

MK18 MKE18

COMPACT MOTORS

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

PH
POCLAIN HYDRAULICS

Poclain

**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.**

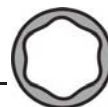
This document also includes essential operating instructions for the product and general information. These are indicated in the following way:

**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)





CONTENT

MODEL CODE

5

Model code

CHARACTERISTICS

7

Dimensions for standard 1-displacement motor	7
Dimensions for standard 2-displacement motor	7
Dimensions of symmetrical 2-displacement valving	
cover standard motor	8
Rotating fastening screw	8
Load curves	9
Efficiency	10
Chassis mounting	11
Hydraulic connections	12
Rear brake	13

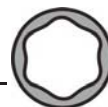
Characteristics

OPTIONS

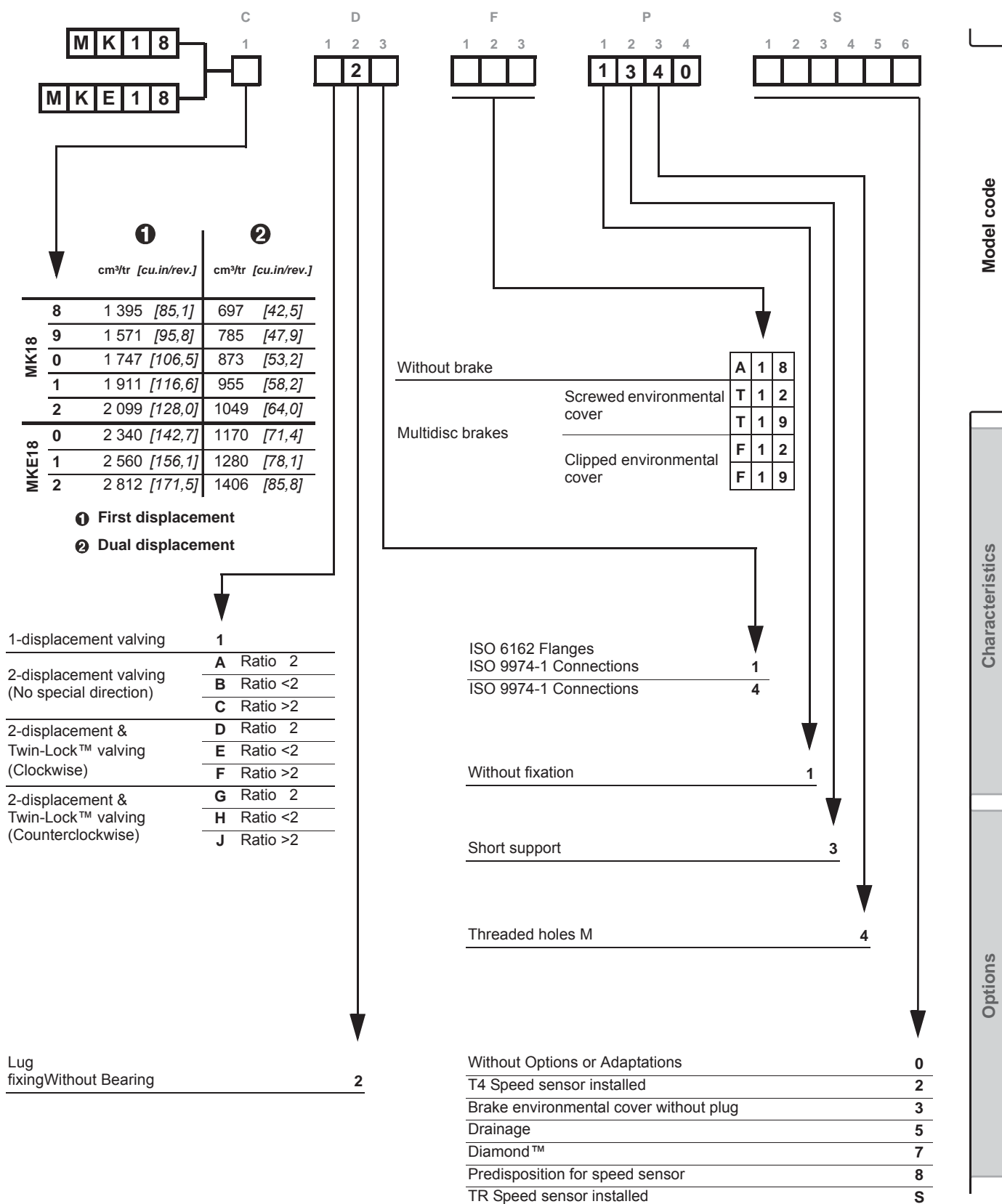
15

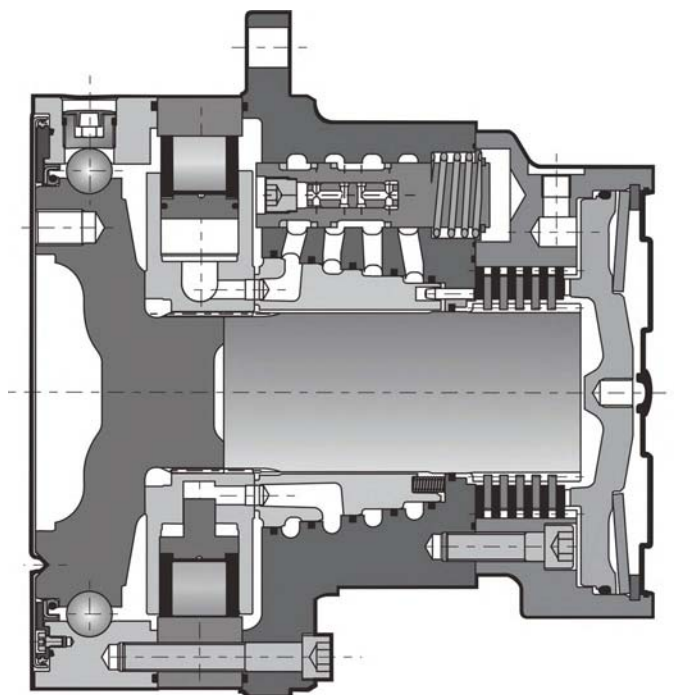
Options





MODEL CODE



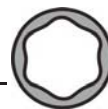


Motor Inertia 0.2 kg.m²

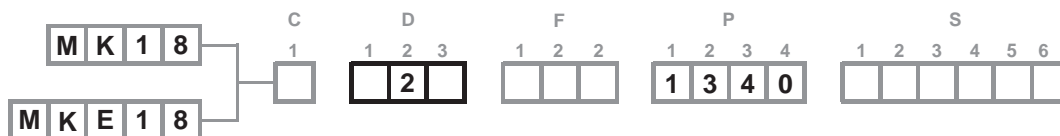
		Theoretical torque		Max.power			Max. speed		Max. pressure	
	①	②	①	①	②	②	①	②		
	cm³/tr [cu.in/rev.]	cm³/tr [cu.in/rev.]	at 100 bar Nm	kW [HP]	preferred kW [HP]	non-preferred kW [HP]	tr/min	RPM		
			at 1000 PSI [lb.ft]							
MK18	8	1 395 [85,1]	697 [42,5]	2 218 [1 128]	70 [94]	47 [63]	35 [47]	155	160	450 [6 530]
	9	1 571 [95,8]	785 [47,9]	2 498 [1 270]				140	155	
	0	1 747 [106,5]	873 [53,2]	2 778 [1 413]				125	150	
	1	1 911 [116,6]	955 [58,2]	3 038 [1 545]				115	135	
	2	2 099 [128,0]	1049 [64,0]	3 337 [1 697]				100	125	
MKE18	0	2 340 [142,7]	1170 [71,4]	3 721 [1 892]	70 [94]	47 [63]	35 [47]	90	110	400 [5 800]
	1	2 560 [156,1]	1280 [78,1]	4 070 [2 070]				85	100	
	2	2 812 [171,5]	1406 [85,8]	4 471 [2 274]				75	90	

1 First displacement

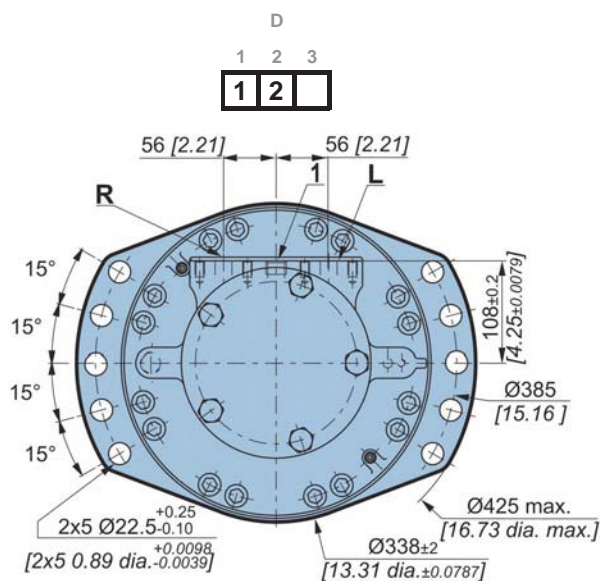
2 Second displacement



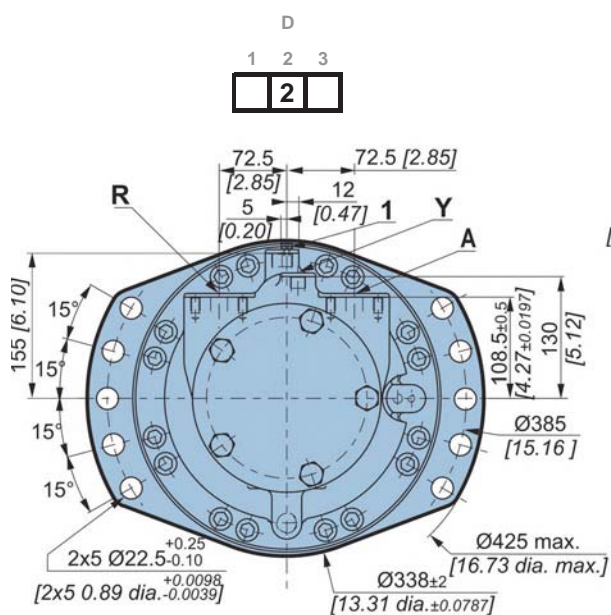
CHARACTERISTICS



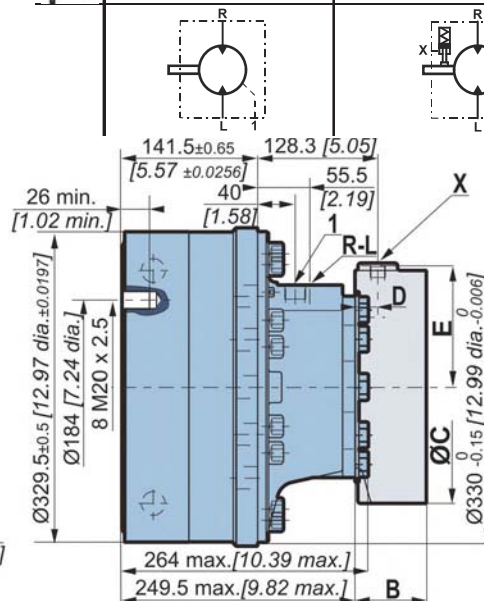
Dimensions for standard 1-displacement motor



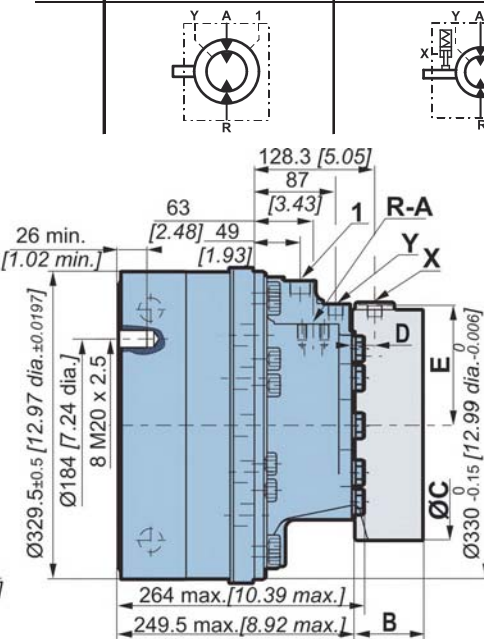
Dimensions for standard 2-displacement motor



95 kg [209 lb]	122,5 kg [270 lb]
2,50 L [150 cu.in.]	2,00 L [120 cu.in.]



105 kg [231 lb]	132,5 kg [292 lb]
2,50 L [150 cu.in.]	2,00 L [120 cu.in.]



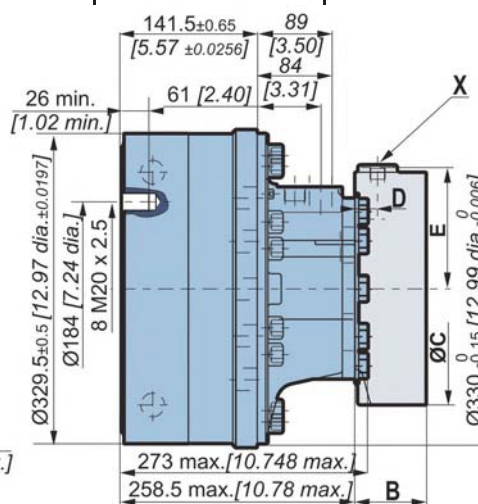
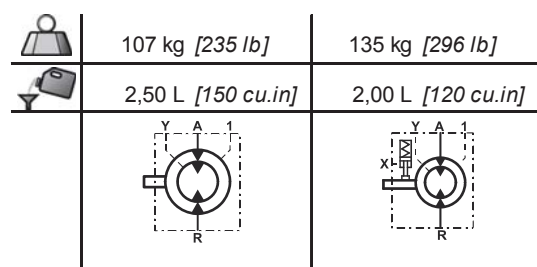
	F12	F19	T12	T19
B	76,7 [3,02]	98,5 [3,88]	92,5 [3,64]	114,3 [4,50]
ØC	247 [9,72]	250 [9,84]	273,6 [10,77]	273,6 [10,77]
D	25 [0,98]	45 [1,77]	24,5 [0,96]	45 [1,77]
E	128,5 [5,06]	121,5 [4,78]	128,5 [5,06]	128,5 [5,06]




Also see 'Brakes' section.





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



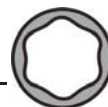
		F12	F19	T12	T19
B		76,7 [3,02]	98,5 [3,88]	92,5 [3,64]	114,3 [4,50]
ØC		247 [9,72]	250 [9,84]	273,6 [10,77]	273,6 [10,77]
D		25 [0,98]	45 [1,77]	24,5 [0,96]	45 [1,77]
E		128,5 [5,06]	121,5 [4,78]	128,5 [5,06]	128,5 [5,06]

Also see 'Brakes' section.

Rotating fastening screw

	Classe	N.m  [lb.ft]
8 x M20 x 2.5	10,9	580 [428]

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



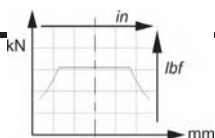
Load curves

Permissible radial loads

Test conditions :

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

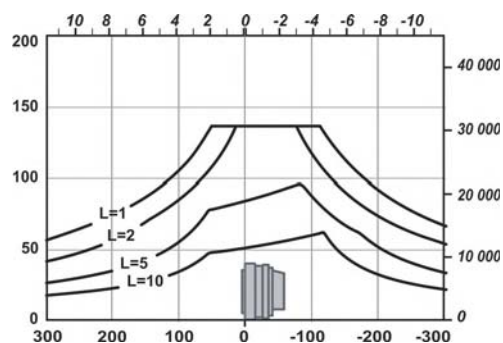
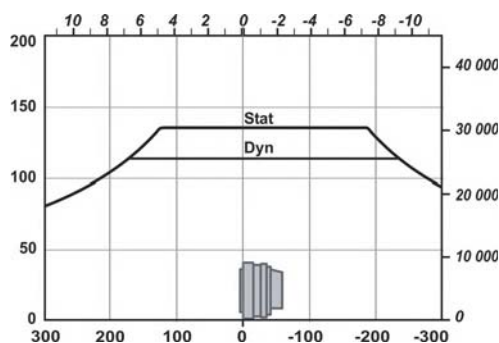
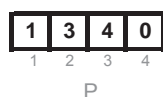
Dynamic : 0 tr/min [0 RPM], code 0 displacement, without axial load at max. torque



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.



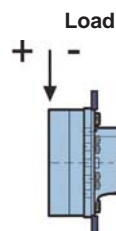
Model code

Characteristics

Options



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.

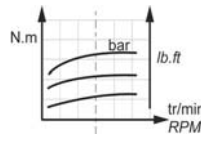
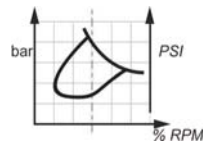




Efficiency

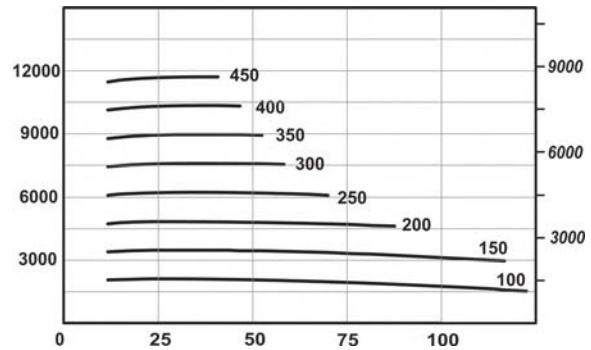
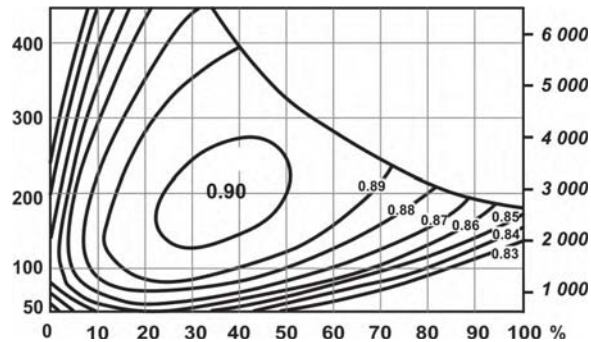
Overall efficiency

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

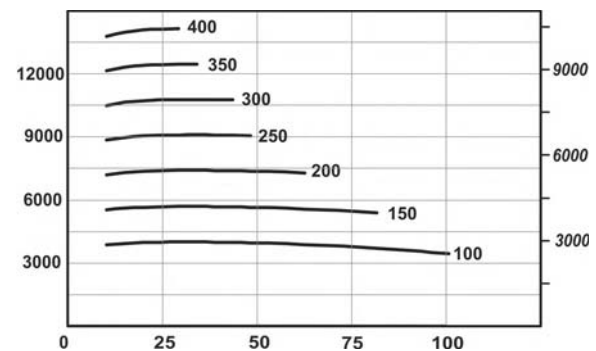
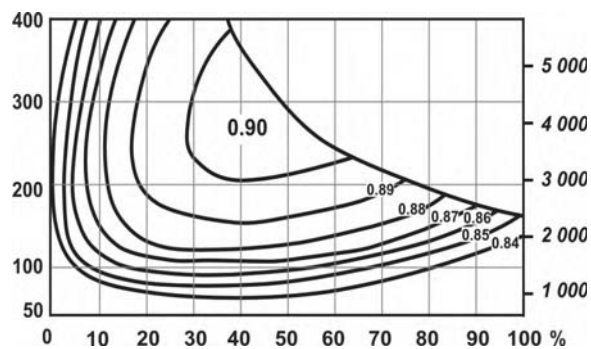


Actual output torque

MK18



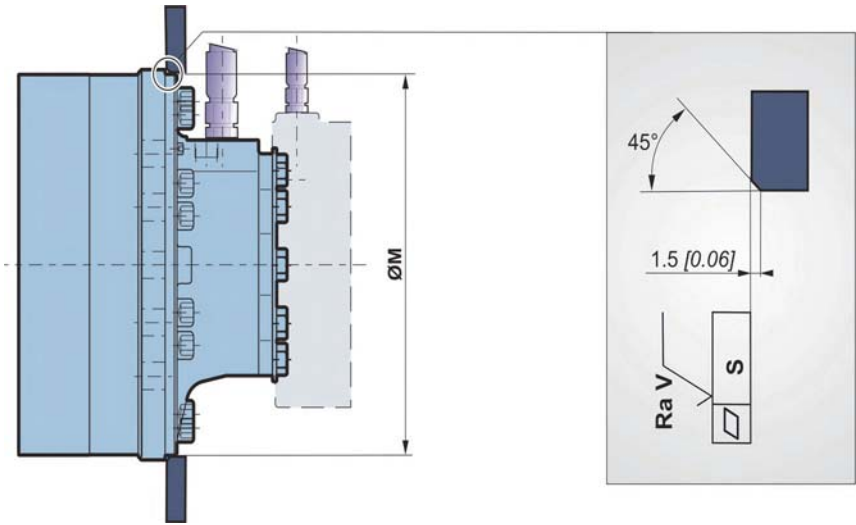
MKE18





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.

ØM ⁽¹⁾ mm [in]	S mm [in]	Ra V µm [µin]		Class of screw	 N.m [lb.ft]
330 [12,99]	0,2 [0,01]	12,5 [0,49]	2 x 5 x M20 x 2.5	8,8	410 [302]

(1) + 0.3 [+0.012]
+ 0.2 [+0.008]

Model code

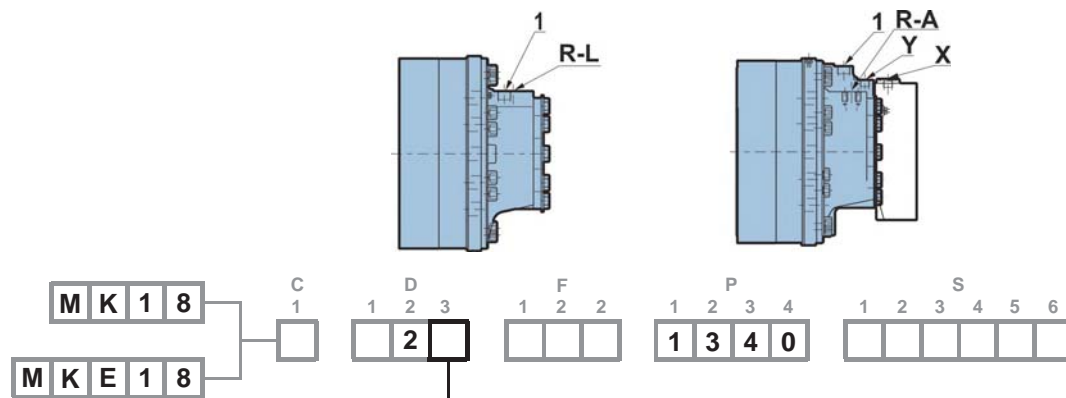
Characteristics

Options



Hydraulic connections

connections



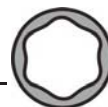
	Old standards	Standards	Power supply R, L, A	2 nd displacement control Y	Drainage 1,2	Control of brake X
1	ISO 6 162 DIN 3 852	ISO DP6162 ISO 9 974-1	DN19 PN400	M16 x 1.5	M22 x 1.5	M16 x 1.5
4	DIN 3 852 NFE 48 050	ISO 9 974-1	M27 x 2	M16 x 1.5	M22 x 1.5	M16 x 1.5



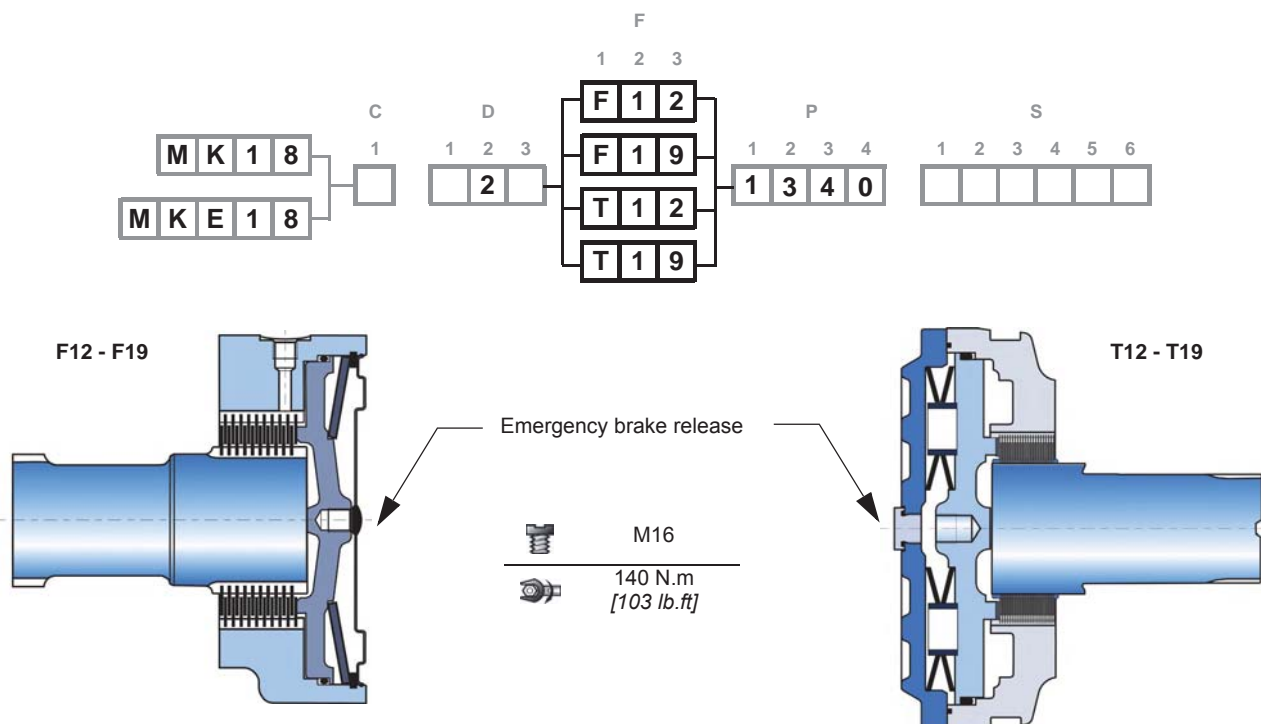
To find the connections' tightening torques, see the brochure "Installation guide" N° 801478197L.



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



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.



	F12 / T12	F19 / T19
Parking brake torque with 0 bars in the housing (new brake)	11 840 N.m [8 730 lb.ft]	18 600 N.m [13 720 lb.ft]
Emergency dynamic braking torque with 0 bars in the housing (gives a maximum of 10 emergency braking operations)	7 695 N.m [5 680 lb.ft]	12 800 N.m [9 440 lb.ft]
Residual parking torque at 0 bars in the housing*	8 880 N.m [6 550 lb.ft]	13 940 N.m [10 280 lb.ft]
Minimum brake release pressure	12 bar [174,0 PSI]	12 bar [174,0 PSI]
Maximum brake release pressure	30 bar [435,1 PSI]	30 bar [435,1 PSI]
Capacity	170 cm ³ [10,4 cu.in]	180 cm ³ [11,0 cu.in]
Brake release capacity	40 cm ³ [2,4 cu.in]	70 cm ³ [4,3 cu.in]

* After being used as emergency brake



Do not run-in the multidisc brakes.



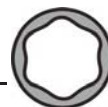
A functional check of the parking brake must be carried out each time it is used as an auxiliary brake (or emergency brake). For all vehicles capable of speeds over 25 km/hour, please contact your Poclain Hydraulics application engineer.

Model code

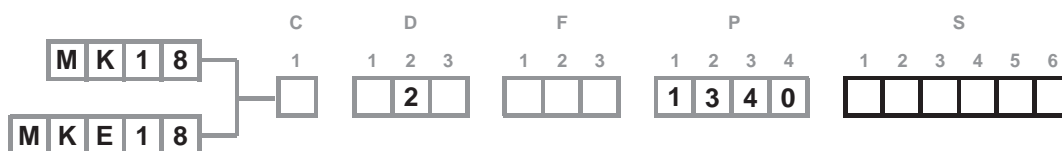
Characteristics

Options





OPTIONS



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

2 - S - 8 - Installed speed sensor or predisposition

Designation

T4 Speed sensor installed



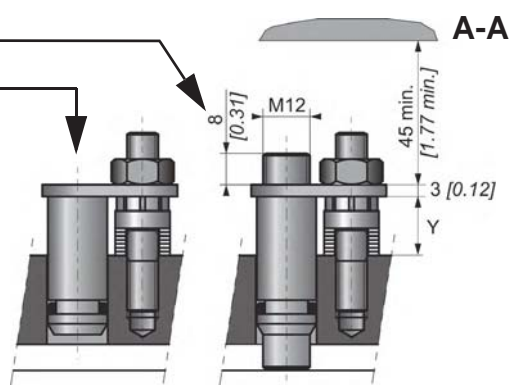
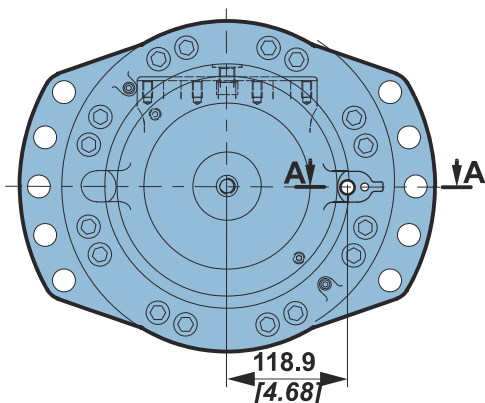
2

TR Speed sensor installed (direction of rotation)

S

Predisposition for speed sensor

8



Max. length Y= 18.1

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.

Model code

Characteristics

Options

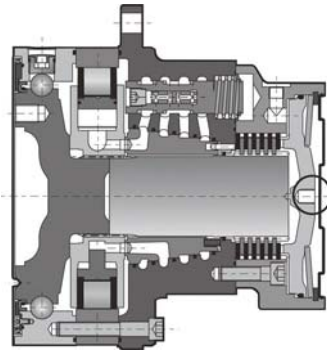


7 - Diamond™

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.

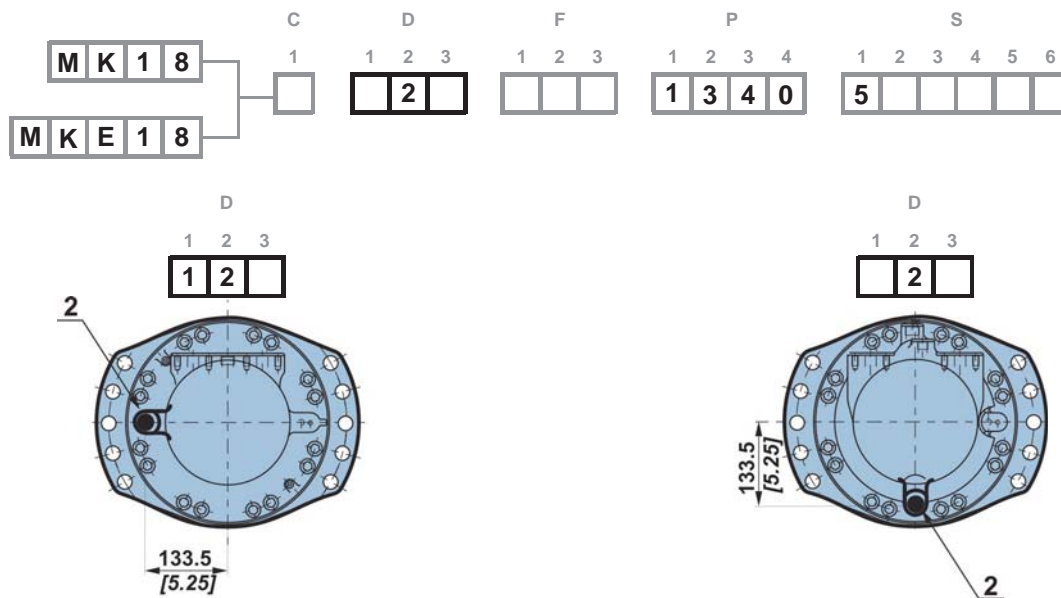
3 - Brake environmental cover without plug

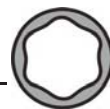
No plug or hole in the cover.
(see figure opposite)



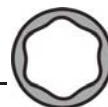
5 - Drainage

Additional drain in the cover.

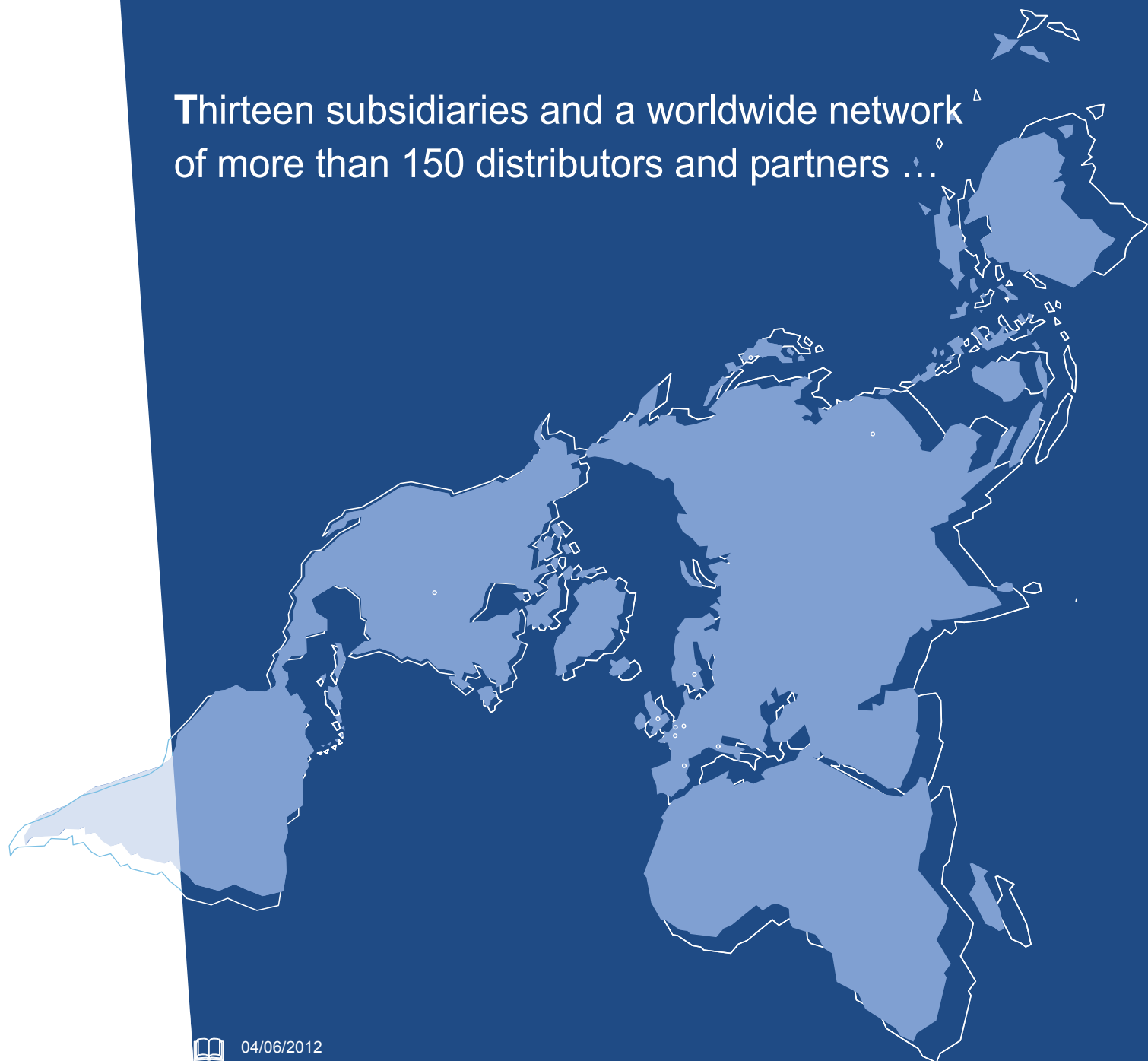








Thirteen subsidiaries and a worldwide network
of more than 150 distributors and partners ...



04/06/2012



801 578 141V



801 578 152H



801 578 163U



801 578 174G



801 578 185T



A09219V



Poclain Hydraulics reserves the right to make any modifications it deems necessary to the products described in this document without prior notification. The information contained in this document must be confirmed by Poclain Hydraulics before any order is submitted.

Illustrations are not binding.

The Poclain Hydraulics brand is the property of Poclain Hydraulics S.A.



More information on

