



# MW MOTORS



## MW24. HYDRAULIC MOTORS.

### CHARACTERISTICS

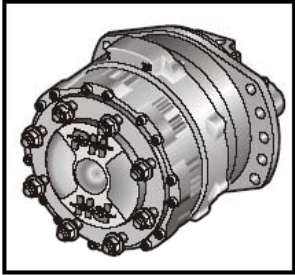
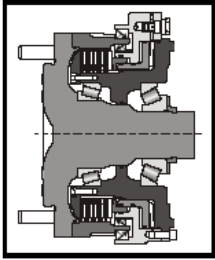
		4-displacement motor				
		①	②	③	④	
L2	Displacement	cm <sup>3</sup> /tr [cu.in/rev.]	2 857 [174.2]	1 516 [92.5]	934 [57.0]	467 [28.5]
	Th. torque at 100 bar	Nm	4 547	2 413	1 486	743
	Th. torque at 1000 PSI	[lb.ft]	[2 310]	[1 226]	[755]	[378]
	Max.speed	tr/min [RPM]	63	118	192	250
H2	Displacement	cm <sup>3</sup> /tr [cu.in/rev.]	2 587 [157.8]	1 423 [86.8]	934 [57.0]	467 [28.5]
	Th. torque at 100 bar	Nm	4 117	2 265	1 486	743
	Th. torque at 1000 PSI	[lb.ft]	[2 092]	[1 150]	[755]	[378]
	Max.speed	tr/min [RPM]	69	126	192	250
92	Displacement	cm <sup>3</sup> /tr [cu.in/rev.]	2 506 [152.8]	1 253 [76.4]	934 [57.0]	467 [28.5]
	Th. torque at 100 bar	Nm	3 988	1 994	1 486	743
	Th. torque at 1000 PSI	[lb.ft]	[2 026]	[1 013]	[755]	[378]
	Max.speed	tr/min [RPM]	72	143	192	250
09	Displacement	cm <sup>3</sup> /tr [cu.in/rev.]	2 449 [149.4]	1 224 [74.7]	702 [42.8]	351 [21.4]
	Th. torque at 100 bar	Nm	3 898	1 948	1 117	559
	Th. torque at 1000 PSI	[lb.ft]	[1 960]	[990]	[568]	[284]
	Max.speed	tr/min [RPM]	73	147	250	250
Q1	Displacement	cm <sup>3</sup> /tr [cu.in/rev.]	2 252 [137.3]	1 301 [79.3]	856 [52.2]	428 [26.1]
	Th. torque at 100 bar	Nm	3 584	2 071	1 362	681
	Th. torque at 1000 PSI	[lb.ft]	[1 821]	[1 052]	[692]	[346]
	Max.speed	tr/min [RPM]	80	138	210	250
61	Displacement	cm <sup>3</sup> /tr [cu.in/rev.]	1 947 [118.7]	973 [59.3]	856 [52.2]	428 [26.1]
	Th. torque at 100 bar	Nm	3 099	1 549	1 362	681
	Th. torque at 1000 PSI	[lb.ft]	[1 574]	[787]	[692]	[346]
	Max.speed	tr/min [RPM]	92	185	210	250
Max.power	kW	A	90	60	50	40
	[HP]		[121]	[81]	[67]	[54]
Max.power	kW	R	90	45	50	30
	[HP]		[121]	[60]	[67]	[40]
Max. pressure	bar [PSI]	450 [6 530]				



Contact your Poclair Hydraulics application engineer to find out how the displacement shift from the third to the second displacement is controlled and to find out transmission capabilities in terms of displacement shift when the vehicle is in motion.

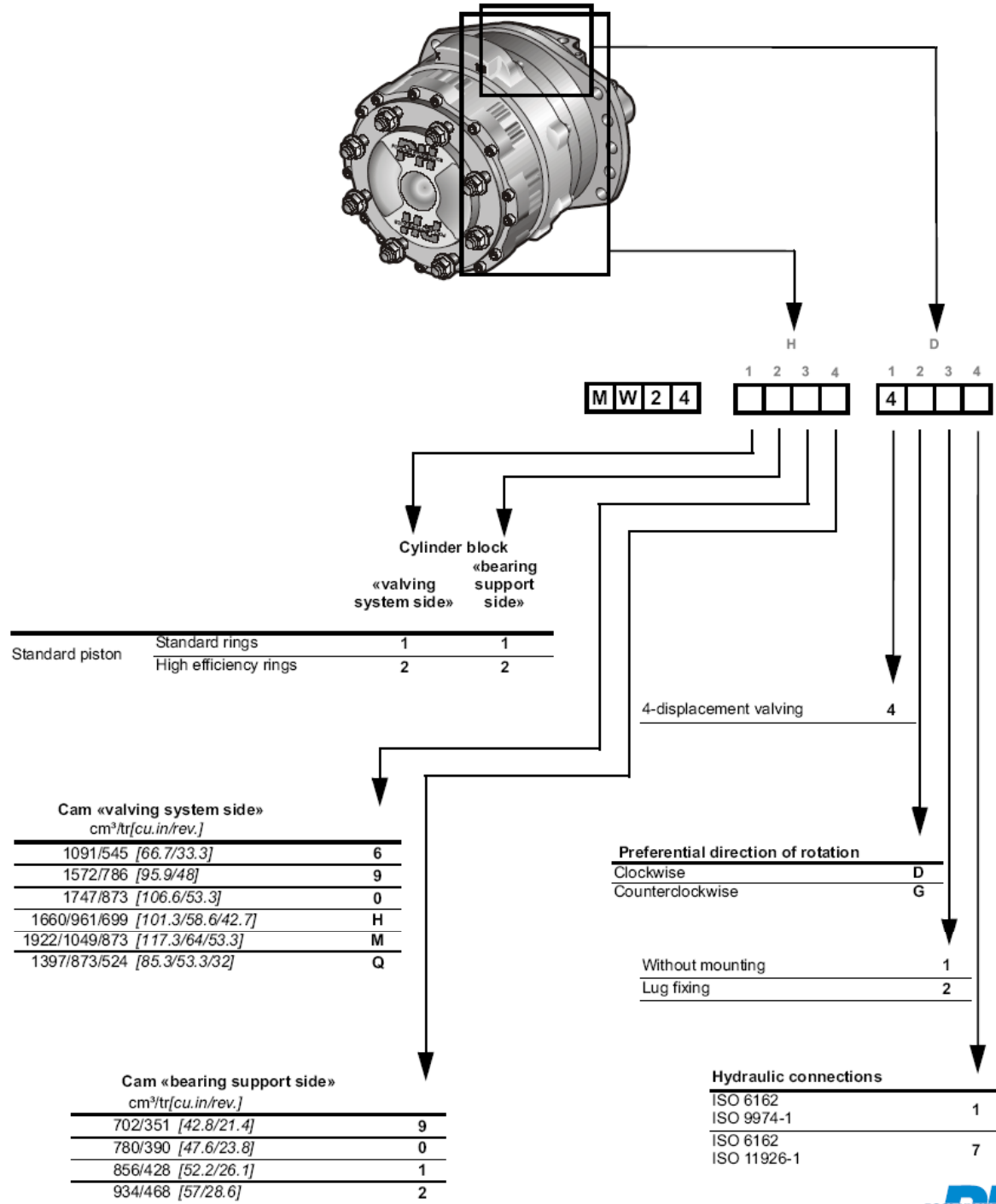


CONTENT

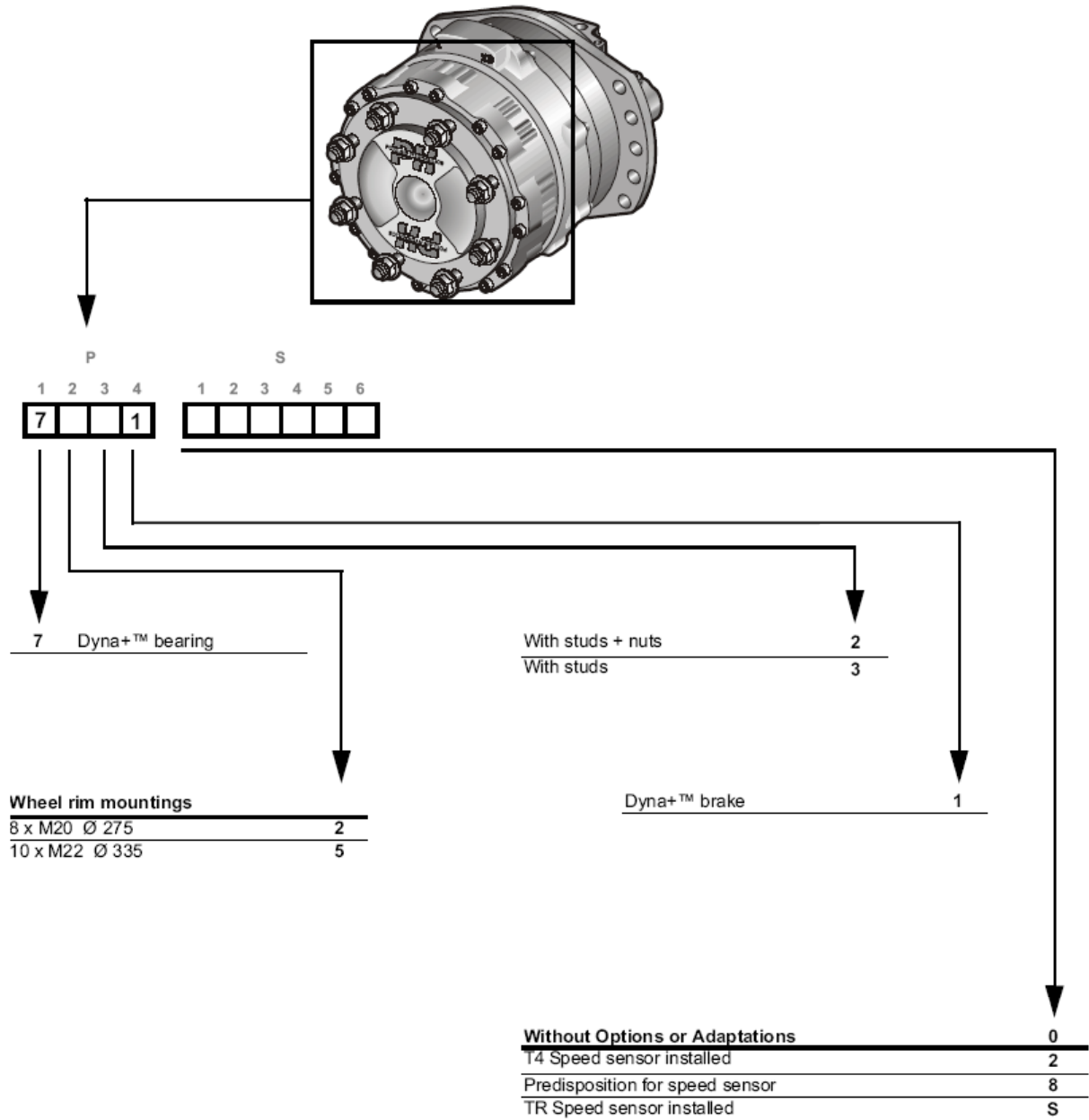
	<b>Model code</b>	<b>5</b>	Model code
	<b>Wheel motor</b> Dimensions for standard motor Load curves Wheel rim mountings Hydraulic connections	<b>7</b> 7 8 9 10	Motor
	<b>Brakes</b> DYNA+™ Brake	<b>11</b> 11	Brake
	<b>Options</b>	<b>13</b>	Options



MODEL



CODE



**Methodology :**

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

This document includes important comments concerning safety. They are indicated in the following way:



**Safety comment.**

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



**Essential instructions.**



**General information .**



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



**Weight of component without oil.**



**Volume of oil.**



**Units.**



**Tightening torque.**



**Screws.**



**Information intended for Poclairn-Hydraulics personnel.**

The views in this document are created using metric standards.

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

**Associated documents**

**Document type**

**N°**

Generic installation

801478197L

**Poclairn Hydraulics Patents**

**Document type**

**N°**

MW motor

FR2796992

MW motor

US6347572

Dyna +™ brake

FR2796886

Dyna +™ brake

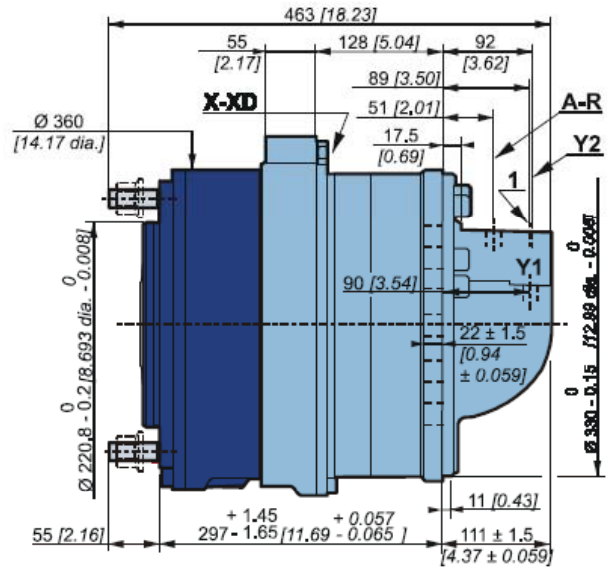
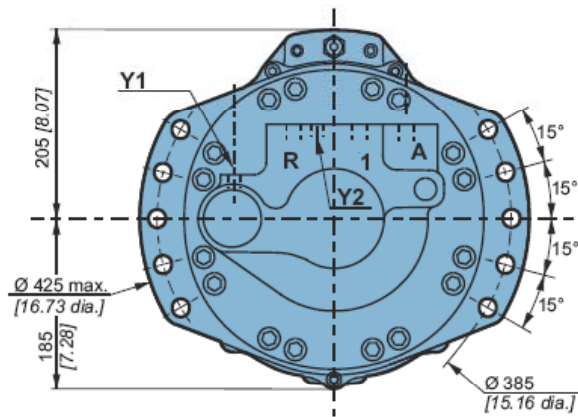
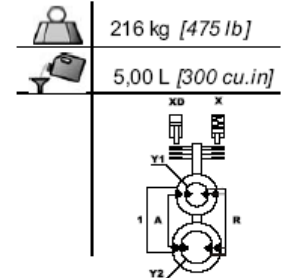
US6357558

Dyna +™ brake

FR2797008

WHEEL MOTOR

Dimensions for standard motor



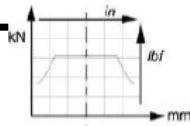
**Load curves**

**Permissible radial loads**

Test conditions :

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

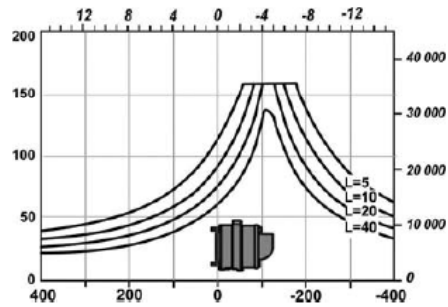
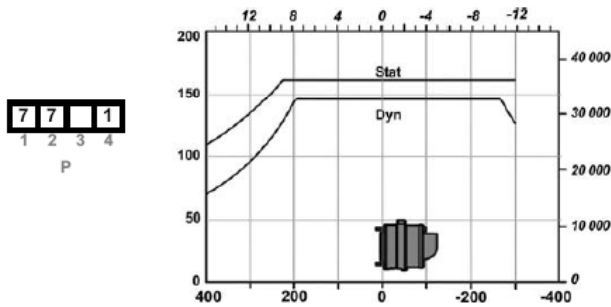
Dynamic : 0 tr/min [0 RPM], code 0 displacement, without axial load at max. torque



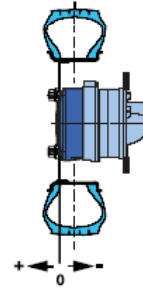
**Service life of bearings**

Test conditions :

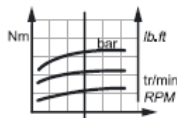
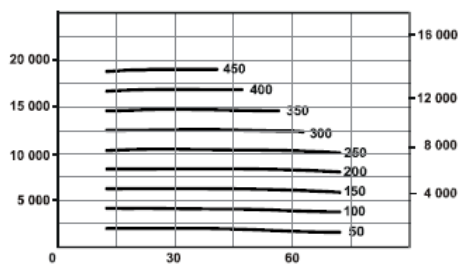
L : Millions B10 revolutions at 150 bars (average pressure), with 25 cSt fluid, code 0 displacement, without axial load.



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



**Actual output torque**



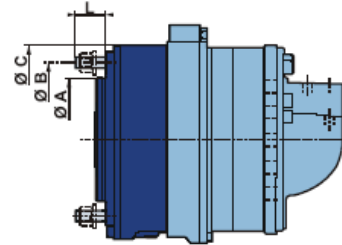
The starting torque is taken to be approximately 85% of the first value for available pressure. For a precise calculation, consult your Poclairn Hydraulics application engineer.



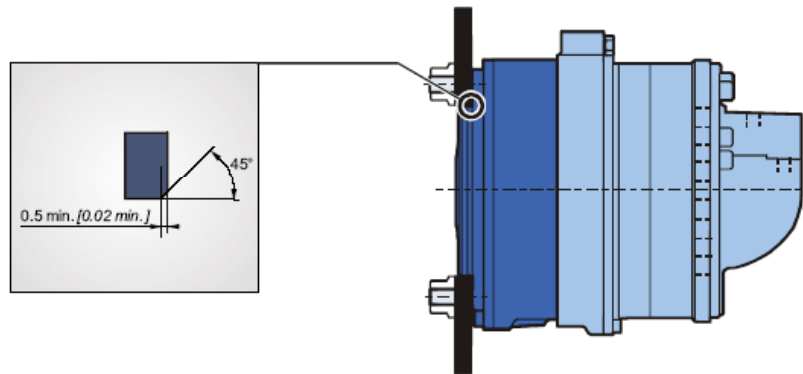


Wheel rim mountings

	A (1)	B	C		L
	Ø 220,8 [8,69 dia.]	Ø 275 [10,83 dia.]	Ø 360 [14,17 dia.]	8 x M20x1.5	55 [2,17]
	Ø 220,8 [8,69 dia.]	Ø 335,0 [13,19 dia.]	Ø 360,0 [14,17 dia.]	10 x M22x1.5	55 [2,17]



(1)+ 0 [+ 0]  
- 0.2 [- 0.008]



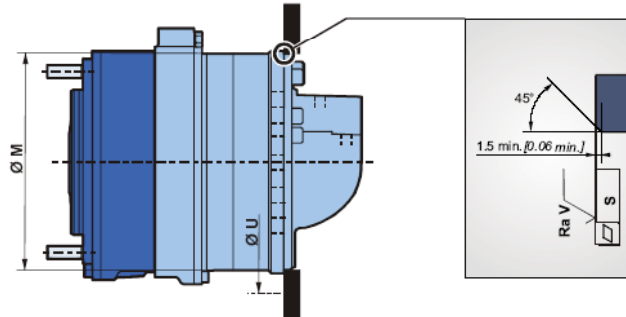
Studs

		C min.	C max.	D	Class	(*)	
						(1)	(2)
Studs	M20x1.5	3,5 [0,14]	29 [1,14]	25 [0,98]	12,9	600 [442,5]	770 [567,9]

(\*) The tightening torques are given for the indicated loads.  
 (1) Wheel rim : Suggested tightening torque for wheel rim mountings (Re steel disc > 240 N/mm<sup>2</sup> />34 800 PSI).  
 (2) Standard : Suggested tightening torque in other cases (Re steel flange 360 > N/mm<sup>2</sup> />52 215 PSI)



**Chassis mountings**



Take care over the immediate environment of the connections.

ØM (1)	ØU	S	Ra V		Class	(*)
329 [12,95]	385 [15,16]	0,2 [0,008]	12,5µm [0,49µin]	2 x 5 x M20	12,9	690 N.m [508,9 lb.ft]

(1) ± 0.05 [± 0.0020]

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



For other chassis mounting possibilities, please consult your Poclain Hydraulics engineer.

**Hydraulic connections**



Old standards	Standards	Power supply A	Case drain 1	Return Power supply R	1 <sup>st</sup> or 3 <sup>rd</sup> displacement control Y1-Y3	Control of parking break X	Control of service break XD
1	ISO 6162 DIN 3852	ISO DP6162 ISO 9974-1	DN 19 FN400	M22 x 1.5	DN 19 FN400	M16 x 1.5	M16 x 1.5
7	SAEJ514	ISO DP6162 ISO 11926-1	DN 19 FN400	7/8" 14 UNF	3/4" 16 UNF	3/4" 16 UNF	9/16" 18 UNF



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

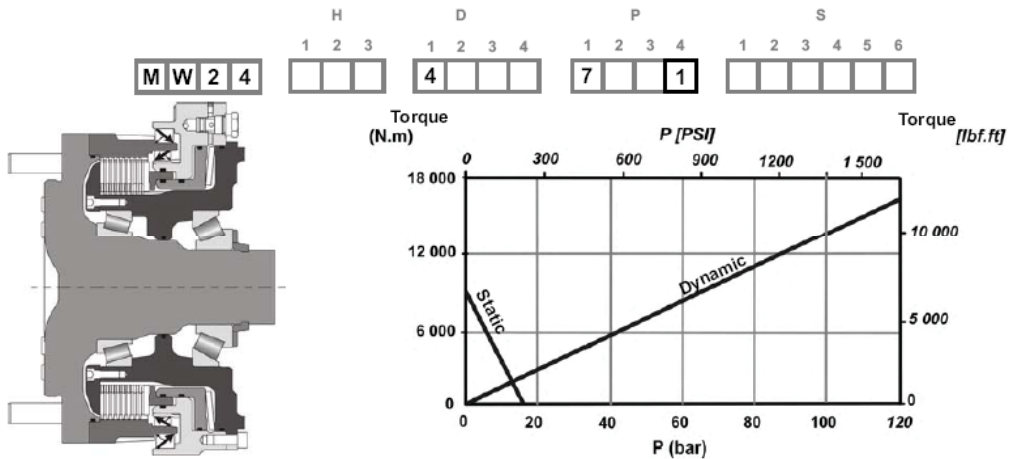


You are strongly advised to use the fluids specified in brochure "Installation guide" N° 801478197L.



## BRAKES

## DYNA+™ Brake



## Brake operation

This multi-disk brake operates in two distinct ways:

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

**C 7 7 3 1**

## Hydraulically controlled dynamic braking

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

## Hydraulically controlled parking brake

Parking brake torque (new brakes)	9 580 Nm [7 070 lb.ft]
Parking brake torque (after 500 dynamic braking)	7 660 Nm [5 650 lb.ft]
Parking brake torque mini. requiring renovation	6 830 Nm [5 040 lb.ft]
Max. release brake pressure	30 bar [435 PSI]
Volume for brake release	86 cm <sup>3</sup> [5,25 cu.in]
Inlet conditions for brake release in towing (Flow rate of 2 L/min)	14 bar [203 PSI]
Emergency dynamical braking torque at 0 bar to the case	8 000 Nm [5 900 lb.ft]
Max. energy dissipation	882 kJ

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



Brake release pressure vented.



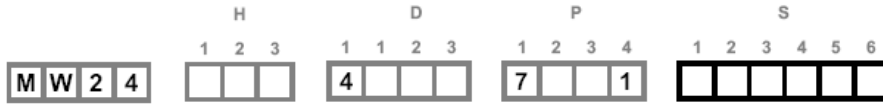
Do not use both dynamic and parking brake simultaneously.



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



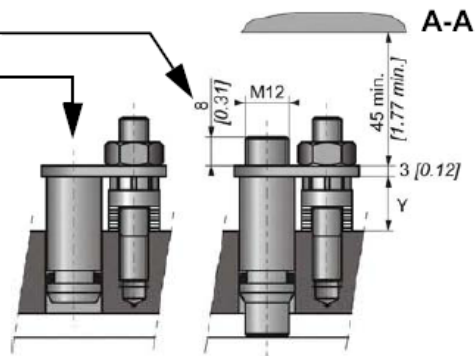
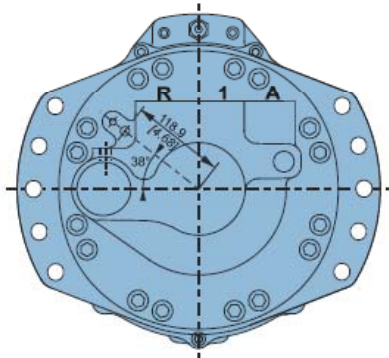
OPTIONS



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

2 - S - 8 - Installed speed sensor or predisposition

<b>Designation</b>	<b>C</b>
T4 Speed sensor installed	2
TR Speed sensor installed (direction of rotation)	S
Predisposition for speed sensor	8



Max. length Y= 13.4  
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.