
Y210
2A10
2A40
2A50
2A80
MS08
MSE08
Wheel motor
Shaft motor

ARITY


P
S
1 2 3 4
1 2 3 4 5 6
Brakes
Valving systems
M08
R08
M08
T09
Hydrobases

MODEL



C D F

M S 0 8 — 1 — 1 2 3 — 1 2 3

M S E 0 8

C1

Came type

		1 displacement	2 displacements	
		cm³/tr *[cu.in/rev.]*		
Cams with equal lobes	MS08	467 *[28.5]*	234 *[14.3]*	6
		627 *[38.2]*	314 *[19.2]*	8
		702 *[42.8]*	351 *[21.4]*	9
		780 *[47.6]*	390 *[23.8]*	0
		857 *[52.3]*	429 *[26.2]*	1
		934 *[57.0]*	467 *[28.5]*	2
	MSE08	1 043 *[63.6]*	522 *[31.8]*	0
		1 146 *[69.9]*	573 *[34.9]*	1
		1 248 *[76.1]*	624 *[38.1]*	2
Cams with unequal lobes	MS08	624 *[38.1]*	390 *[23.8]* / 233 *[14.2]*	Q
		700 *[42.7]*	467 *[28.5]* / 233 *[14.2]*	D
		780 *[47.6]*	467 *[28.5]* / 314 *[19.2]*	A
	MSE08	834 *[50.9]*	522 *[31.8]* / 312 *[19.0]*	Q
		936 *[57.1]*	624 *[38.1]* / 312 *[19.0]*	D
		1 043 *[63.6]*	624 *[38.1]* / 419 *[25.6]*	A

D1

Valving type

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

D2

Valving cover

		1 Displacement	2 Displacement	Exchange	Twin-Lock™
Classic motor	Without mounting	1	4	D	
	Lug fixing	2	5	E	
HighFlow™ motor	Without mounting	B	L	-	
	Lug fixing	C	N	-	

D3

Connection type

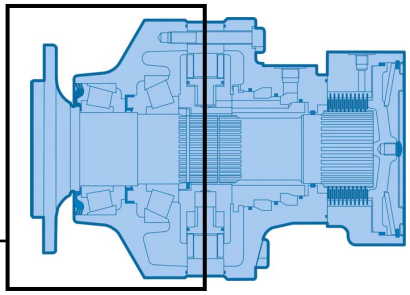
ISO 6162 Flanges **ISO 9974-1** connections	DN13	1
ISO 6162 Flanges **ISO 1179-1** connections	DN13	2
ISO 1179-1 connections	G3/4	3
ISO 9974-1 connections	M22 x 1.5	4
ISO 9974-1 connections	M27 x 2	5
ISO 6149-1 connections	M22 x 1.5	8
ISO 11 926-1 connections	1" 1/16 - 12 UNF	A

F1-F3

Rear brake

One-piece valving cover single displacement			M 0 8
Without brake (reinforced plate)			R 0 8
Brake	Parking brake	Screwed enviromental cover	T 0 9

CODE



P S

1 2 3 4 | 1 2 3 4 5 6

0 | | | | | | | | | |

P1

			Front unit	
0			Without bearing support	
1			Without mounting	
2			Lug mounting	
U	Brake	S08™	valving cover fixation	single control command
V			chassis fixation	
W			valving cover fixation	double control command
Y			chassis fixation	

P2

Bearing support	
Without shaft	0
6 x Ø20 on Ø205	1
8 x Ø22 on Ø203.2	2
6 x Ø20 on Ø205	3
10 x Ø18 on Ø225	4
6 x Ø18 on Ø152.4	5
12 x M12 on Ø205	6
8 x Ø22 on Ø275	7
12 x Ø14 on Ø165	9
Support without drum brake	G
For male shaft bearing support	A

P3

Shaft type	
Without studs	1
With studs + nuts	2
With studs	3
M threaded holes	4

Male shafts	
NF E22-141 splines	1
Cylindrical with key	4
DIN 5480 splines	5
ANSI B92.1 - 1996 splines	8

S1-S6

Options	
Without option	0
Fluorinated elastomer seals compatible with C and D fluids	1
T4 speed sensor (without rotation direction)	2
Brake environmental cover without plug	3
Drainage (additional drain in the cover)	5
Industrial bearing support	6
Diamond™	7
Predisposition for speed sensor	8
Hollow shaft	A
Drain on the bearing support	B
Abrasive environment (mechanical seal)	C
Special paint or no paint	D
Reinforced sealing	E
Special wheel rim mounting	G
High efficiency	H
Surface heat treatment of the shaft	J
High speed	M
TD speed sensor (two phase shifted frequencies)	Q
TR speed sensor (digital rotation direction)	S

Methodology :

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

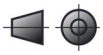
This document includes important comments concerning safety as well as the installation guide that must be read before any installation (https://poclain.com/resources). Important comments are indicated in the following way:

	**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.**
	**Weight of component without oil.**
	**Volume of oil.**
	**Units.**
	**Tightening torque.**
	**Screws.**
	**Information intended for Poclain-Hydraulics personnel.**

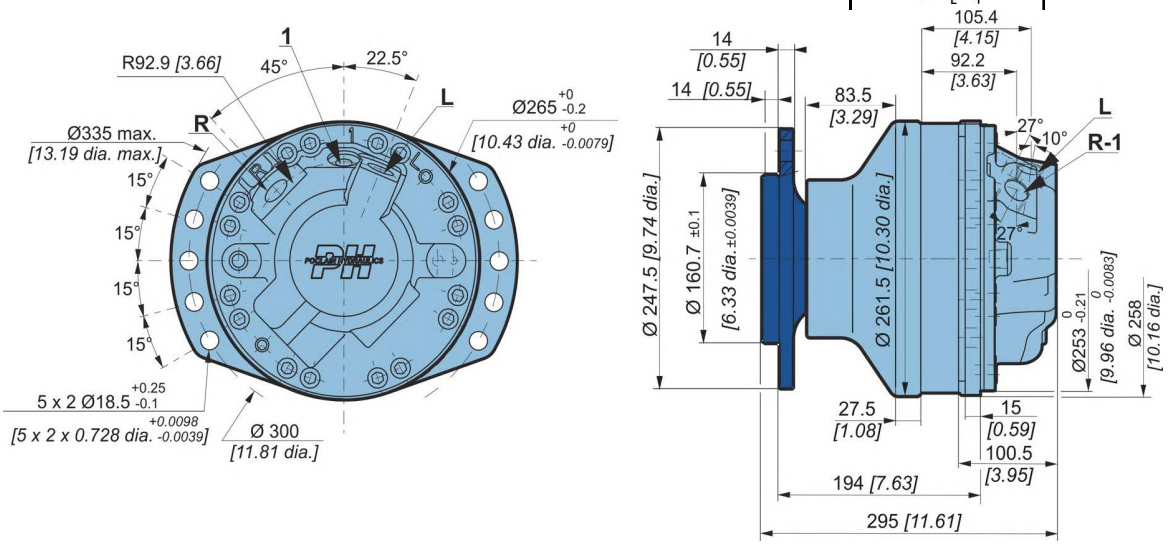
The views in this document are created using metric standards.
The dimensional data is given in mm and in inches (inches are given in brackets in italics).



WHEEL MOTOR CLASSIC

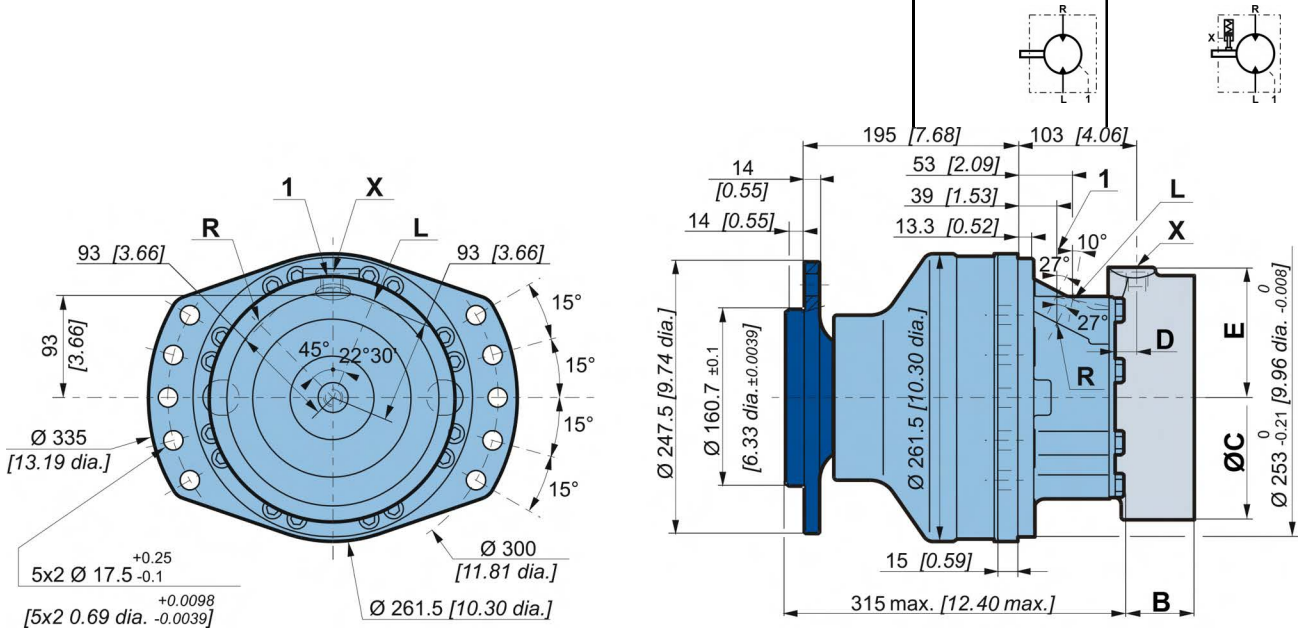
Dimensions for Classic (1110) 1-displacement motor

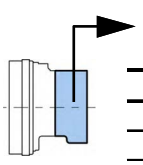
	60 kg *[132 lb]*	79 kg *[174 lb]*
	1.50 L *[90 cu.in]*	1.00 L *[60 cu.in]*



Dimensions for Classic (1110) 1-displacement motor

	60 kg *[132 lb]*	79 kg *[174 lb]*
	1.50 L *[90 cu.in]*	1.00 L *[60 cu.in]*





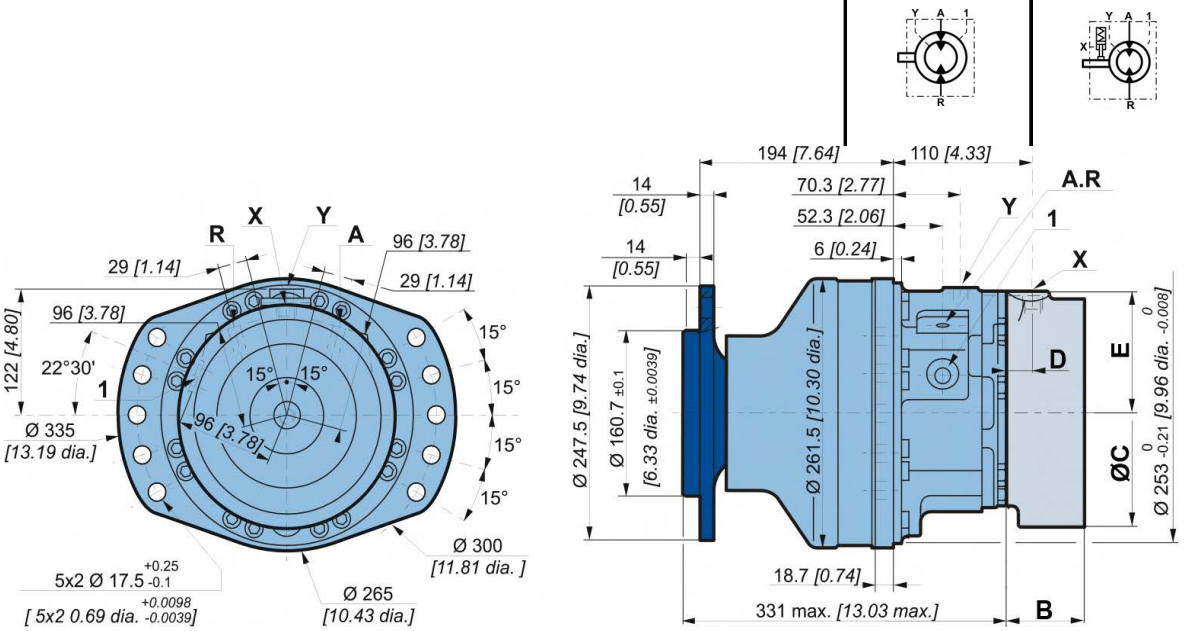
C	T 0 9
B	87.10 *[3.43]*
C	Ø255 *[10.02 dia.]*
D	19.0 *[0.75]*
E	115.0 *[4.53]*

Also see "Brake" section (thumbnail opposite).

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

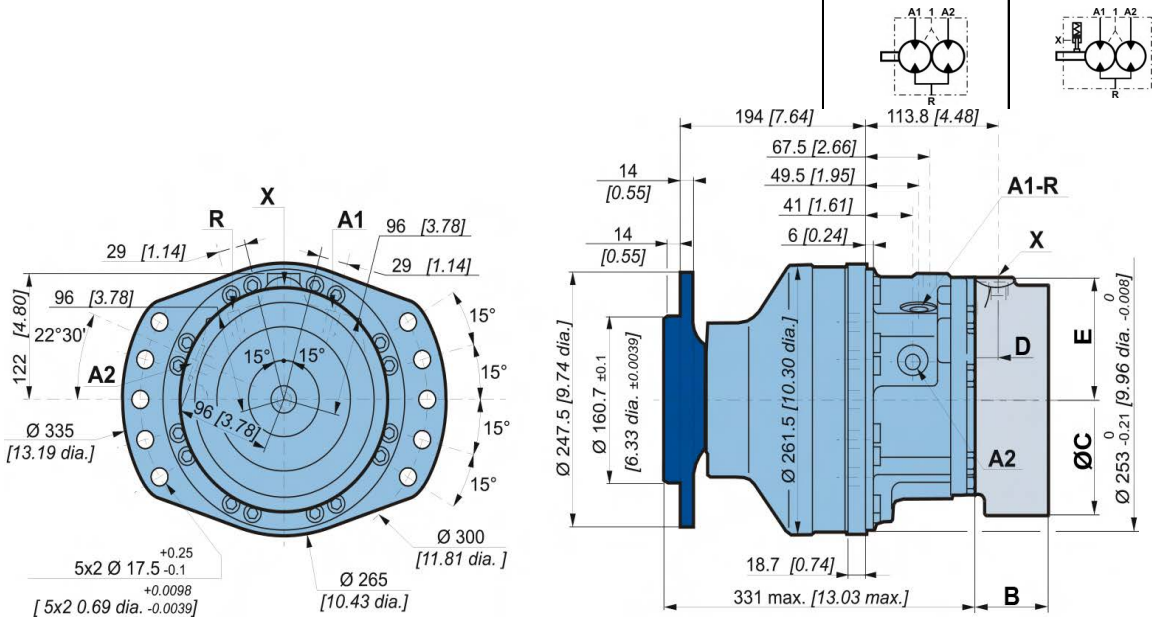
Dimensions for Classic (1110) 2-displacement motor

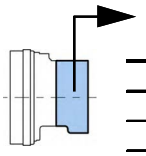
	65 kg *[143 lb]*	84 kg *[185 lb]*
	1.50 L *[90 cu.in]*	1.00 L *[60 cu.in]*



Dimensions for Classic (1110) Twin-Lock™

	65 kg *[143 lb]*	84 kg *[185 lb]*
	1.50 L *[90 cu.in]*	1.00 L *[60 cu.in]*





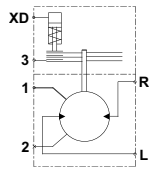
C	T 0 9
B	87.10 *[3.43]*
C	Ø255 *[10.02 dia.]*
D	19.0 *[0.75]*
E	115.0 *[4.53]*

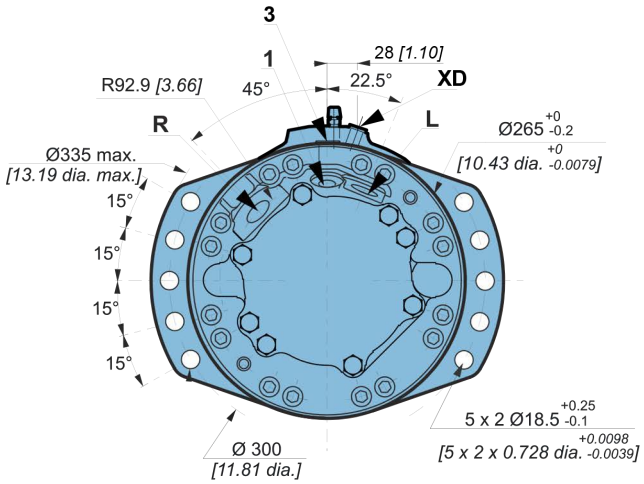
Also see “Brake” section (thumbnail opposite).

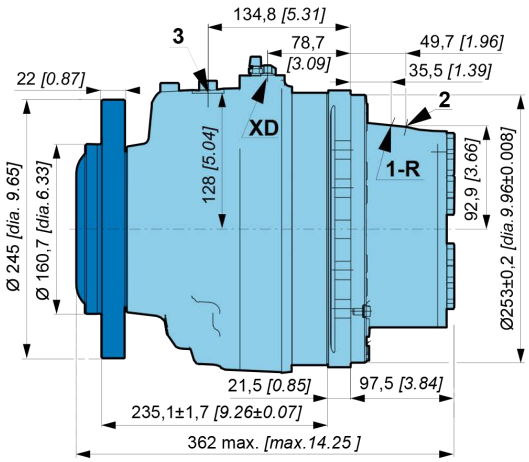
Also see 'Valving systems and hydrobases' section (thumbnail opposite).

Dimensions for Standard (U310) 1-displacement motor

	75 kg *[165 lb]*
	1.10 L *[66 cu.in]*



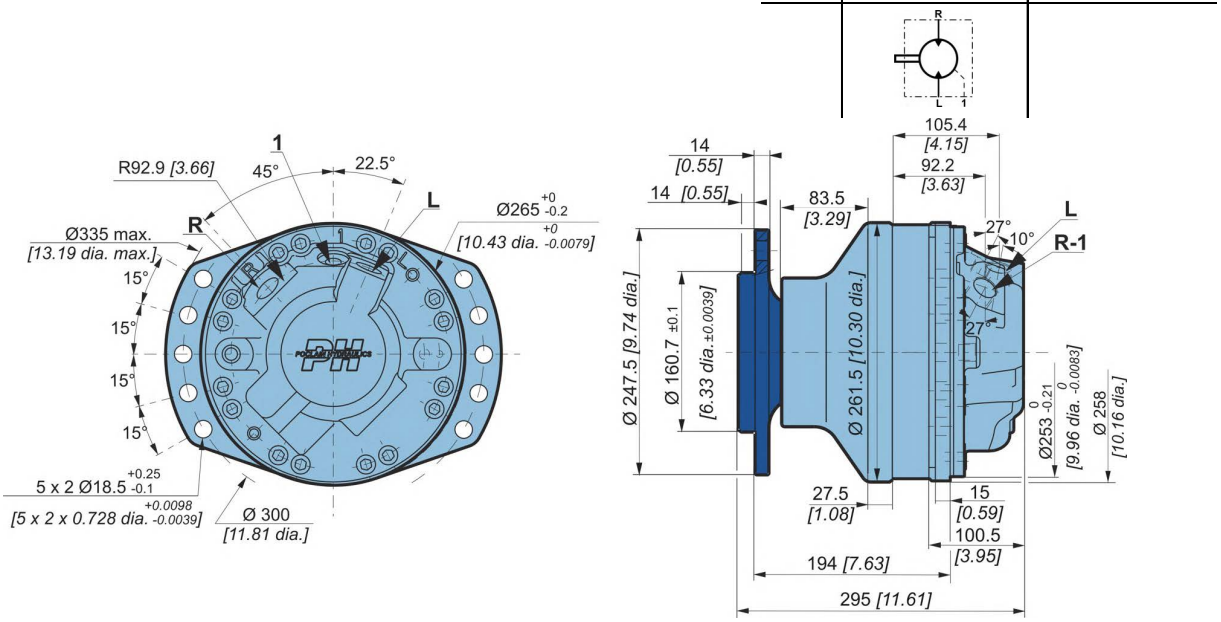




WHEEL MOTOR HIGHFLOW™

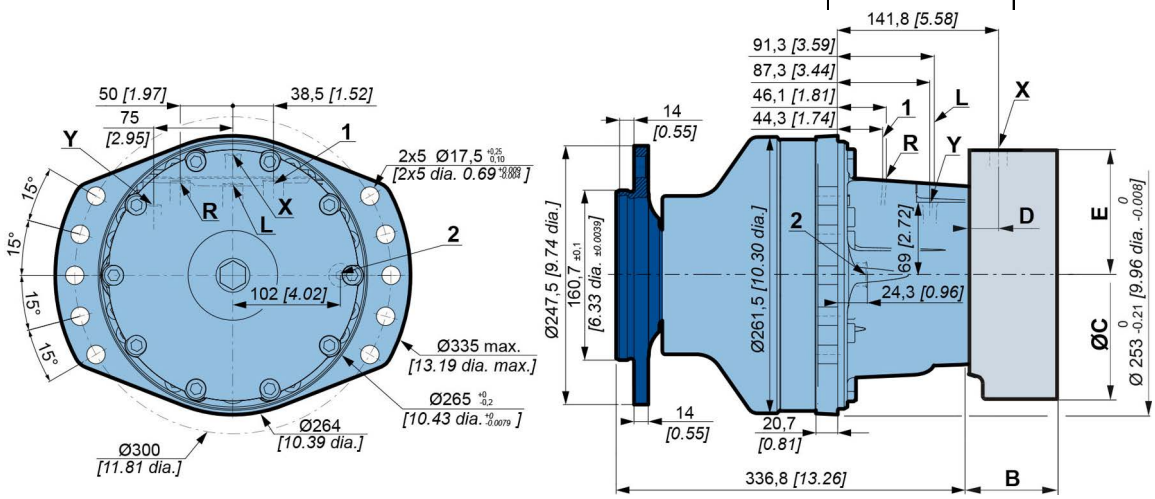
Dimensions for HighFlow™ (1110) 1-displacement motor

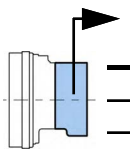
	60 kg *[132 lb]*	79 kg *[174 lb]*
	1.50 L *[90 cu.in]*	1.00 L *[60 cu.in]*



Dimensions for HighFlow™ (1110) 2-displacement motor

	60 kg *[132 lb]*	79 kg *[174 lb]*
	1.50 L *[90 cu.in]*	1.00 L *[60 cu.in]*





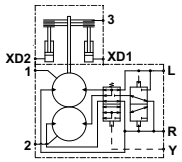
C	T09
B	88,2 *[3,47]*
C	Ø238 *[9,37 dia.]*
D	21,0 *[0,83]*
E	114,0 *[4,49]*

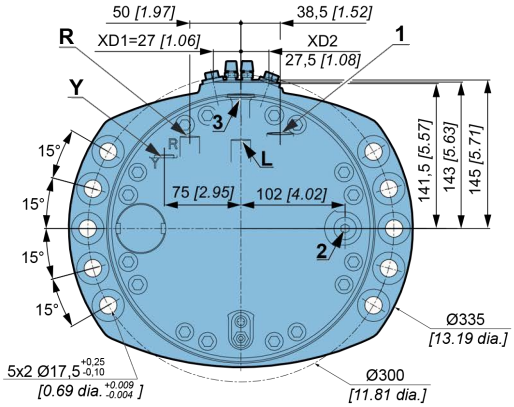
Also see “Brake” section (thumbnail opposite).

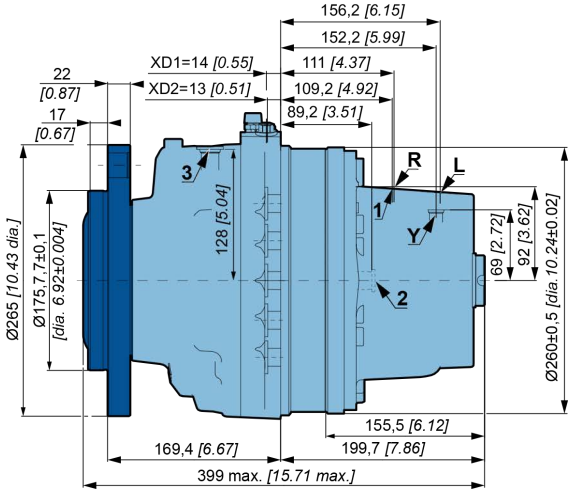
Also see 'Valving systems and hydrobases' section (thumbnail opposite).

Dimensions for HighFlow™ (Y610) 2-displacement motor

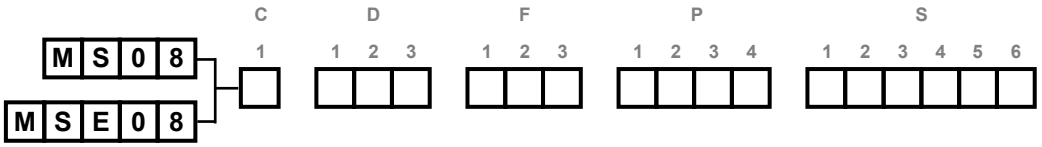
	75 kg *[165 lb]*
	1.10 L *[66 cu.in]*

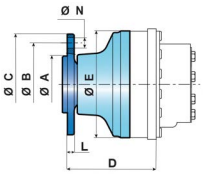
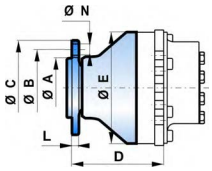






Bearing support for Classic and HighFlow™ motor



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 1 1 0	Ø 160.7 *[6.33 dia.]*	Ø 205 *[8.07 dia.]*	Ø 245 *[9.65 dia.]*	195 *[7.68]*	Ø 261.5 *[10.30 dia.]*	6 x Ø 20 *[6 x 0.79 dia.]*	M18x1.5	13.5 *[0.53]*	
1 2 1 0	Ø 150.9 *[5.94 dia.]*	Ø 203.2 *[8.00 dia.]*	Ø 238 *[9.37 dia.]*	194.1 *[7.64]*	Ø 261.5 *[10.30 dia.]*	8 x Ø 22 *[8 x 0.87 dia.]*	M20x1.5	13.5 *[0.53]*	
1 4 1 0	Ø 175.7 *[6.92 dia.]*	Ø 225 *[8.86 dia.]*	Ø 270 *[10.63 dia.]*	188.8 *[7.43]*	Ø 261.5 *[10.30 dia.]*	10 x Ø 18 *[10 x 0.71 dia.]*	M16x1.5	15 *[0.59]*	
1 3 1 0 ⊖	Ø 160.7 *[6.33 dia.]*	Ø 205 *[8.07 dia.]*	Ø 245 *[9.65 dia.]*	163 *[6.42]*	Ø 261.5 *[10.30 dia.]*	6 x Ø 20 *[6 x 0.79 dia.]*	M18x1.5	14 *[0.55]*	
1 5 1 0 ⊖	Ø 117.5 *[4.63 dia.]*	Ø 152.4 *[6.00 dia.]*	Ø 181 *[7.13 dia.]*	163 *[6.42]*	Ø 261.5 *[10.30 dia.]*	6 x Ø 18 *[6 x 0.71 dia.]*	M14x1.5	11 *[0.43]*	
1 6 1 0 ⊖	Ø 160.7 *[6.33 dia.]*	Ø 205 *[8.07 dia.]*	Ø 245 *[9.65 dia.]*	163 *[6.42]*	Ø 261.5 *[10.30 dia.]*	12 x M12	-	14.8 *[0.58]*	

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

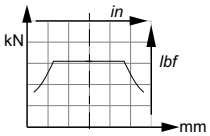
Load curves for Classic and HighFlow™ motor

Permissible radial loads

Test conditions :

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

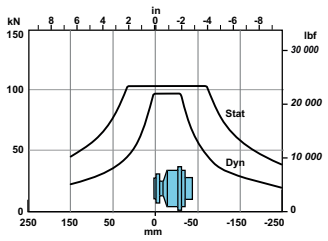
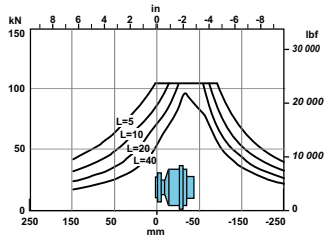
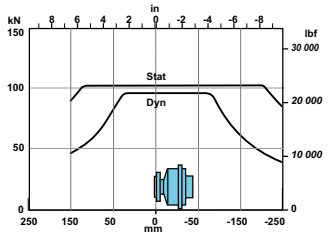
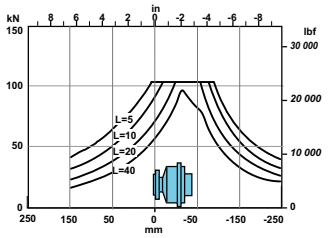
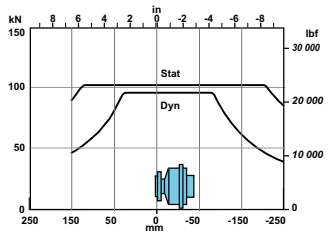
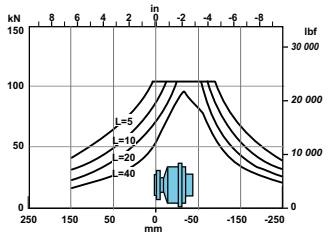
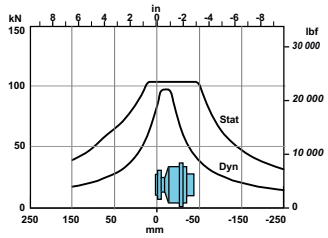
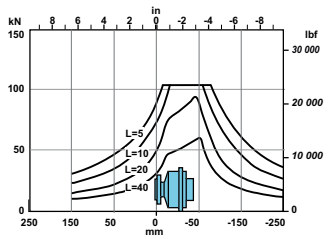
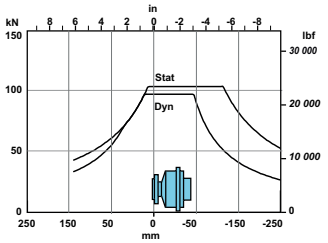
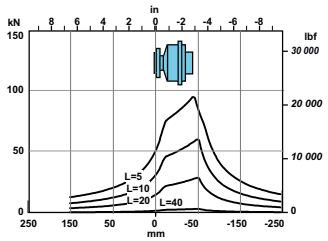
Dynamic : 0 tr/min *[0 RPM]*, code 0 displacement, without axial load at max. torque



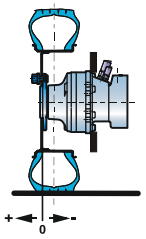
Service life of bearings

Test conditions :

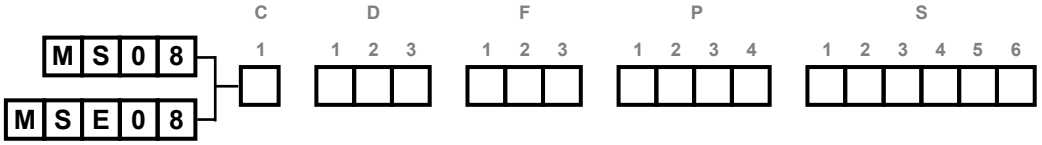
L : Millions B10 revolutions at 150 bars (average pressure), with 25 cSt fluid, code 0 displacement, without axial load.

1 1 1 0 (1 2 3 4 / P)		
1 2 1 0 (1 2 3 4 / P)		
1 4 1 0 (1 2 3 4 / P)		
1 3 1 0 / 1 6 1 0 (1 2 3 4 / P)		
1 5 1 0 (1 2 3 4 / P)		

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



Bearing support for Classic and HighFlow™ motor (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 117.5 *[4.63 dia.]*	Ø 165 *[6.50 dia.]*	Ø 186 *[7.32 dia.]*	163.2 *[6.43]*	Ø 261.5 *[10.30 dia.]*	12 x Ø 14 *[12 x 0.55 dia.]*	-	12 *[0.47]*
1 G 1 0 (1 2 3 4 P)	Ø 175.7 *[6.92 dia.]*	Ø 225 *[8.86 dia.]*	Ø 265 *[10.43 dia.]*	228.6 *[9.00]*	Ø 261.5 *[10.30 dia.]*	10 x Ø 24 *[10 x 0.94 dia.]*	M22x1.5	15 *[0.59]*
1 7 1 0 (1 2 3 4 P)	Ø 220.7 *[8.69 dia.]*	Ø 275 *[10.83 dia.]*	Ø 314 *[12.36 dia.]*	194 *[7.64]*	Ø 261.5 *[10.30 dia.]*	8 x Ø 22 *[8 x 0.87 dia.]*	M20x1.5	14 *[0.55]*
U 3 1 0 / W 3 1 0 (1 2 3 4 P)	Ø 160.7 *[6.33 dia.]*	Ø 205 *[8.07 dia.]*	Ø 245 *[9.65 dia.]*	235.0 *[9.25]*	Ø 267.0 *[10.51 dia.]*	6 x Ø 20 *[6 x 0.79 dia.]*	6 x M18x1.5	22 *[0.87]*
V 3 1 0 / Y 3 1 0 (1 2 3 4 P)	Ø 160.7 *[6.33 dia.]*	Ø 205 *[8.07 dia.]*	Ø 245 *[9.65 dia.]*	169.4 *[6.67]*	Ø 267.0 *[10.51 dia.]*	6 x Ø 20 *[6 x 0.79 dia.]*	6 x M18x1.5	22 *[0.87]*

Studs

		P mm *[in]*	C min. mm *[in]*	C max. mm *[in]*	D mm *[in]*	Class
Various studs	M14x1.5	45 *[1,77]*	5 *[0,20]*	15 *[0,57]*	16,5 *[0,65]*	**12,9**
	M18x1.5	55 *[2,17]*		18 *[0,71]*	23 *[0,91]*	
	M18x1.5	65 *[2,56]*		23 *[0,91]*		
	M20x1.5	60 *[2,36]*		21 *[0,83]*	25 *[0,98]*	
	M22x1.5	55 *[2,17]*		15 *[0,59]*	26 *[1,02]*	
	M22x1.5	80 *[3,15]*		40 *[1,57]*		
Screws	M12x1.75	-	-			**10.9**
	1/2"-20 UNF	-	-			**10.9**

See generic installation motors N°B59689D.

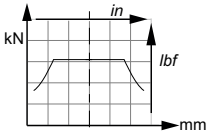
Load curves for Classic and HighFlow™ motor (continued)

Permissible radial loads

Test conditions :

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

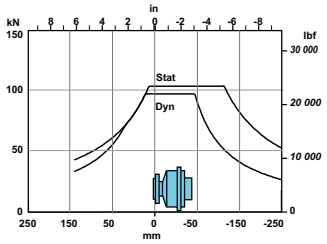
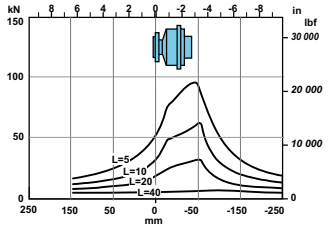
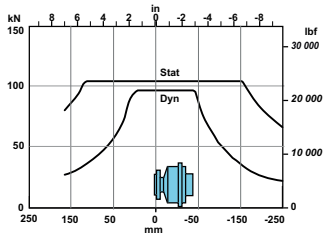
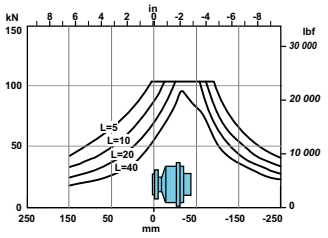
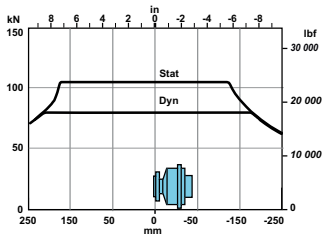
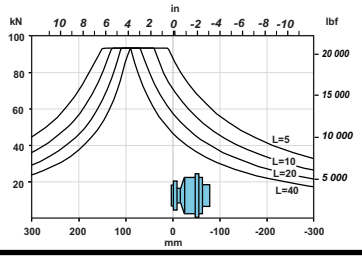
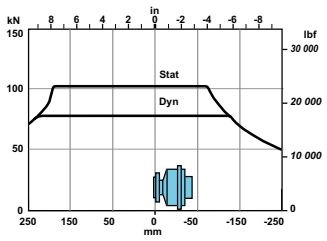
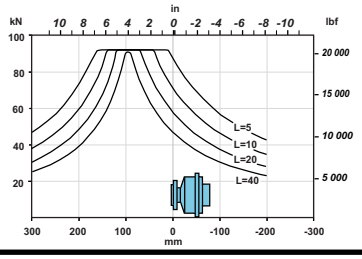
Dynamic : 0 tr/min *[0 RPM]*, code 0 displacement, without axial load at max. torque



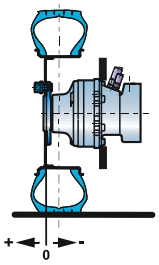
Service life of bearings

Test conditions :

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

	Permissible radial loads	Service life of bearings
1 9 1 0 1 2 3 4 P		
1 7 1 0 1 2 3 4 P		
U 3 1 0 W 3 1 0 1 2 3 4 P		
V 3 1 0 Y 3 1 0 1 2 3 4 P		

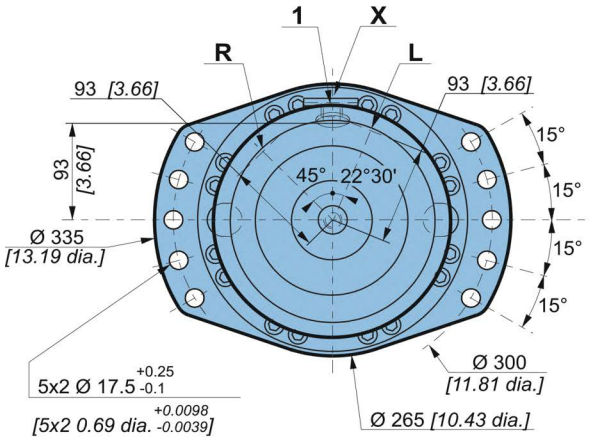
The service life of the components is influenced by the pressure.You must check that the combination of forces applied (Axial load / Radial load) is compatible with the permissible loads for the components, and that the resulting service lives of these components complies with the application's specifications.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

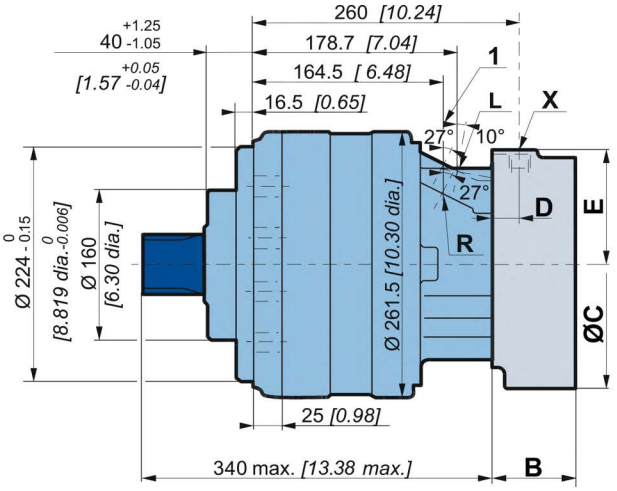


SHAFT MOTOR CLASSIC

Dimensions for Classic (2A50) 1-displacement motor

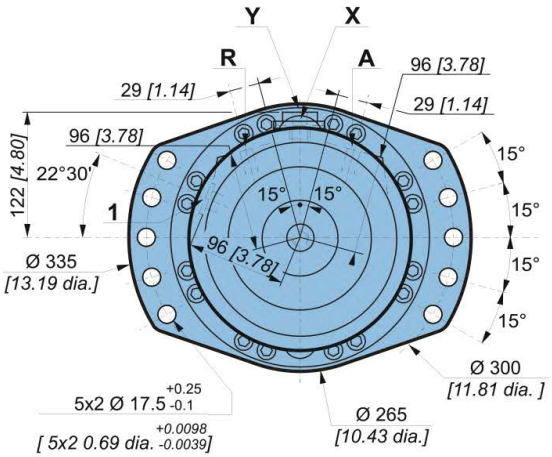
	62 kg *[136 lb]*	80 kg *[176 lb]*
	1.50 L *[90 cu.in]*	1.00 L *[60 cu.in]*

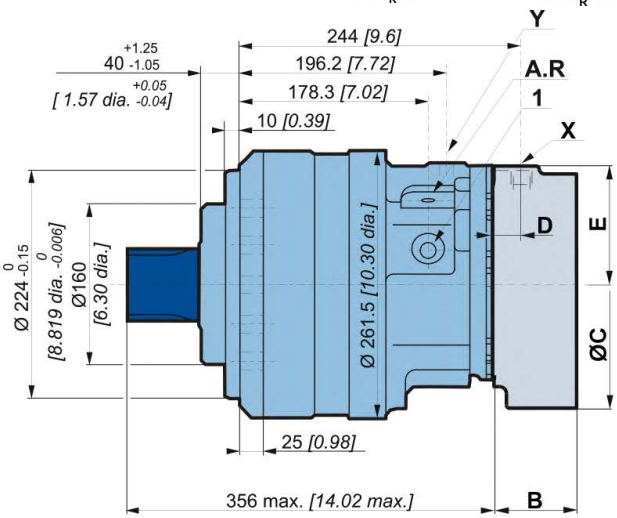


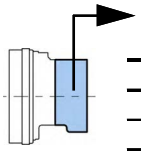


Dimensions for Classic (2A50) 2-displacement motor

	67 kg *[147 lb]*	85 kg *[187 lb]*
	1,50 L *[90 cu.in]*	1,00 L *[60 cu.in]*







C	T 0 9
B	87.10 *[3.43]*
C	Ø255 *[10.02 dia.]*
D	19.0 *[0.75]*
E	115.0 *[4.53]*

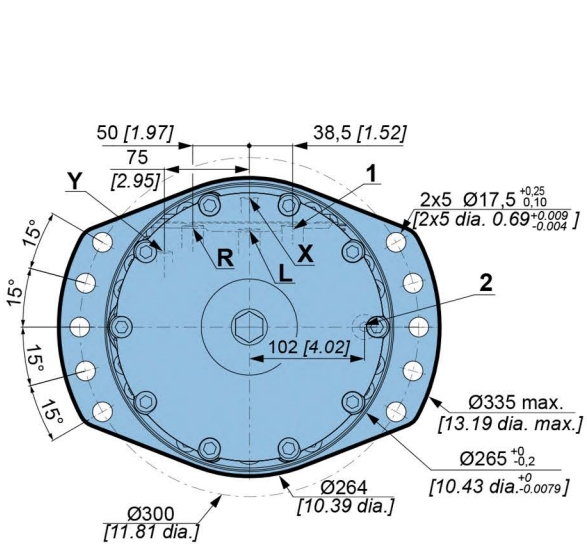
Also see "Brake" section (thumbnail opposite).

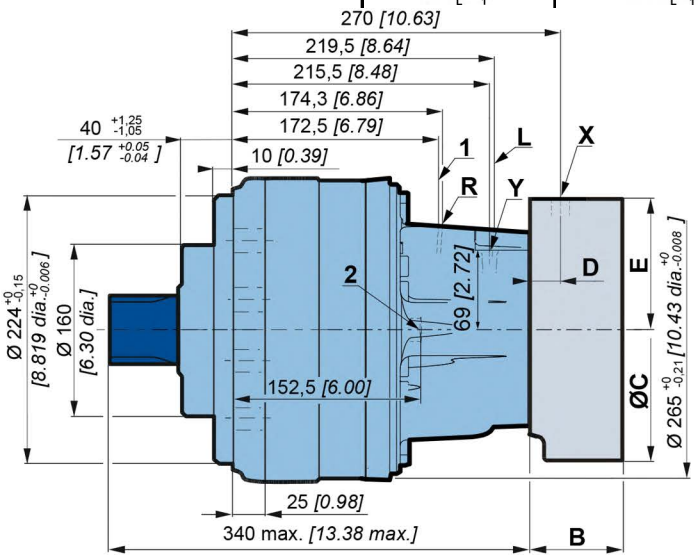
Also see 'Valving systems and hydrobases' section (thumbnail opposite).

SHAFT MOTOR HIGHFLOW™

Dimensions for HighFlow™ (2A50) 1-displacement motor

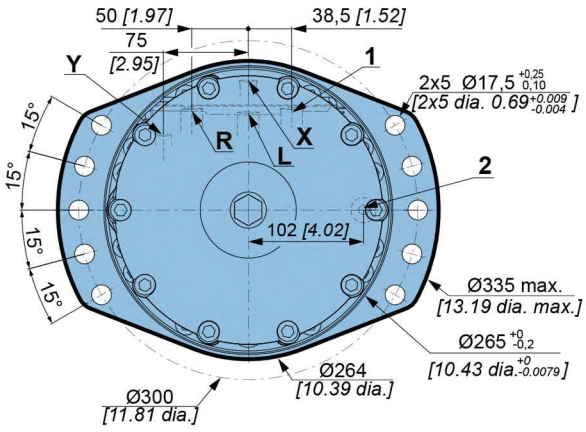
	62 kg *[136 lb]*	80 kg *[176 lb]*
	1.50 L *[90 cu.in]*	1.00 L *[60 cu*

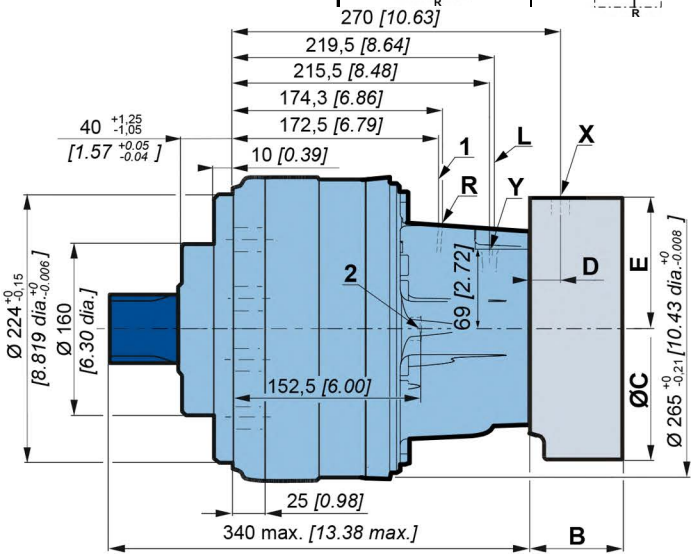


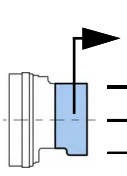


Dimensions for HighFlow™ (2A50) 2-displacement motor

	67 kg *[147 lb]*	85 kg *[187 lb]*
	1.50 L *[90 cu.in]*	1.00 L *[60 cu.in*





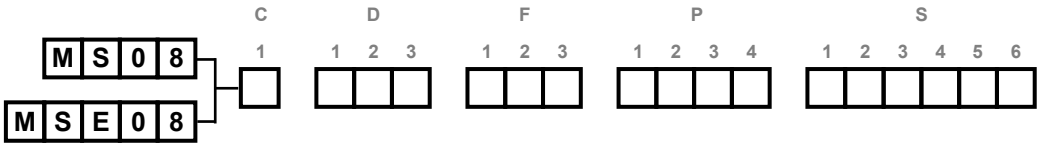


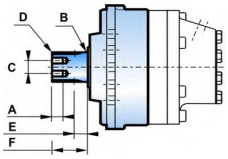
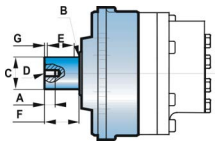
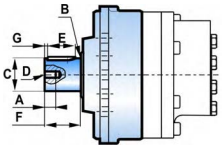
C	T09
B	88,2 *[3,47]*
C	Ø238 *[9,37 dia.]*
D	21,0 *[0,83]*
E	114,0 *[4,49]*

Also see “Brake” section (thumbnail opposite).

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

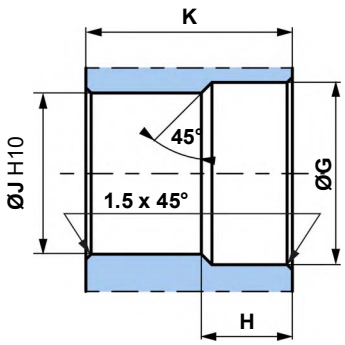
Bearing support for Classic and HighFlow™ motor



C		A	B	C	D	E	F	
2 A 1 0 (P)	**NF E22-141** splines Nominal Ø 65 *[2.56]* Module 2.5 Z 24	15 *[0.59]*	R 2.5 *[R 0.10]*	35 *[1.38]*	2 x M10	24 *[0.94]*	70 *[2.76]*	
2 A 5 0 (P)	**DIN 5480** splines Nominal Ø 70 *[2.76]* Module 3 Z 22	15 *[0.59]*	R 2.5 *[R 0.10]*	35 *[1.38]*	2 x M10	23 *[0.91]*	70 *[2.76]*	
2 A 8 0 (P)	**ANSI B92.1 - 1996** splines Nominal Ø 74.5 *[2.93]* Module 16/32 Z 46	35 *[1.38]*	R 2.8 *[R 0.11]*	74.5 *[2.93]*	M12	23 *[0.91]*	70 *[2.76]*	
2 A 4 0 (P)	**DIN 6885** Key X 20 *[0.79]* Y 74 max. *[2.91] max.*	30 *[1.18]*	R 2.5 *[0.10 R.]*	Ø 69.99 *[2.76 dia.]*	M16	90 *[3.54]*	106 *[4.17]*	

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

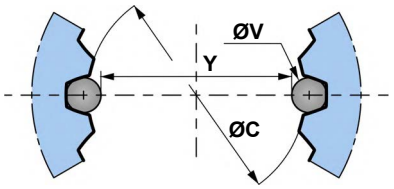
Splined coupling



Standard NF E22-141
Pressure angle 20°.
Centering on flanks.
Slide fit (7H quality).

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

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

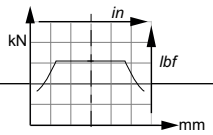


C	Ø G	H	Ø J	K	N	Mo	Z	Offset	Ø C (H10)	Ø V	Y	Tolerance µm *[µin]*
2 A 1 0 (P)	66 *[2.60]*	25 *[0.98]*	60 *[2.36]*	69 *[2.72]*	65 *[2.56]*	2.5	24	2 *[0.08]*	60 *[2.36]*	5 *[0.20]*	55.169 *[2.17]*	+ 86 / 0 *[+3.386 / 0]*
2 A 5 0 (P)	71.5 *[2.81]*	25 *[0.98]*	64 *[2.52]*	69 *[2.72]*	70.0 *[2.76]*	3	22	+0.35 *[+0.0138]*	64.0 *[2.52]*	5.25 *[0.21]*	59.042 *[2.32]*	+ 76 / +28 *[+2.992 / +1.1]*
2 A 8 0 (P)	76.0 *[2.99]*	24 *[0.94]*	71.438 *[2.81]*	69 *[2.72]*	63.242 *[2.49]*	16/32	46	-	71.438 *[2.81]*	2.743 *[0.11]*	69.201 *[2.72]*	+ 32 / -32 *[+2.992 / +1.1]*

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 for Classic and HighFlow™ motor

Permissible radial loads



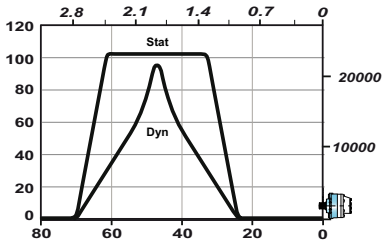
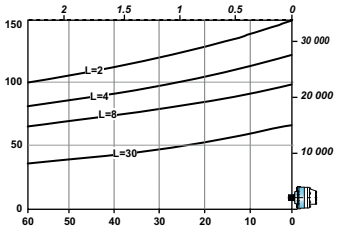
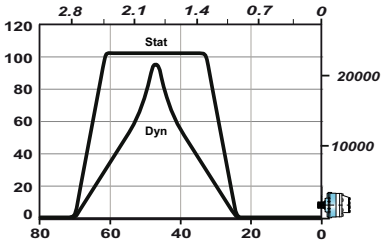
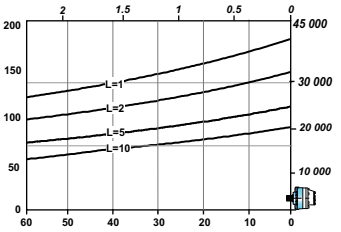
Max. permissible loads: 0 tr/min *[0 RPM]*; 0 bar *[0 PSI]*

Continuous permissible loads:
> 0 tr/min *[> 0 RPM]*; 275 bar *[3 988 PSI]*.

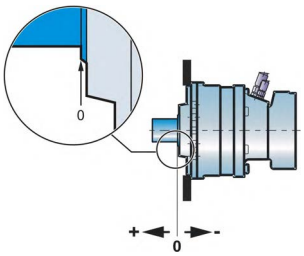
Service life of bearings

Test conditions :

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

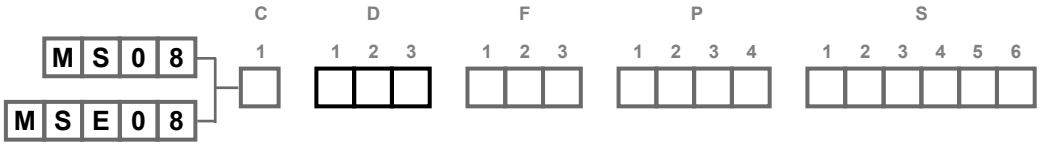
2 A 1 0 1 2 3 4 P		
2 A 5 0 1 2 3 4 P		

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 Poclain Hydraulics application engineer.

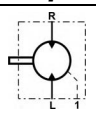
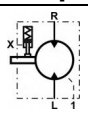


VALVING SYSTEMS AND HYDROBASES

for Classic motor on demand for HighFlow™ motor

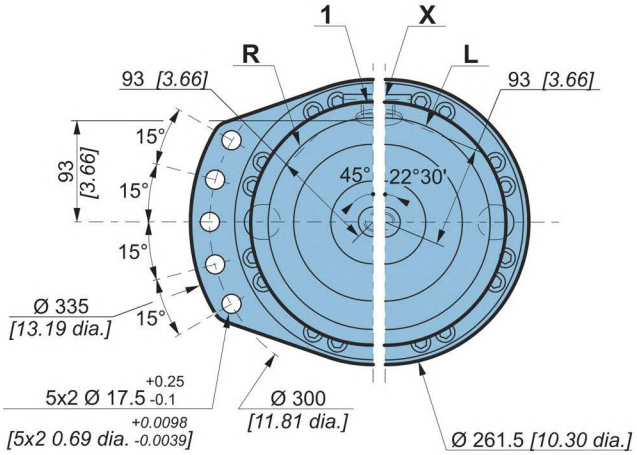


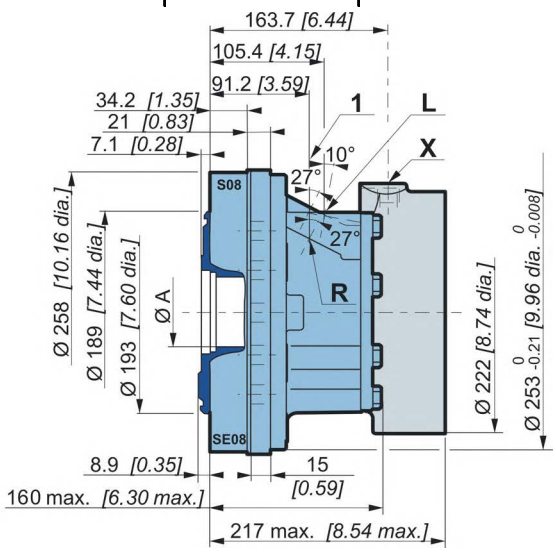
Dimensions for 1-displacement valving

	34.4 kg *[76 lb]*	51.8 kg *[114 lb]*
	0.50 L *[30 cu.in]*	1.00 L *[60 cu.in]*
		

D
1 2 3
1 2

D
1 2 3
1 1

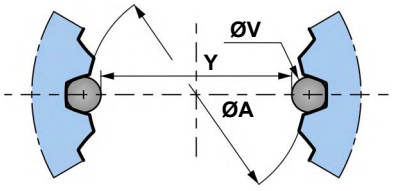




Cylinder block splines

(as per standard NF E22-141)

ØA	Module	Z	Dimension on 2 pins Y	ØV
60 *[2.362]*	2.5	24	69.580 *[2.739]*	4.5 *[0.177]*

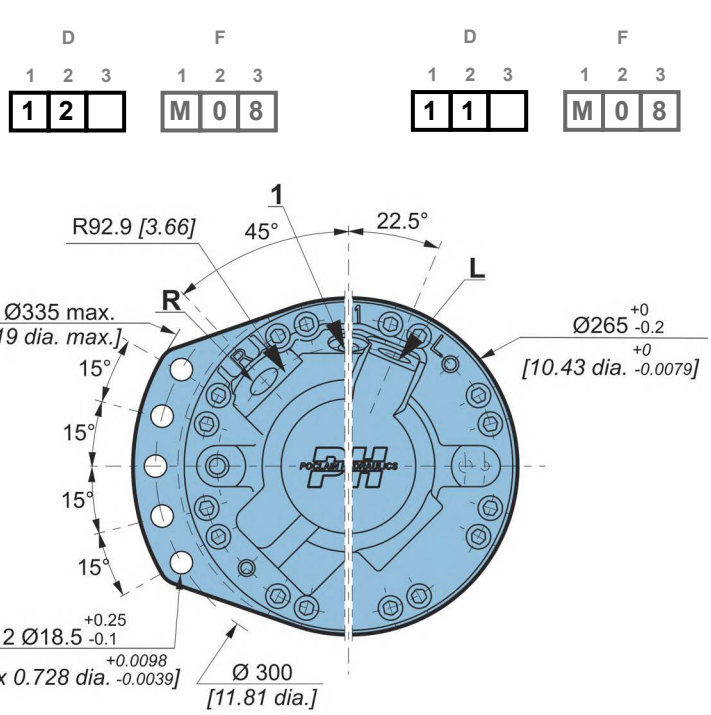


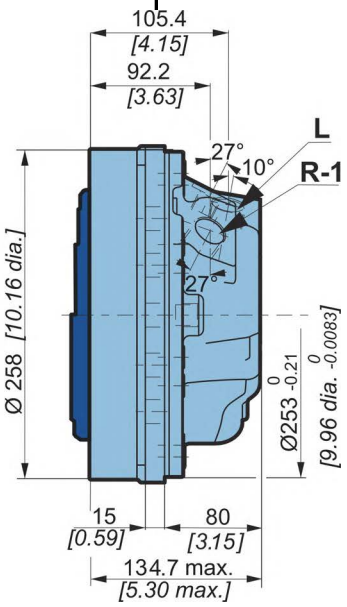
You are advised to have the installation validated by your Poclain Hydraulics application engineer before using the hydraulic unit in an application.

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

Dimensions for one-piece valving single displacement

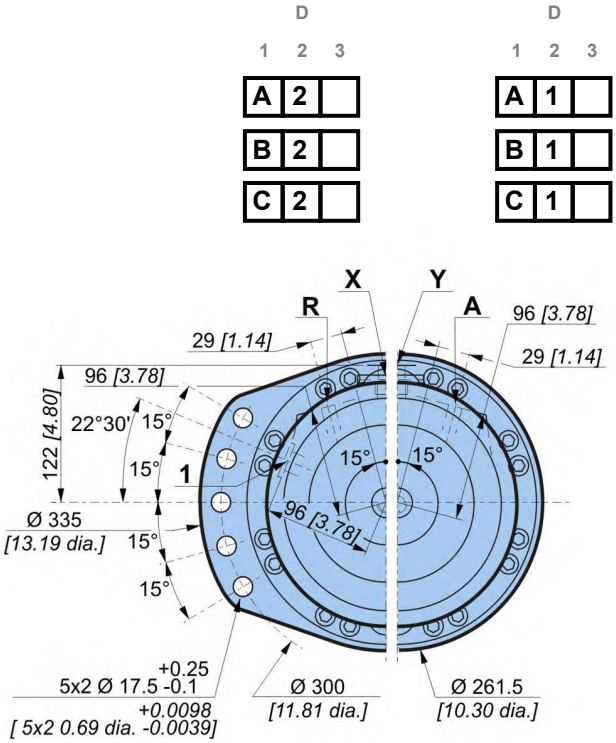
35 kg [77 lb]	
0.50 L [30 cu.in]	

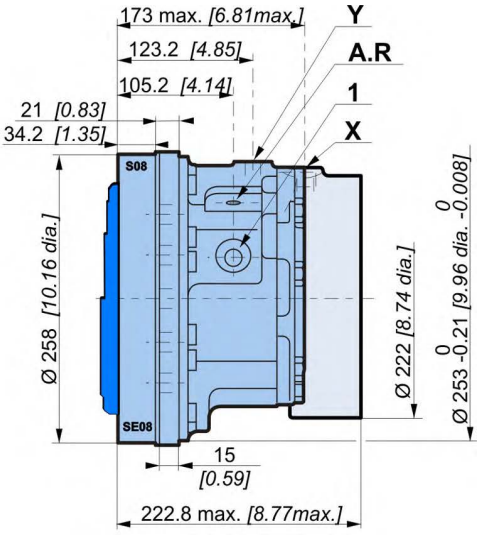




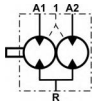
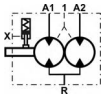
Dimensions for 2-displacement valving

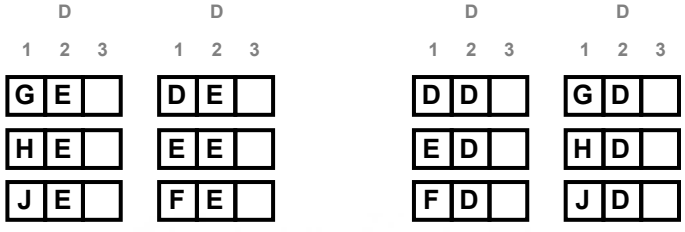
37.8 kg [83 lb]	54.7 kg [120 lb]	
0.50 L [30 cu.in]	1.00 L [60 cu.in]	

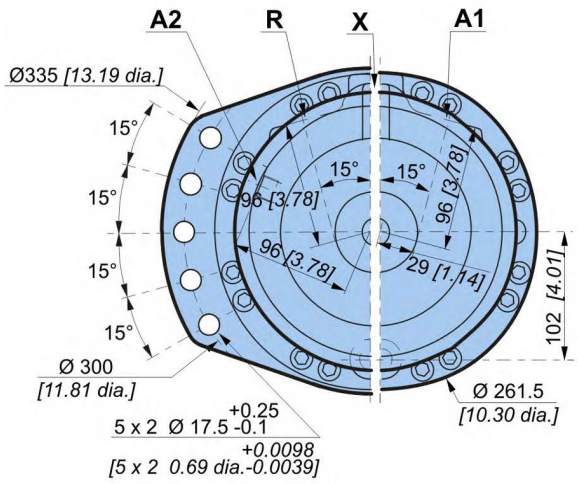


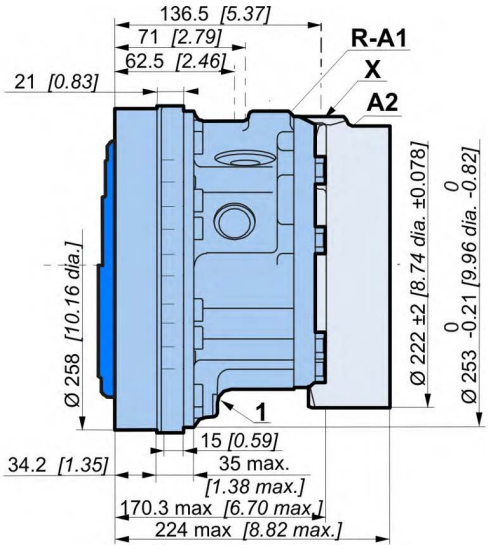


Dimensions for Twin-Lock™ valving

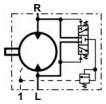
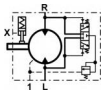
	37.8 kg *[83 lb]*	54.7 kg *[120 lb]*
	0.50 L *[30 cu.in]*	1.00 L *[60 cu.in]*
		

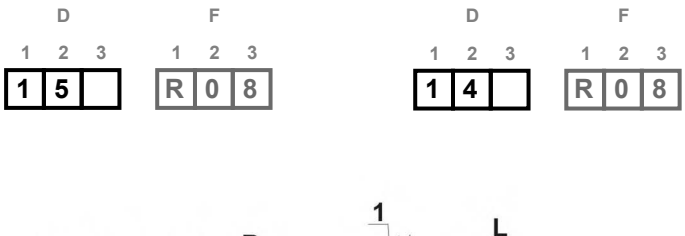


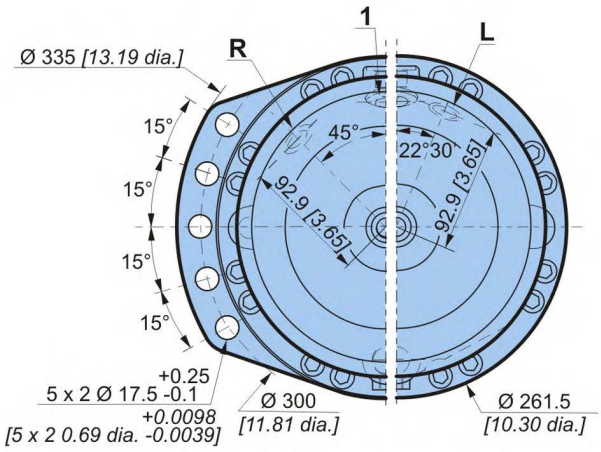


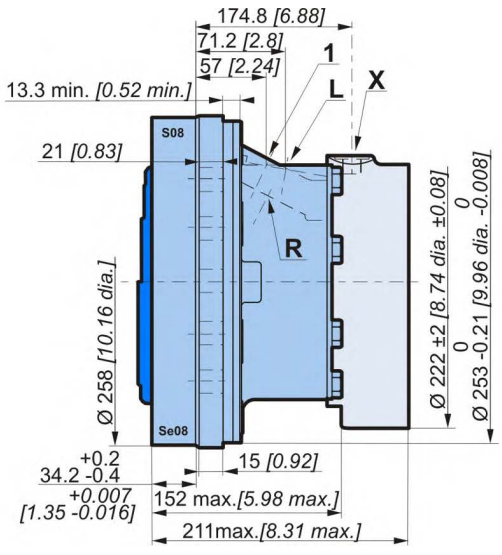


Dimensions for 1-displacement valving with built-in exchange

	34.4 kg *[76 lb]*	51.8 kg *[114 lb]*
	0.50 L *[30 cu.in]*	1.00 L *[60 cu.in]*
		







Exchange

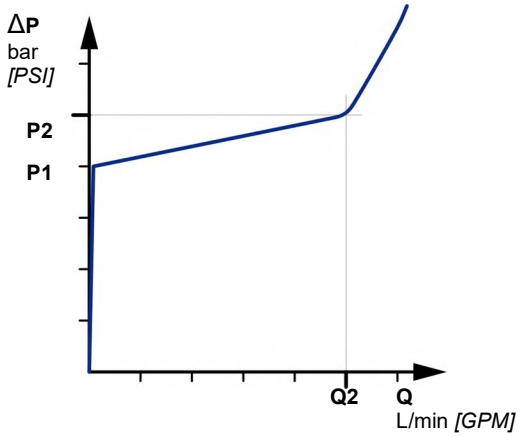
When a coding request is made, you must specify information on the threshold of the selector and the valve.

Selector spool

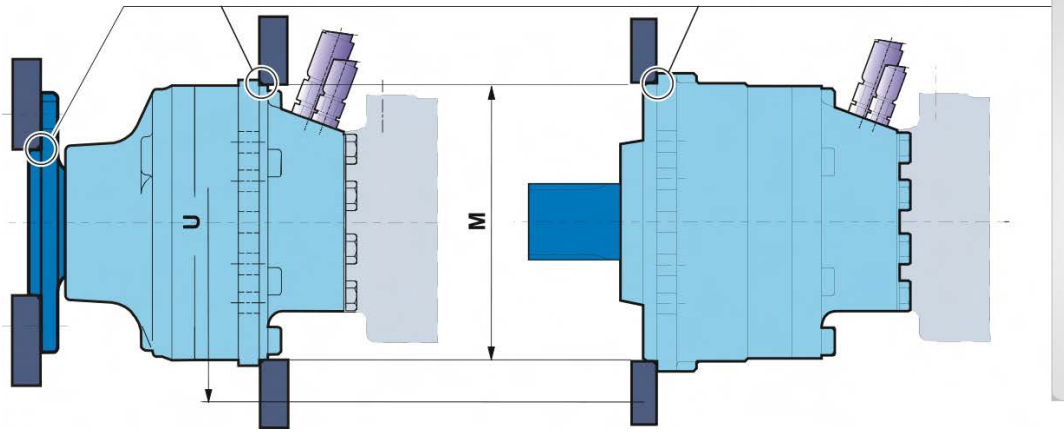
Selector threshold bar *[PSI]*	Opening pressure of selector bar *[PSI]*
8 *[116]*	9.9 ±1.2 *[144 ±17]*

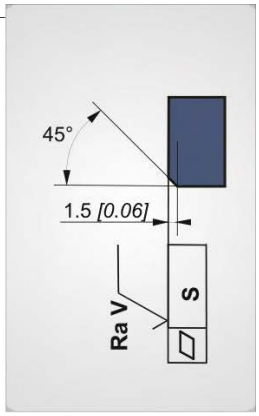
Fitted valve

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





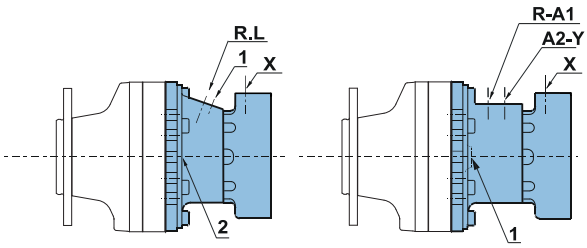
Take care over the immediate environment of the connections.

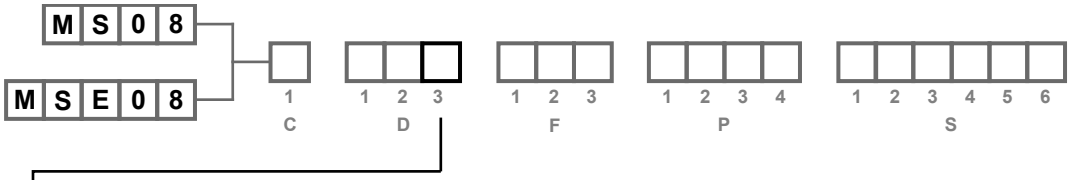
	ØM (1)	ØU	S	Ra V		Class
Wheel motor	253 *[9,96]*	300 *[11,81]*	0,2 *[0,008]*	12,5µm *[0,49µin]*	2 x 5 M16 x 2	8,8
Shaft motor	224 *[8,82]*	300 *[11,81]*				

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

See generic installation motors N°B59689D.

Hydraulic connections





		Standards	Power supply	Standards	Case drain	2nd displacement control	Control of parking brake
			R-L		1, 2		X
	A	ISO 11 926-1	1" 1/16-12 UNF	ISO 11 926-1	3/4"-16 UNF		9/16"-18 UNF
	1	ISO 6162	SAE 6000 PSI- 1/2"	ISO 9974-1	M18 x 1.5		M16 x 1.5
	2	ISO 6162	SAE 6000 PSI- 1/2"	ISO 1179-1	BSP 3/8		BSP 3/8
	4	ISO 9974-1	M22 x 2	ISO 9974-1	M18 x 1,5		M16 x 1.5
	5	ISO 9974-1	M27 x 2	ISO 9974-1	M18 x 1.5		M16 x 1.5
	8	ISO 6149-1	M22 x 2	ISO 6149-1	M18 x 1.5		M16 x 1.5
					1, 2	Y	X
	A	ISO 11 926-1	1"1/16-12 UNF	ISO 11 926-1	3/4"-16 UNF	9/16"-18 UNF	9/16"-18 UNF
	1	ISO 6 162	SAE 6000 PSI- 1/2"	ISO 9974-1	M18 x 1.5	M14 x 1.5	M16 x 1.5
	5	ISO 9974-1	M27 x 2	ISO 9974-1	M18 x 1.5	M14 x 1.5	M16 x 1.5
					1, 2	Y	X
	A	ISO 11 926-1	1"1/16-12 UNF	ISO 11 926-1	3/4"-16 UNF	9/16"-18 UNF	9/16"-18 UNF
	3	ISO 1179-1	BSP 3/4	ISO 1179-1	BSP 3/8	BSP 1/4	BSP 1/4
	5	ISO 9974-1	M27 x 2	ISO 9974-1	M18 x 1.5	M14 x 1.5	M16 x 1.5

Max. pressures	MS / MSE	bar *[PSI]*	450 *[6 527]* 400 *[5 802]*		1 *[15]*	30 *[435]*	30 *[435]*

You are strongly advised to use the fluids specified in brochure "Installation guide" N° B59689D.

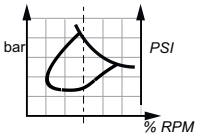
To find the connections' tightening torques, see the brochure "Installation guide" N° B59689D.

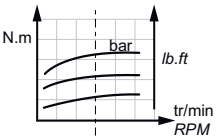
Do not put either a check valve or a poppet valve on the pilot lines (parking brake and displacement change) between the charge pump and the pilot valve. Do not use a piloting valve with integrated check valve.

Efficiency for Classic and HighFlow™ motor

Overall efficiency

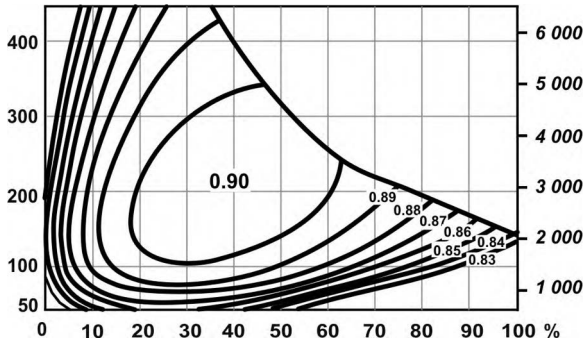
Average values given for guidance for code 0 displacement after 100 hours of operation with HV46 hydraulic fluid at 50°C *[122°F]*.

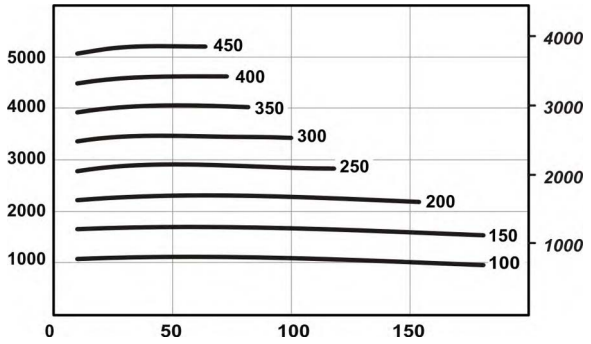




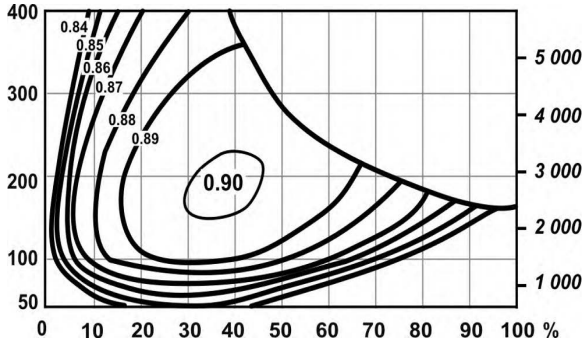
Actual output torque

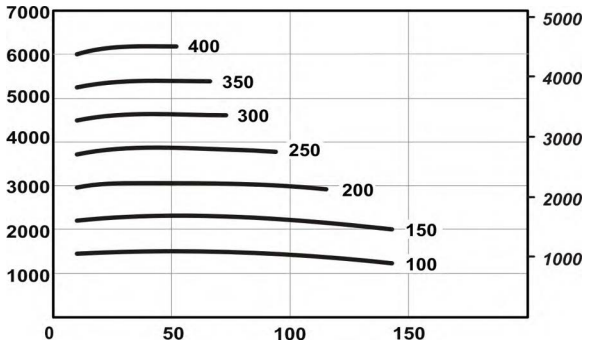
MS08





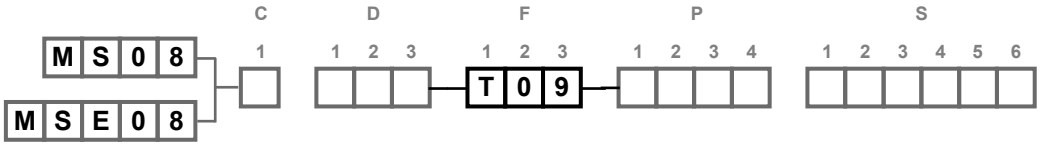
MSE08



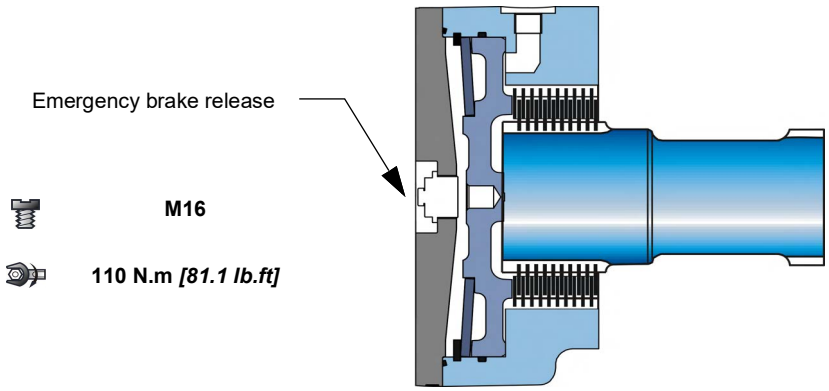


For a precise calculation, consult your Poclain Hydraulics application engineer.

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.

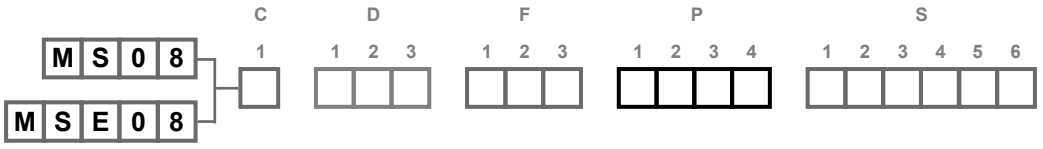
C	T 0 9
Parking brake torque at 0 bars on housing (new brake)	9,000 Nm *[6,640 lb.ft]*
Dynamic emergency braking torque at 0 bars on housing (max. 10 uses of emergency brakes)	5,850 Nm *[4,310 lb.ft]*
Residual parking braking at 0 bars on housing *	6,750 Nm *[4,980 lb.ft]*
Min. brake release pressure	12 bar *[174 PSI]*
Max. brake release pressure	30 bar *[435 PSI]*
Oil capacity	100 cm³ *[6.1 cu.in]*
Volume for brake release	40 cm³ *[2.4 cu.in]*
Max. energy dissipation	110 336 J

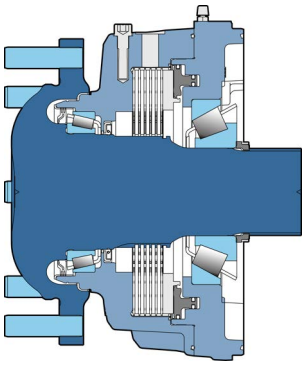
* After emergency brake has been used

Do not run-in the multidisc brakes.

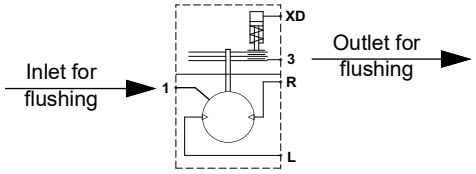
A functional check of the parking brake must be carried out each time it is used as an auxiliary brake (or emergency brake). For all vehicles capable of speeds over 25 km/h, please contact your Poclain Hydraulics application engineer.

S08™ Service brake





Brake schematic



The dynamic brake must be flushed according to the brake schematics (flushing flow always goes of the bearing support).

Brake principle
This is a multidisc brake which is activated by a braking pressure (dynamic braking). The braking command creates a pressure on the dynamic braking piston, which damps the fixed and free discs, preventing the shaft from turning. Braking torque increases linearly as a function of the piloting pressure.

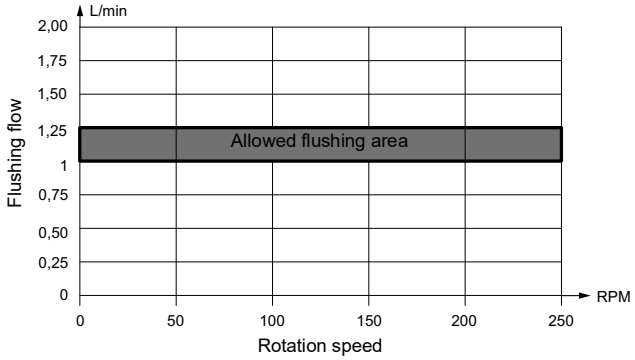
C

U 1 0
V 1 0

W 1 0
Y 1 0

Max. rotation speed	250 rpm
Max. energy dissipation	350 kJ
Average torque during dynamic braking	13,000 Nm *[9,590 lb.ft]*
Pressure to obtain max. permissible braking	140 bar
Piston chamber piloting volume, worn brake	40,5 cm³
Service brake max. allowed energy	290 kJ

Flushing flow vs Rotation speed



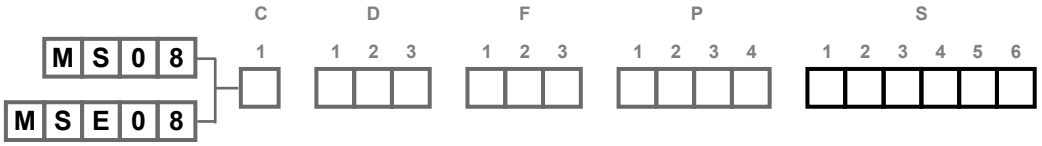
Do not run-in the multidisc brakes.

The use of certain oils may not offer the characteristics stated above. Consult your Poclain Hydraulics application engineer.

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/h, please contact your Poclain Hydraulics application engineer.

When using the Boosted brake™ option, the S08™ bearing support might not be able to withstand the combination of maximum hydrostatic torque and maximum service brake torque. Please contact your Poclain Hydraulics application engineer for a detailed calculation.

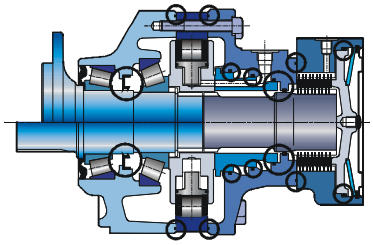
OPTIONS



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

1 - Fluorinated elastomer seals

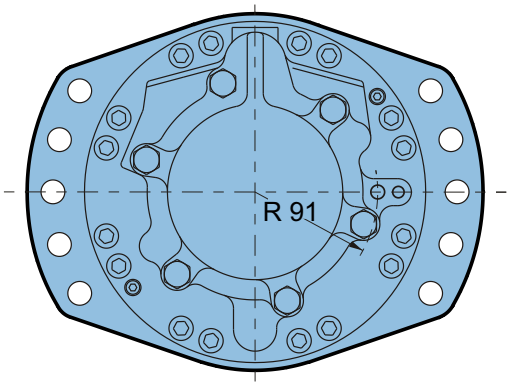
Nitrile seals marked in the figure below replaced by fluorinated elastomer seals.

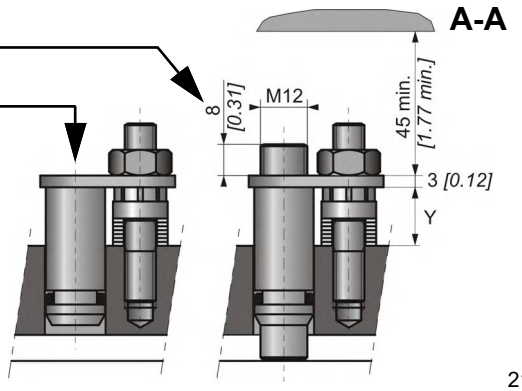


Consult your Poclain Hydraulics sales engineer.

2 - S - Q - 8 - 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





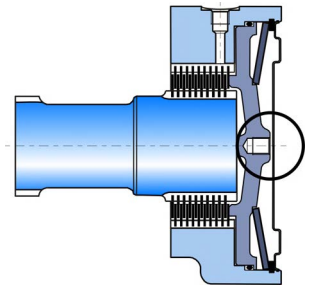
21.1
60
Max. length Y=
Standard number of pulses per revolution=

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. B61352L.

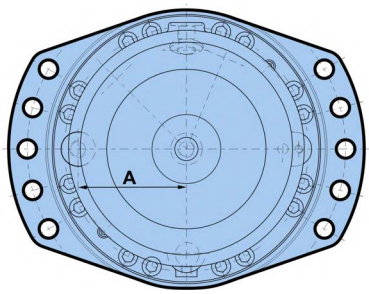
3 - Brake environmental cover without plug

No plug or hole in the cover.



5 - Drainage

Fit an additional drain on the valving cover.



A
102 *[4.02]*

6 - Industrial support

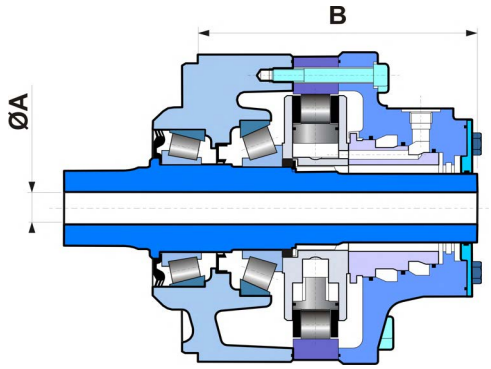
Reduction of around 50% from the rated value in the bearings' preload value.

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.

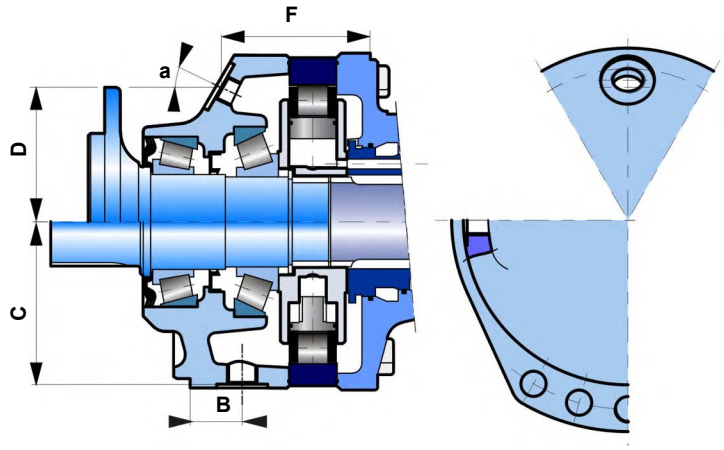
A - Hollow shaft



A mm *[in]*	B mm *[in]*
Ø 35 *[1.38 dia.]*	231.2 *[9.10]*

Radial load x 0.75
No torque allowed towards the rear

B - Drain on the bearing support



	ISO 6419-1	B mm [in]	C mm [in]	D mm [in]	F mm [in]	a
Shaft motor	M18 x 1.5	37.5 [1.5]	129 [5.08]			
Wheel motor	M18 x 1.5			105 [4.13]	89.5 [3.52]	35°
Short wheel motor	M18 x 1.5			97 [3.82]	95 [3.74]	30°

C - Abrasive environments (mechanical seal)

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

Consult your Poclain Hydraulics sales engineer.

E - Reinforced sealing

Requires reinforcement of shaft bearings.

G - Special wheel rim mounting

Enables certain combinations different from the standard mountings defined on pages 11 and 13.

Consult your Poclain Hydraulics sales engineer.

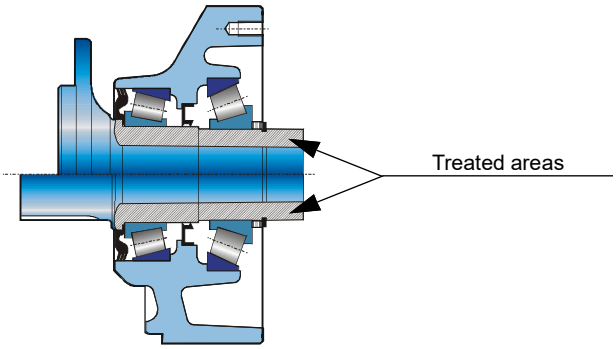
H - High efficiency

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.

Option “M” becomes mandatory when selecting the HighFlow™ valving.

POCLAIN
Hydraulics

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