

MG05-MGE05

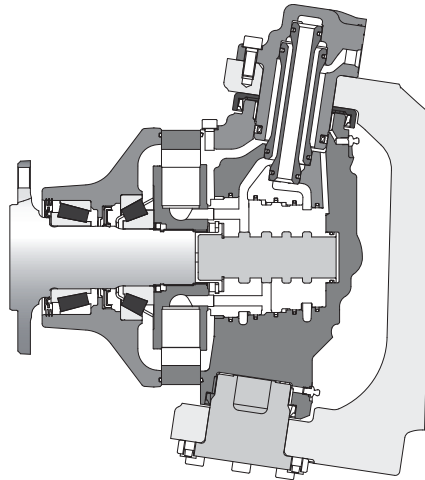
HYDRAULIC MOTORS



T E C H N I C A L C A T A L O G



CHARACTERISTICS



Motor inertia = 0.01 kg.m²
 Noise emissions = 60 dBA

	C	Displacement		Theoretical torque		Max.power		Max.speed		Pressure max. bar [PSI]
		1	2	1		1	2	1	2	
		cm ³ /tr [cu.in./rev.]	cm ³ /tr [cu.in./rev.]	at ΔP 100 bar Nm	at ΔP 1000 PSI [lb.ft]	kW [HP]	kW [HP]	tr/min [RPM]	tr/min [RPM]	
Cams with equal lobes MG05	6	260 [15,9]	130 [7,9]	413	[210]	29 [39]	19 [25]	420	420	450 [6 527]
	8	376 [22,9]	188 [11,5]	598	[304]			305	385	
	0	468 [28,5]	234 [14,3]	744	[378]			250	310	
	1	514 [31,3]	257 [15,7]	817	[416]			220	270	
	2	560 [34,2]	280 [17,1]	890	[453]			205	250	
	8	503 [30,7]	251 [15,3]	800	[407]			225	275	
Cams with unequal lobes MG05	0	626 [38,2]	313 [19,1]	995	[506]	29 [39]	19 [25]	185	225	400 [5 802]
	1	687 [41,9]	344 [21,0]	1092	[555]			165	200	
	2	749 [45,7]	374 [22,8]	1191	[606]			150	185	
	D	418 [25,5]	280 [17,1] 138 [8,4]	665	[338]			240	250 280	
	N	422 [25,7]	234 [14,3] 188 [11,5]	671	[341]			280	330 335	
	H	445 [27,1]	257 [15,7] 188 [11,5]	708	[360]			250	270 305	
Cams with unequal lobes MGE05	A	468 [28,5]	280 [17,1] 188 [11,5]	744	[378]	230	245 280			
	D	559 [34,1]	374 [22,8] 185 [11,3]	889	[452]	175	180 240			
	N	564 [34,4]	313 [19,1] 251 [15,3]	897	[456]	205	245 250			
	H	595 [36,3]	344 [21,0] 251 [15,3]	946	[481]	185	195 235			
	A	626 [38,2]	374 [22,8] 251 [15,3]	995	[506]	170	170 220			

1 First displacement

2 Second displacement



See option M for higher speed.



CONTENT

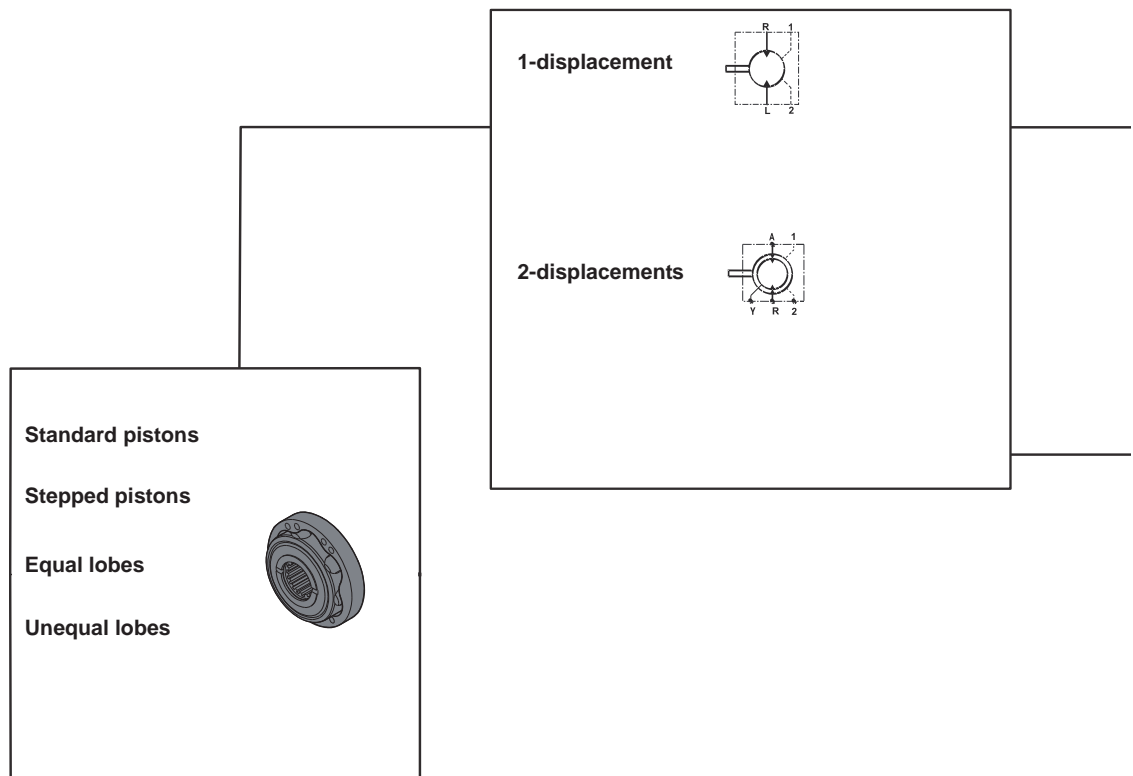
<p>MODULARITY</p> <hr/> <p>MODEL CODE</p>	<p>4</p> <hr/> <p>6</p>		Modularity and Model code
<p>CHARACTERISTICS</p> <hr/> <p>Dimensions for standard flange motor</p> <p>Dimensions for standard drum brake motor</p> <p>Dimensions for parking brake motor</p> <p>Support types</p> <p>Load curves</p> <p>Efficiency</p> <p>Chassis mounting</p> <p>Steering angle</p> <p>Steering attachement</p> <p>Hydraulic connections for flange motor</p> <p>Hydraulic connections for drum brake motor</p> <p>Hydraulic connections for parking brake motor</p> <p>Drum brake (250 x 60)</p> <p>Parking brake</p>	<p>9</p> <hr/> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p>		Characteristics
<p>OPTIONS</p> <hr/>	<p>23</p> <hr/>		Options

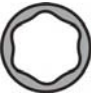


MODUL

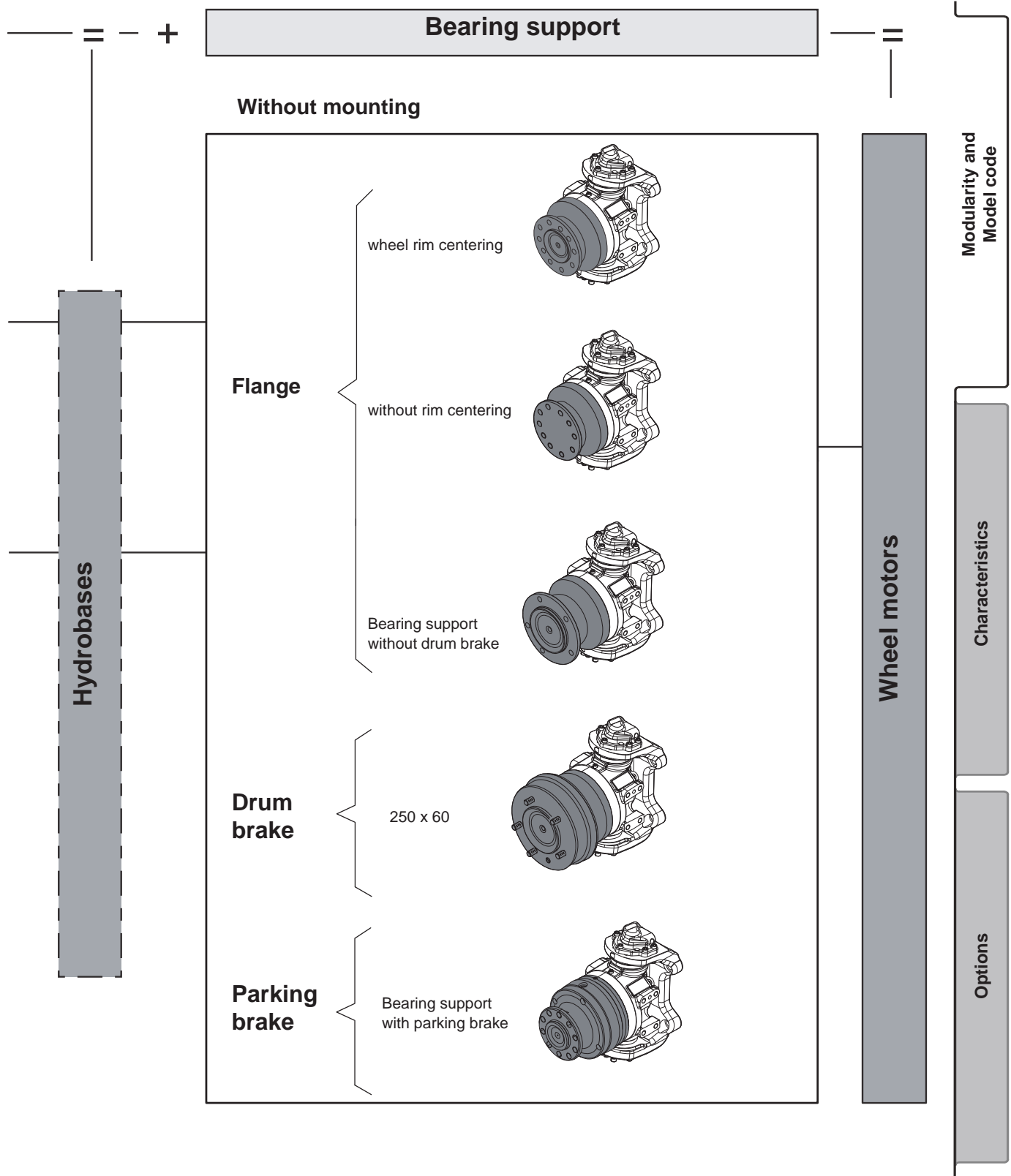


Without mounting



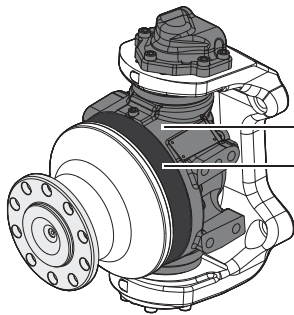


ARITY

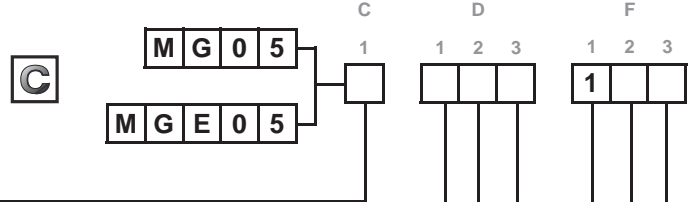




MODEL



Valving System
Torque Module



	1 displacement 2 displacements		
	cm ³ /tr [cu.in/rev.]		
Cams with equal lobes	260 [15.9]	130 [7.9]	6
	376 [22.9]	188 [11.5]	8
	MG05 468 [28.6]	234 [14.3]	0
	514 [31.4]	257 [15.7]	1
	560 [34.2]	280 [17.1]	2
	503 [30.7]	251 [15.3]	8
Cams with unequal lobes	MGE05 626 [38.2]	313 [19.1]	0
	687 [41.9]	344 [21.0]	1
	749 [45.7]	374 [22.8]	2
	418 [25.5]	280 [17.1]	D
		138 [8.4]	
	422 [25.7]	234 [14.3]	N
D1		188 [11.5]	
	MG05 445 [27.1]	257 [15.7]	H
		188 [11.5]	
	468 [26.8]	280 [17.1]	A
		188 [11.5]	
	559 [25.5]	374 [22.8]	D
D2		185 [11.3]	
	MGE05 564 [34.4]	313 [19.1]	N
		251 [15.3]	
	595 [36.3]	344 [21.0]	H
		251 [15.3]	
	626 [38.2]	374 [22.8]	A
	251 [15.3]		
D1 Valving type			1
1-displacement valving			A
	Ratio 2		B
	Ratio <2		C
	Ratio >2		
2-displacement (Symetrical)			

D2 Front unit
Without flushing **0**

D3 Connection type
ISO 9974-1 (metric) **4**
ISO 11926-1 (SAE J514 with O-ring seal) **A**

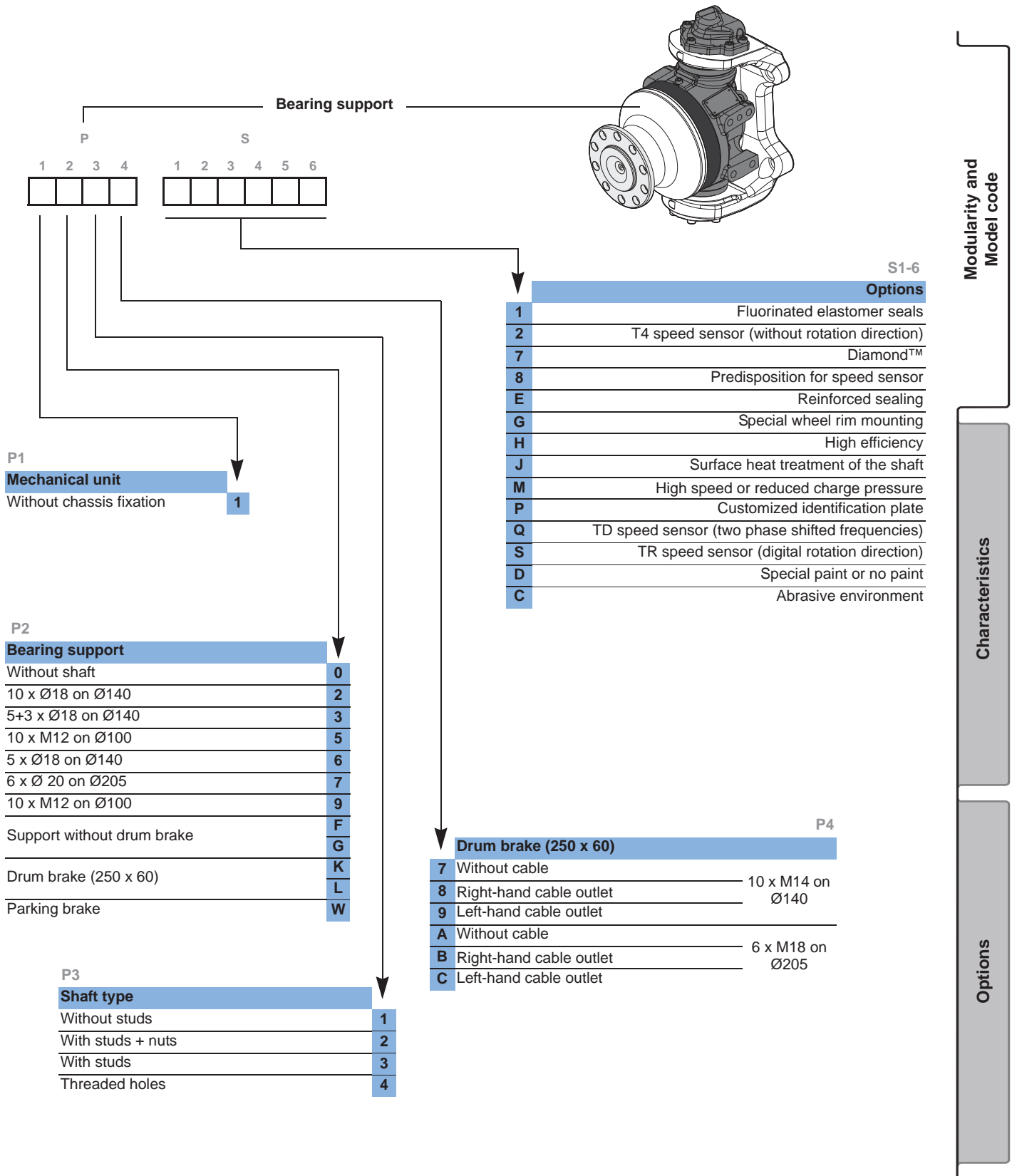
F1 King pin
With C frame 4 x Ø22 +1 x Ø20 **1**

F2 Attachments
Without **0**

F3 King pin type
In line with shaft **1**



CODE





Methodology :

This document is intended for manufacturers of machines that incorporate Poclain Hydraulics products. It describes the technical characteristics of Poclain Hydraulics products and specifies installation conditions that will ensure optimum operation. This document includes important comments concerning safety. They are indicated in the following way:



Safety comment.

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



Essential instructions.



General information .



Information on the model number.Information on the model code.



Weight of component without oil.



Volume of oil.



Units.



Tightening torque.



Screws.

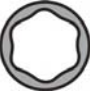


Information intended for Poclain-Hydraulics personnel.

The views in this document are created using metric standards.

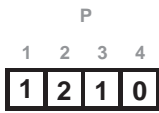
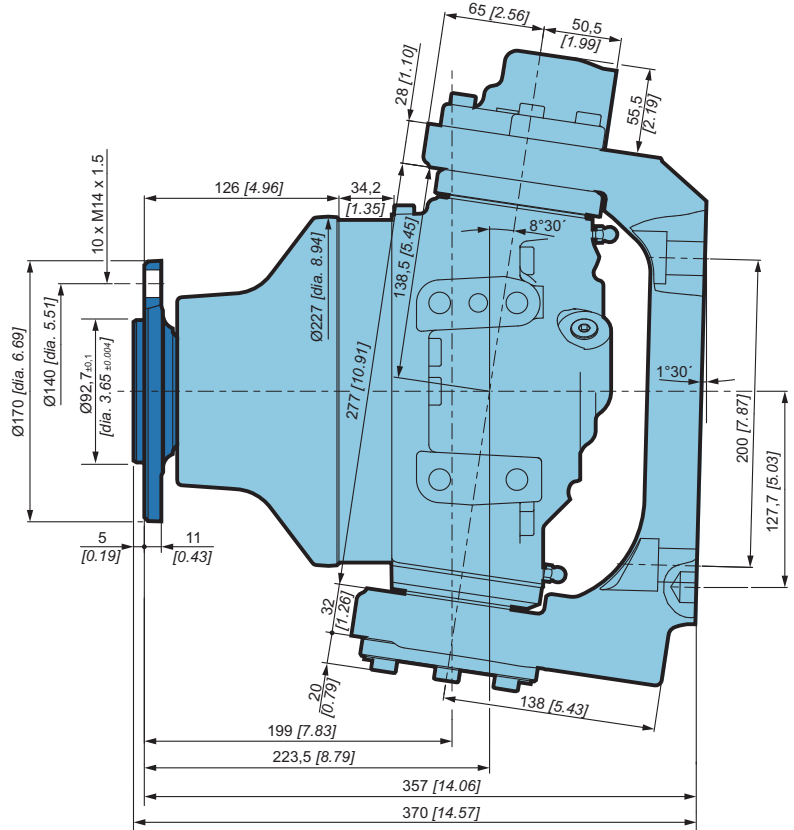
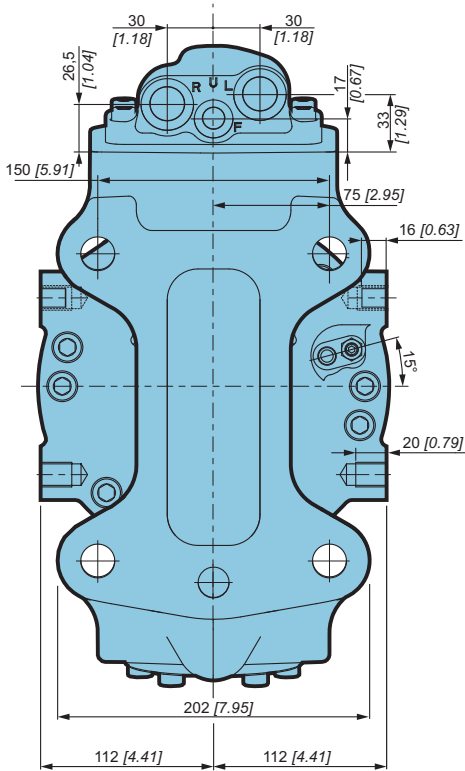
The dimensional data is given in mm and in inches (inches are between brackets and italic)





CHARACTERISTICS

Dimensions for standard flange motor



	Without brake
	79 kg [174 lb]
	1,00 L [60 cu.in]

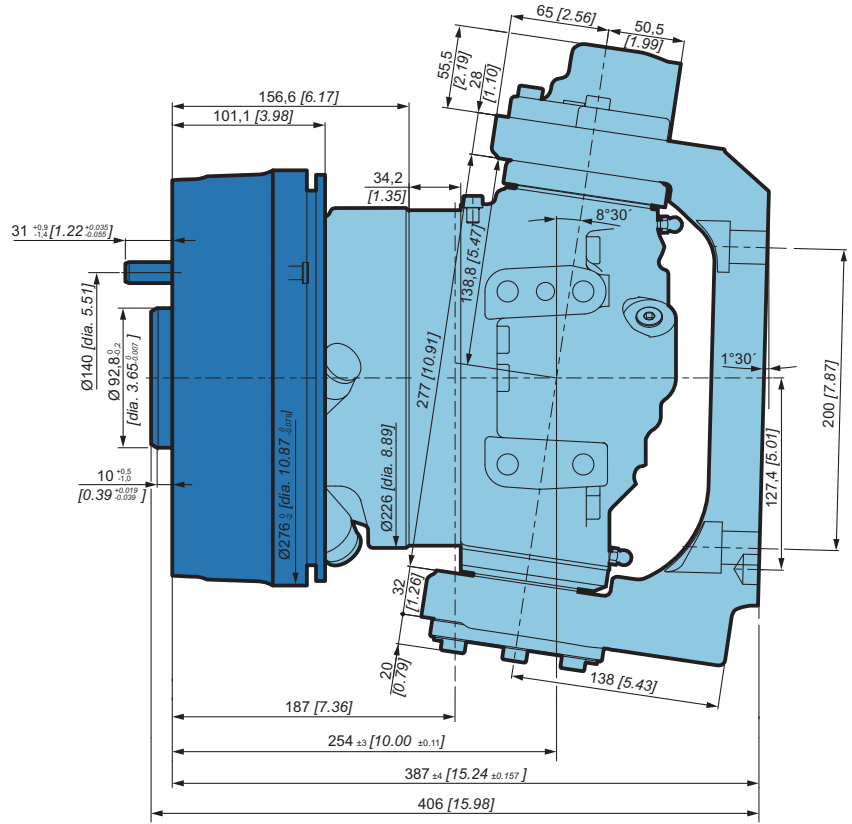
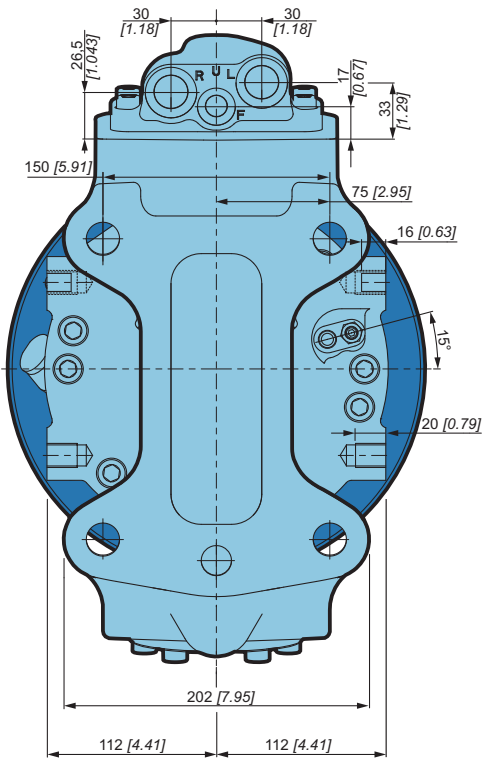
Modularity and Model code

Characteristics

Options



Dimensions for standard drum brake motor

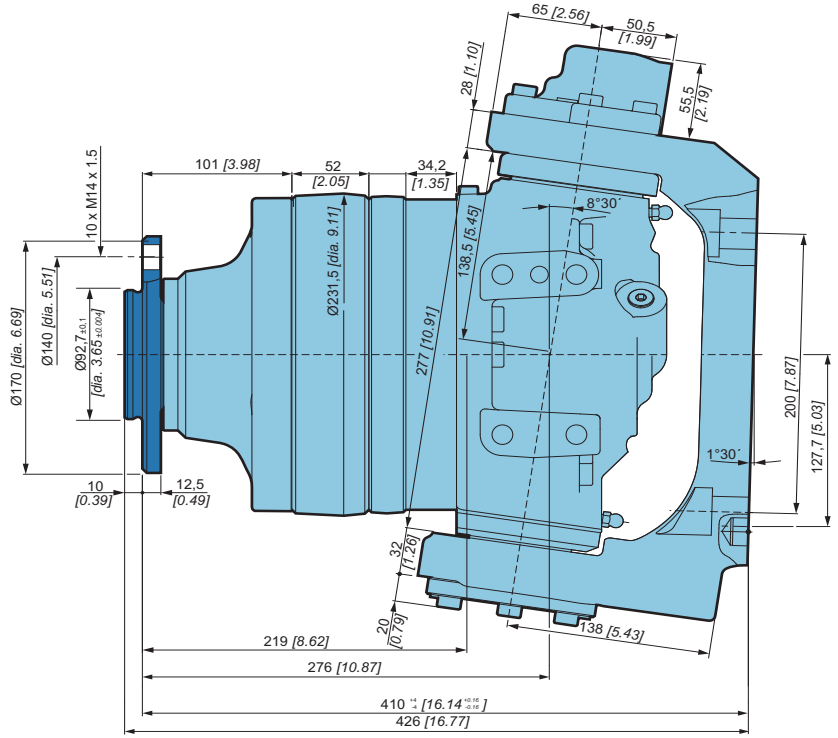
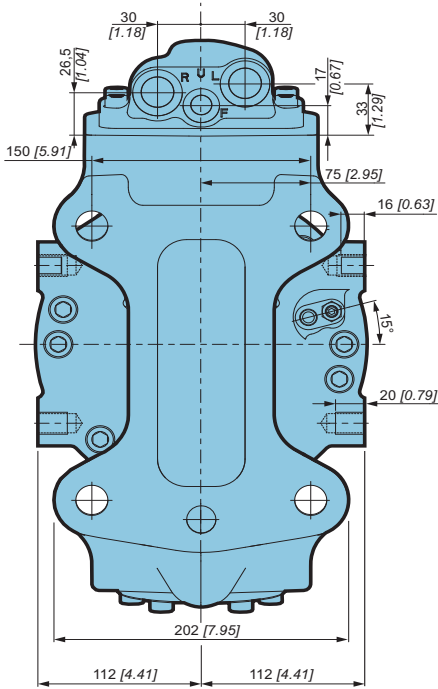


P			
1	2	3	4
1	K	3	0

	With drum brake
	96 kg [210 lb]
	1,00 L [60 cu.in]



Dimensions for parking brake motor



P
1 2 3 4
1 W 1 0

	With parking brake
	97 kg [213 lb]
	1,00 L [60 cu.in]

Modularity and Model code

Characteristics

Options



Support types

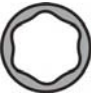


C	A	B	C	D	E	N	Wheel rim mountings	L	
	mm [in]	mm [in]	mm [in]	mm [in]	mm [in]	mm [in]		mm [in]	
1 2 1 0 1 2 3 4 P	Ø 92,7 [3,65 dia.]	Ø 140 [5,51 dia.]	Ø 170 [6,69 dia.]	357,0 [14,06]	Ø 228 [8,98 dia.]	Ø 18 [0,71 dia.]	10 x M14x1.5	11 [0,43]	
1 7 1 0 1 2 3 4 P	Ø 160,7 [6,33 dia.]	Ø 205 [8,07 dia.]	Ø 245 [9,65 dia.]	357,0 [14,06]	Ø 228 [8,98 dia.]	Ø 20 [0,79 dia.]	6 x M18x1.5	14 [0,55]	
1 3 1 0 1 2 3 4 P	Ø 95,7 [3,77 dia.]	Ø 140 [5,51 dia.]	Ø 180 [7,09 dia.]	324,0 [12,76]	Ø 228 [8,98 dia.]	Ø 18 [0,71 dia.]	5 x M14x1.5	10,5 [0,41]	
1 6 1 0 1 2 3 4 P	Ø 92,7 [3,65 dia.]	Ø 140 [5,51 dia.]	Ø 180 [7,09 dia.]	324,0 [12,76]	Ø 228 [8,98 dia.]	Ø 18 [0,71 dia.]	5 x M14x1.5	10,5 [0,41]	
1 5 4 0 1 2 3 4 P	-	Ø 100 [3,94 dia.]	Ø 120 h7 [4,72 dia.]	324,0 [12,76]	Ø 228 [8,98 dia.]	10 x M12x1.75	-	11,3 [0,44]	
1 9 4 0 1 2 3 4 P	-	Ø 100 [3,94 dia.]	Ø 120 h7 [4,72 dia.]	357,0 [14,06]	Ø 228 [8,98 dia.]	10 x M12x1.75	-	11,25 [0,44]	
1 K 3 0 1 L 3 0 1 2 3 4 P	Ø 92,7 [3,65 dia.]	Ø 140 [5,51 dia.]	Ø 276 [10,87 dia.]	388 [15,28]			10 x M14x1.5	30 [1,18]	
	Ø 160,7 [6,33 dia.]	Ø 205 [8,07 dia.]	Ø 276 [10,87 dia.]	388 [15,28]			6 x M18x1.5	35 [1,38]	
1 G 1 0 1 2 3 4 F	Ø 92,7 [3,65 dia.]	Ø 140 [5,51 dia.]	Ø 170 [6,69 dia.]	380,0 [14,96]	Ø 228 [8,98 dia.]	Ø 18 [0,71 dia.]	10 x M14x1.5	-	
1 F 1 0 1 2 3 4 F	Ø 160,7 [6,33 dia.]	Ø 205 [8,07 dia.]	Ø 245 [9,65 dia.]	380,0 [14,96]	Ø 228 [8,98 dia.]	Ø 20 [0,79 dia.]	6 x M18x1.5	-	
1 W 1 0 1 2 3 4 F	Ø 92,7 [3,65 dia.]	Ø 140 [5,51 dia.]	Ø 170 [6,69 dia.]	426,0 [16,77]	Ø 232 [9,11 dia.]	Ø 18 [0,71 dia.]	10 x M14x1.5	-	

i Also see "Brake" section (thumbnail opposite).

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

i For stronger bearings, consult with your Poclair Hydraulics application engineer.



Load curves

Permissible radial loads

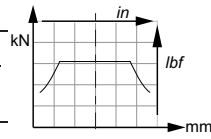
Test conditions :

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].

---- **Pivot load curve:** > 0 tr/min [> 0 RPM]; 150 bar [2 175 PSI]

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



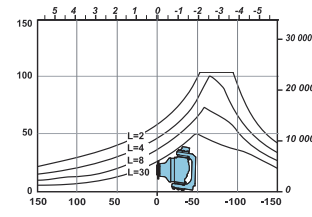
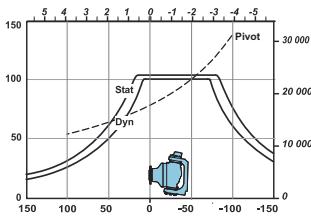
Service life of bearings

Test conditions :

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

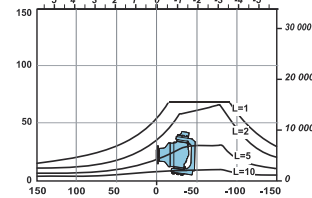
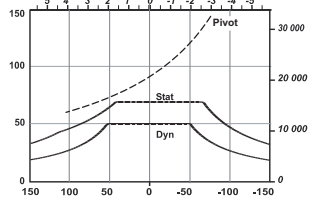
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1	7	1	0
1	2	3	4

P



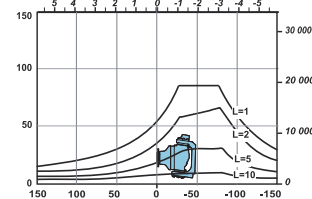
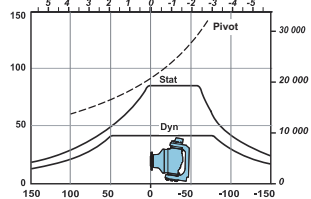
1	3	1	0
1	6	1	0
1	2	3	4

P



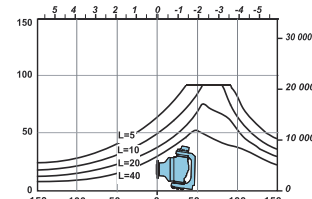
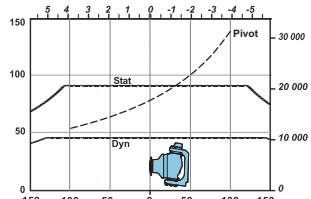
1	5	4	0
1	2	3	4

P



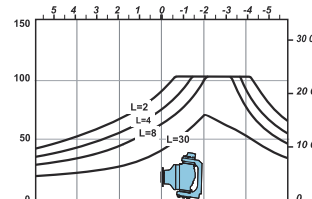
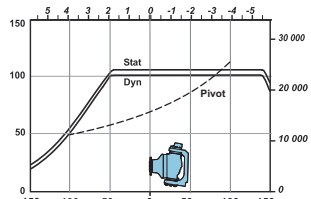
1	9	4	0
1	2	3	4

P

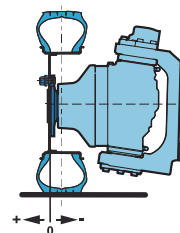


1	F	1	0
1	G	1	0
1	K	2	0
1	L	2	0
1	2	3	4

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 Poclair Hydraulics application engineer. ア



Modularity and Model code

Characteristics

Options



Loads are held by the bearing support and the pivot. It is mandatory to check the compatibility of your load cases and the max. permissible loads for the bearing support and the pivot. For an accurate calculation, consult your Poclain Hydraulics application engineer.

Studs

		P mm [in]	C min. mm [in]	C max. mm [in]	D mm [in]	Class	(1) N.m [lb.ft]	(2) N.m [lb.ft]
Various studs	M14x1.5	45 [1.77]	5 [0.20]	18 [0.71]	16.5 [0.65]	12.9	200 [147.5]	250 [184.4]
	M14x1.5	50 [1.97]		23 [0.91]				
	M14x1.5	62 [2.44]		33 [1.30]				
	M18x1.5	65 [2.56]		28 [1.10]				
Screws	M12x1.75	-	-	-	-	10.9	120 [88.5]	120 [88.5]
	1/2"-20 UNF	-	-	-	-	8.8		



(*) 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])



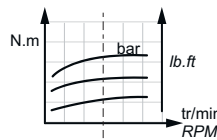
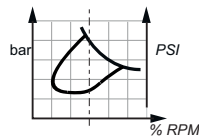
See generic installation motors N°801478197L.



Efficiency

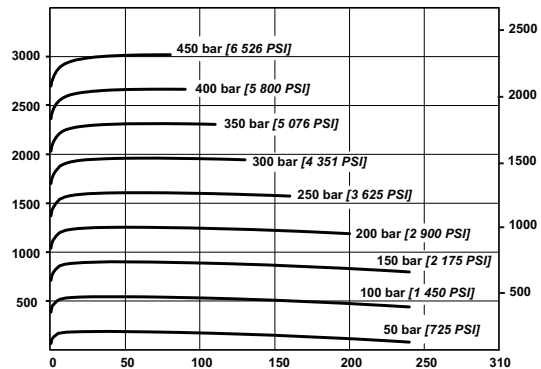
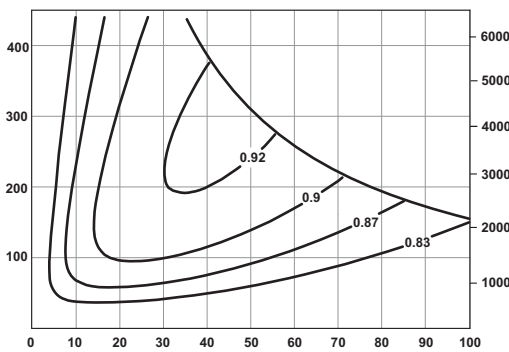
Overall efficiency

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

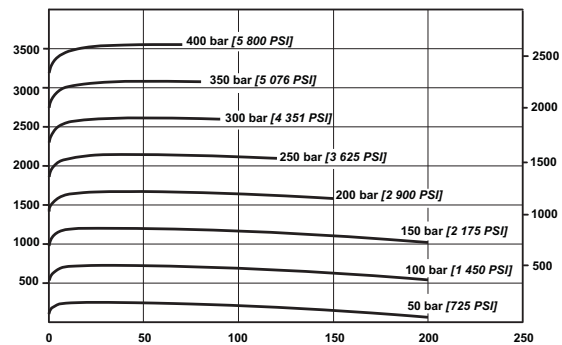
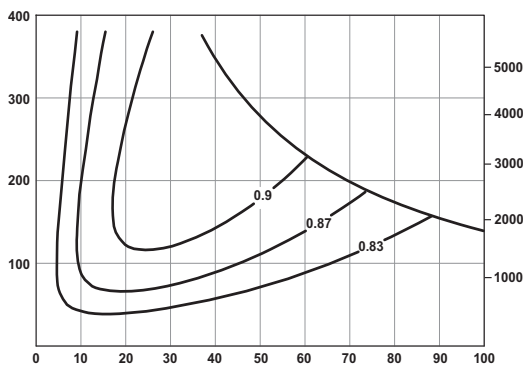


Actual output torque

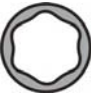
MG05



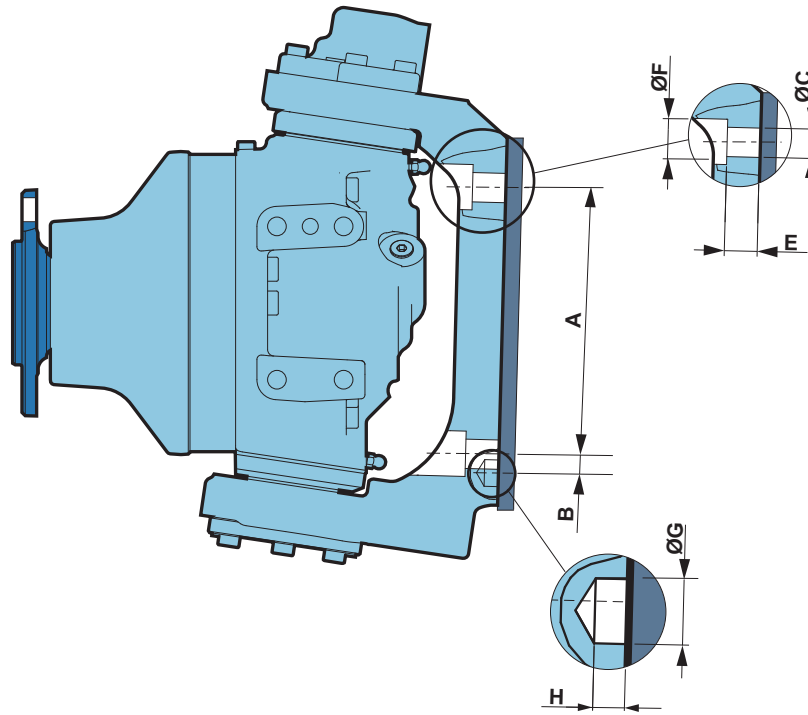
MGE05



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.



Chassis mounting



Take care over the immediate environment of the connections.

A (1) mm [in]	B (1) mm [in]	4xØC (2) mm [in]	E (5) mm [in]	4xØF (2) mm [in]	ØG (3) mm [in]	H (4) mm [in]
200,00 [7,87]	14 [0,55]	22 [0,87]	25 [0,98]	34 [1,34]	20 [0,79]	10,5 [0,41]

(1)	+ 0.2 [+0.0078] - 0.2 [- 0.0078]	(2)	+ 0.25 [+0.0098] - 0.1 [- 0.0039]	(3)	+ 0.13 [+0.005] 0	(4)	+ 0.5 [+0.019] - 0.5 [- 0.019]	(5)	+ 0.25 [+0.098] - 0.25 [- 0.0098]
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4xM20x2.5	Class	N.m [lb.ft]
	10.9	580 [428]
	12.9	690 [509]

The tightening torques are given for the indicated loads.



Pins are used to take tangential stress.



Poclain Hydraulics recommends spring type straight pins (slotted, heavy duty) following standard NF EN ISO 8752 or equivalent.

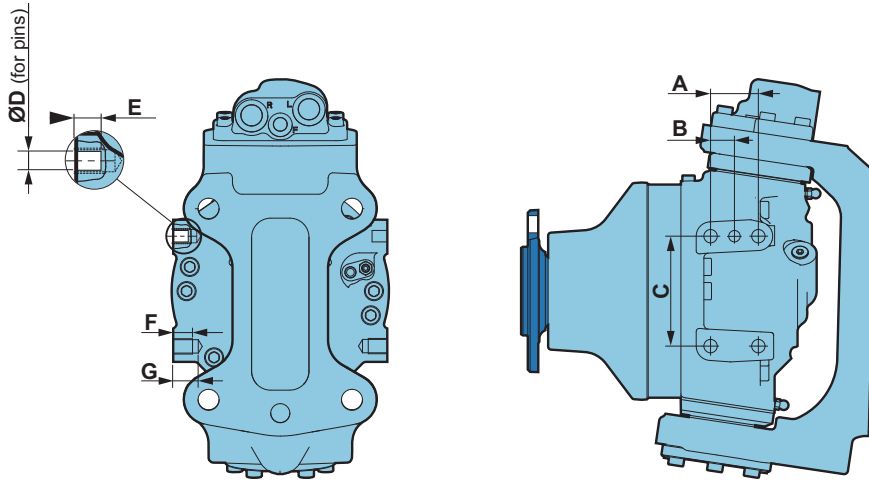
Modularity and Model code

Characteristics

Options



Steering attachment



A (2) mm [in]	B (2) mm [in]	C (2) mm [in]	2x ØD (1) mm [in]	E mm [in]	F mm [in]	G mm [in]
50 [1,97]	25 [0,98]	115 [4,53]	12 [0,47]	16 [0,63]	20 [0,79]	26 [1,02]

(1) + 0.25 [+0.0098]
- 0.1 [- 0.0039]

(2) +0.2 [+0.0078]
-0.2 [- 0.0078]

Class	(*)	
	N.m	[lb .ft]
2 x 4 x M16x2	295	[218]
	355	[262]

(*) The tightening torques are given for the indicated loads.

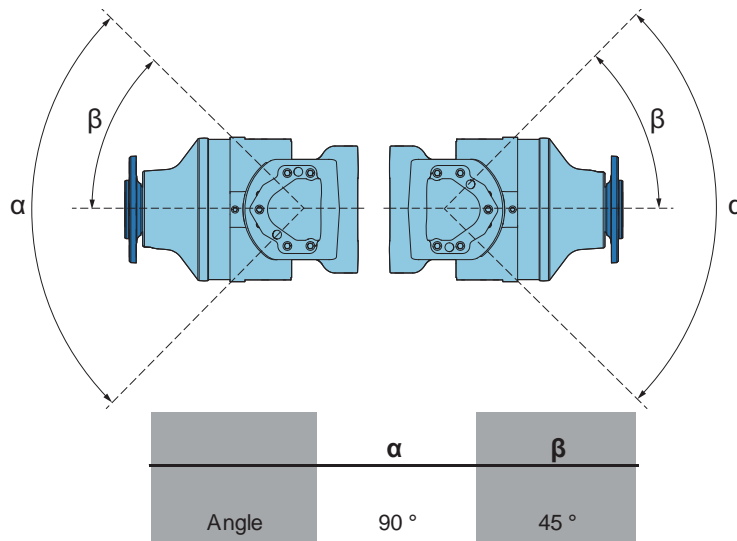


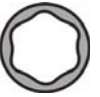
Pins are used to take tangential stress.



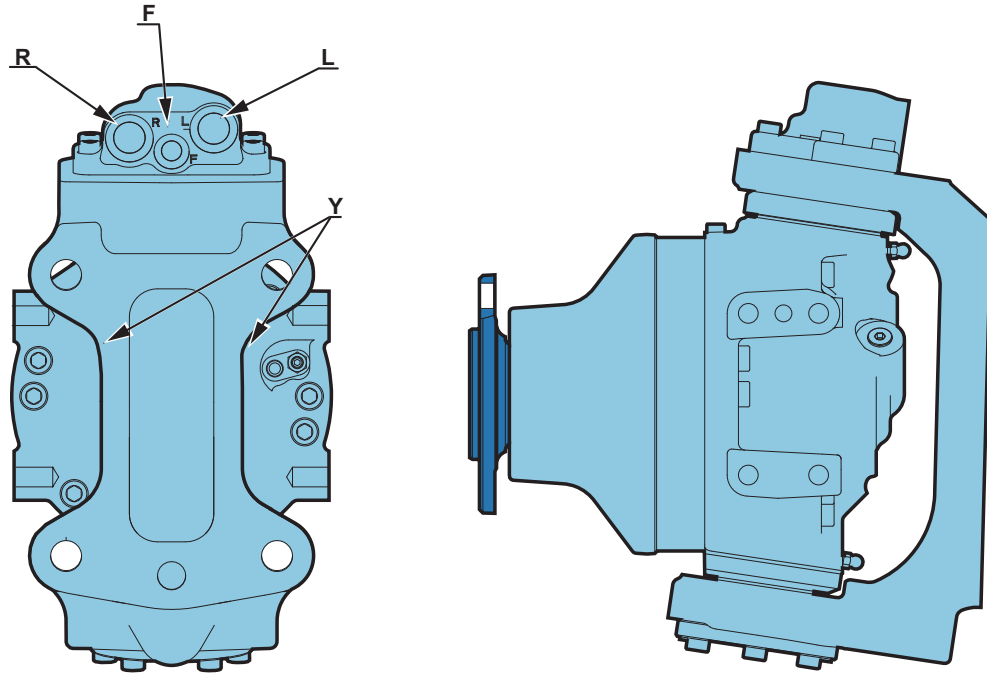
Poclain Hydraulics recommends spring type straight pins (slotted, heavy duty) following standard NF EN ISO 8752 or equivalent.

Steering angle





Hydraulic connections for flange motor



	C	D	F	P	S
	1	1 2 3	1 2 3	1 2 3 4	1 2 3 4 5 6
MG05	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MGE05	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C	Standard	Feeding	Drain	Pilot	
		R,L	F	Y	
4	ISO 9974-1	M22x1.5	M14x1.5	M14x1.5	
A	ISO 11926-1	7/8"-14 UNF-2B	9/16"-18 UNF-2B	9/16"-18 UNF-2B	

- 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.

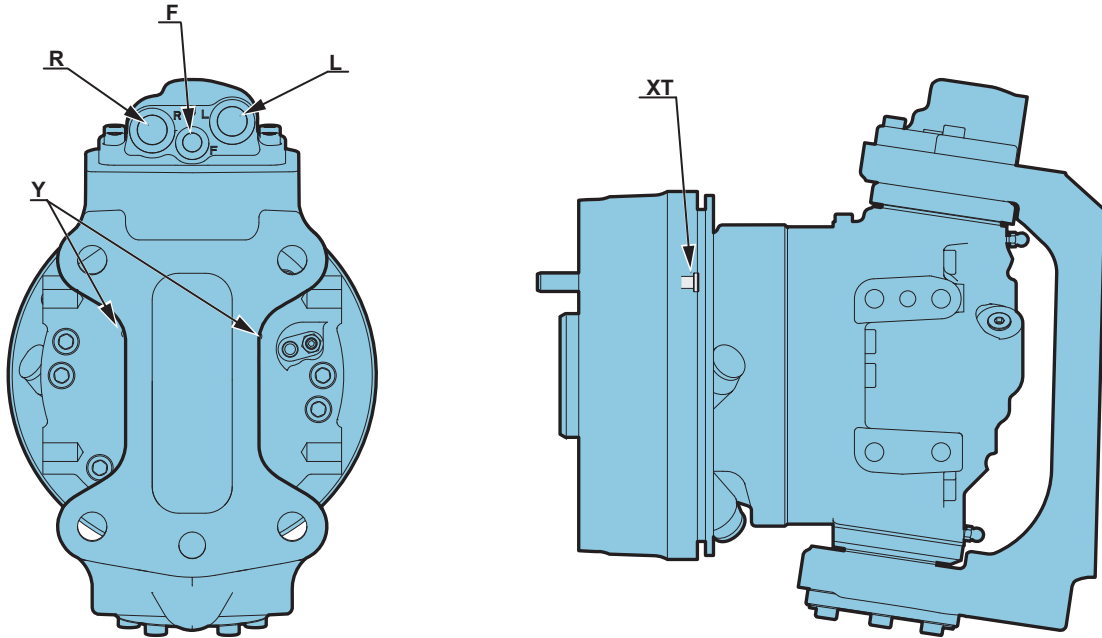
Modularity and Model code

Characteristics

Options



Hydraulic connections for drum brake motor



	C	D	F	P	S
	1	1 2 3	1 2 3	1 2 3 4	1 2 3 4 5 6
	MG05				
	MGE05				
	Standard	Feeding	Drain	Pilot	Drum brake
C		R,L	F	Y	XT
4	ISO 9974-1	M22x1.5	M14x1.5	M14x1.5	
A	ISO 11926-1	7/8"-14 UNF-2B	9/16"-18 UNF-2B	9/16"-18 UNF-2B	M10x1



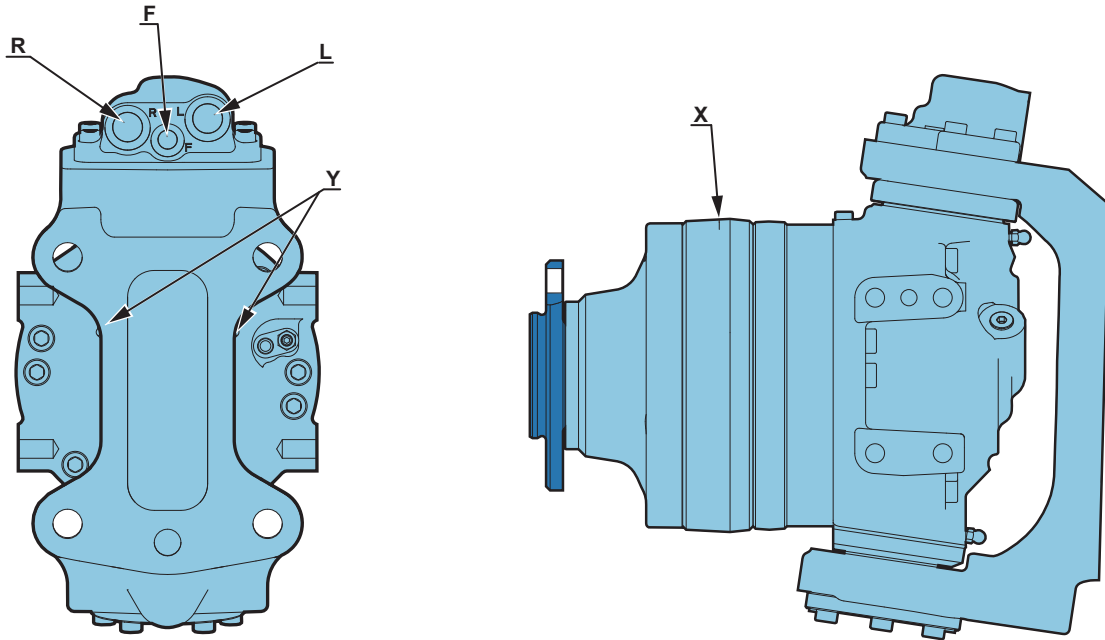
You are strongly advised to use the fluids specified in brochure "Installation guide" N° 801478197L.



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



Hydraulic connections for parking brake motor



	C	D	F	P	S
MG05	1	1 2 3	1 2 3	1 2 3 4	1 2 3 4 5 6
MGE05	1	1 2 3	1 2 3	1 2 3 4	1 2 3 4 5 6
C	Standard	Feeding	Drain	Pilot	Parking brake
		R,L	F	Y	X
4	ISO 9974-1	M22x1.5	M14x1.5	M14x1.5	M16x1.5
A	ISO 11926-1	7/8"-14 UNF-2B	9/16"-18 UNF-2B	9/16"-18 UNF-2B	9/16"-18 UNF-2B

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

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

Modularity and Model code

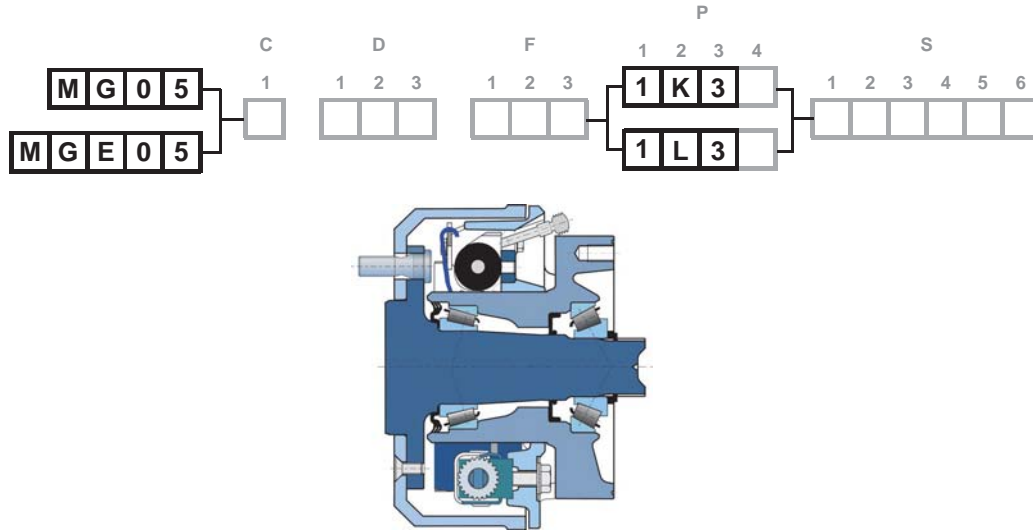
Characteristics

Options



Drum brake (250 x 60)

Diameter of brake pads : Ø 250 [9.84 dia.]
 Width of friction surface : 60 [2.36]



Brake pads

Asbestos free material	BERAL 1117
Compensation for wear	Automatic

Hydraulically controlled dynamic braking

Max. permissible continuous brake torque	3 000 N.m [2 213 lb.ft]
Pressure to obtain max. permissible continuous brake torque	76 bar [1 102 PSI]
Max. permissible brake torque	5 000 N.m [3 688 lb.ft]
Pressure to obtain max. permissible brake torque	120 bar [1 740 PSI]

Fluid

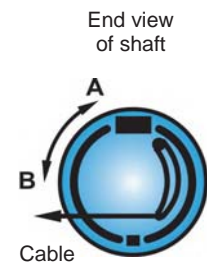
Mineral	Yes
DOT 3/DOT4/SAE J1703	Yes K

Max. volume required to bring pads into contact 2,8 cm³ [0,17 cu.in]

Mechanically controlled parking brake

Max. braking torque	5 000 N.m [3 688 lb.ft]
Max permissible force on the cable	1 370 N [308 lbf]
Force required to bring pads into contact	33 N [7 lbf]

Stroke required to bring pads into contact	A	10,6 mm [0,42 "]
	B	11,0 mm [0,43 "]
Max. stroke before automatic brake adjustment	A	14,0 mm [0,55 "]
	B	14,5 mm [0,57 "]



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

Control

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

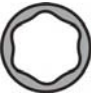


Do not use hydraulic and mechanical brake controls simultaneously.

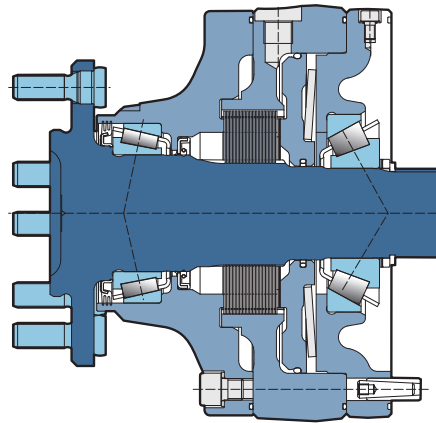


When making an encoding request, you must indicate the following information:

- 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.



Parking brake



Brake max. speed	250 rpm
Parking brake torque at 0 bars on housing (new brake)	4 500 Nm [3 320 lb.ft]
Dynamic emergency braking torque at 0 bars on housing (max. 10 uses of emergency brakes)	2 925 Nm [2 160 lb.ft]
Residual parking braking at 0 bars on housing (after emergency brake has been used)	3 375 Nm [2 490 lb.ft]
Max. theoretical energy dissipation	80 000 J
Min. release brake pressure	12 bar [174 PSI]
Max. release brake pressure	30 bar [435 PSI]
Oil capacity	320 cm ³ [19,5 cu.in]
Volume for brake release	24 cm ³ [1,5 cu.in]



Do not run-in the multidisc brakes.



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



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

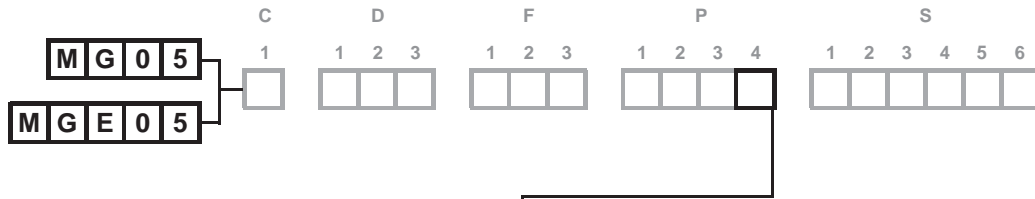
Modularity and Model code

Characteristics

Options



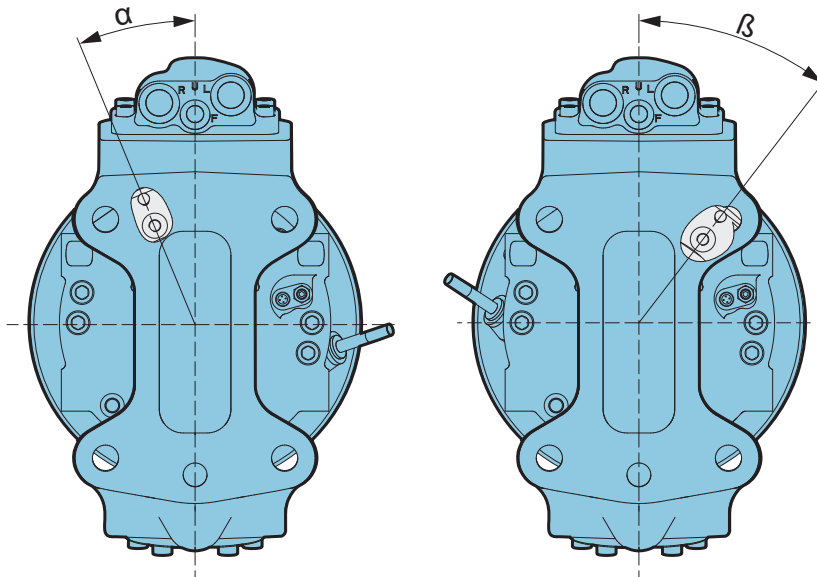
Left or right output of the cable



Drum brake (250 x 60)	
7	Without cable
8	Right-hand cable outlet
9	Left-hand cable outlet
A	Without cable
B	Right-hand cable outlet
C	Left-hand cable outlet

10 x M14 on
Ø140

6 x M18 on
Ø205



Cable output angle

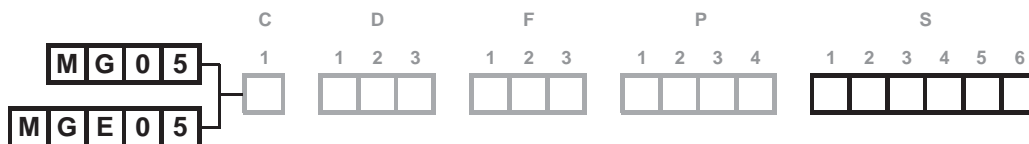
	Angle	Outgoing side
α	22,5°	Left
β	37,5°	Right



Loads are hold by the bearing support and the pivot. It is mandatory to check the compatibility of your load cases and the max. permissible loads for the bearing support and the pivot. For an accurate calculation, consult your Poclain Hydraulics application engineer.



OPTIONS

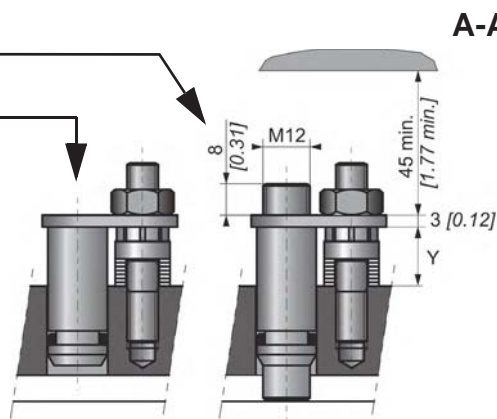
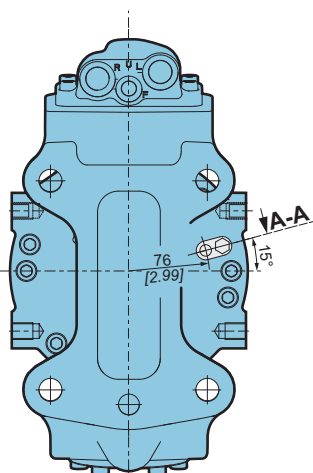


You can accumulate more than one optional part. Consult your Poclair Hydraulics sales engineer.

2 S Q 8 Installed speed sensor or predisposition

Designation

T4 Speed sensor installed	2
TR Speed sensor installed (direction of rotation)	S
TD speed sensor (two phase shifted frequencies)	Q
Predisposition for speed sensor	8



Max. length Y = 20,7 [0.81]
Standard number of pulses per revolution = 56



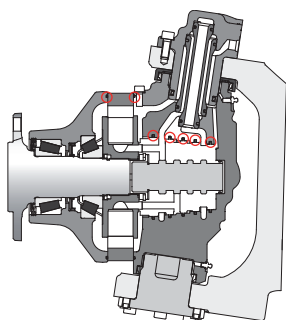
Look at the "Mobile Electronic" N° A01889D technical catalogue for the sensor specifications and its connection.



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

1 Fluorinated elastomer seals

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



Consult your Poclair Hydraulics sales engineer.

Modularity and Model code

Characteristics

Options

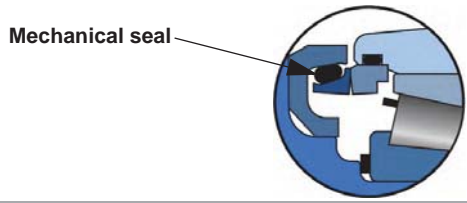


7 Diamond™

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.

C Abrasive environments

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



Consult your Poclain Hydraulics sales engineer.

G Special wheel rim mounting

Enables certain combinations different from the standard mountings defined on page 14.



Consult your Poclain Hydraulics application engineer.

H High efficiency

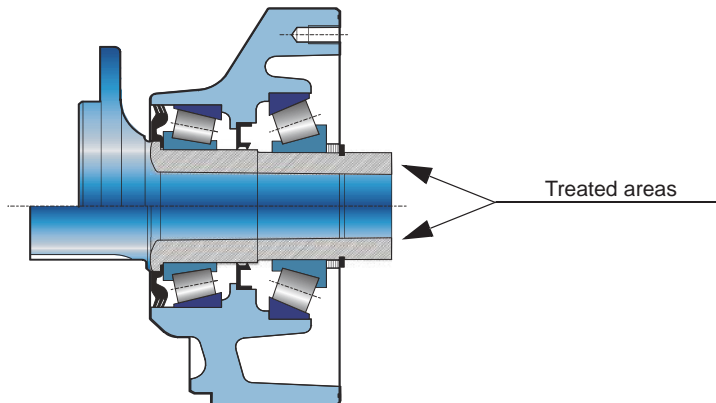
Reinforced piston sealing to improve volumetric efficiency.



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

J Surface heat treatment of the shaft

Heat treatment on the indicated bearing radius.

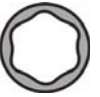


M High speed

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.



D Special paint or no paint

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



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

P Customized identification plate

Your part number can be engraved on the plate.



Consult your Poclain Hydraulics application engineer for other possibilities.

E Reinforced sealing

Reinforced seals.

Modularity and Model code

Characteristics

Options





**Modularity and
Model code**

Characteristics


Options





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