

- *Налягане до 350 бара*
- *Дебит до 300 л/мин.*



Клапани - обратни, предпазни, регулатори на дебит и налягане.

Делители на дебит серия –
DTP, VP, TVD, FDP, VVP, RT, NOV, BVZV

КЛАДИМАР



Високомоментни CAM-LOBE мотори различни модификации и приложения серии MS, MK, MG, MD, MP, ML, MZ, MF, MW, CDM

- *максимално налягане 450 бара*
- *1 и 2 скорости.*
- *с вградена спирачна и без спирачна система.*
- *максимална мощност 240 kW*
- *максимален въртящ момент до 74 kN.m.*
- *директно монтиране в колелото на машината.*
- *Високо КПД и работоспособност.*
- *нисък шум при работа.*
- *системи за движение ADDIDRIVE и CreepDrive*



Хидравлични помпи серия PM, P90, PL

- *с променлив работен обем от 7-250 см³/об.*
- *затворен и отворен кръг на работа*
- *максимално налягане 480 бара.*
- *помпи с 2,3,4 и 6 независими изхода.*
- *Високо КПД и изнosoустойчивост.*
- *нисък шум на работа*



Намират широко приложение в управлението и движението на пътностроителни и селскостопански машини.

Машини за горска и минна промишленост, оборудване за летища и пристанища.



Edition 2012

Motors
Pumps
Valves
Electronics

PH
POGLAIN HYDRAULICS





WORLDWIDE LEADER OF HYDROSTATIQUE TRANSMISSIONS

Expertises

Poclain Hydraulics designs, manufactures, and sells:

- high torque, cam lobe and radial piston motors,
- hydrostatic transmissions and their related engineering services for mobile equipment.

Fields of application

- **Construction:** road building and maintenance, earth moving, finishing, drilling and trenching, recycling, mining and tunnel boring machines...
- **Agriculture:** combine and other specialty harvesters, sprayers, forestry equipment...
- **Handling:** forklift trucks, aerial work platforms, conveyors, aircraft loading equipment...
- **Industry:** process, paper, foundry, food...
- **Marines:** fishing, harbour...
- **Transportation:** people, material, heavy duty, on-highway...
- **Environment:** road maintenance, (sweeping, snow removal), parks tending, city maintenance, refuse trucks, recycling, energy...

Human resources

- **more than 1500** people throughout the world,
- more than 65% out of France,
- more than 4% of payroll dedicated to training.

Production and logistics

- **8 production units:**
 - France – Verberie (60) ISO 9001 & ISO 14001 certified and Marnaz (74),
 - USA – Sturtevant, QS 9000 and ISO 9001 certified,
 - Czech Republic – Brno, ISO 9001 & ISO 14001 certified,
 - Slovénia – Žiri, ISO 9001, ISO 14001 & OHSAS 18001 certified,
 - India – Puduchery,
 - Italy – Gaggio di Piano.
 - China - Shanghai.

Sales

- **16 sales subsidiaries:** Brazil, China, Czech Republic, England, France, Germany, Holland, India, Italy, Japan, Korea, Singapore, Slovenia, Spain, Sweden and United States,
- more than **150 distributors** worldwide,
- 6 remote offices: China, Finland, Nevada, Oregon, Oklahoma, Russia.

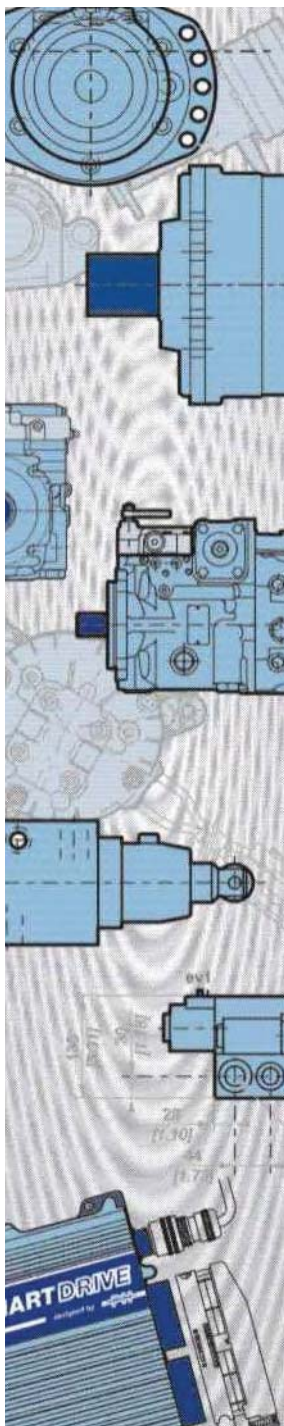
R&D and Innovation

- Over **6% of sales** invested in R&D.
- **330 patents** registered worldwide.

More information

- www.poclain-hydraulics.com

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Services

Motors

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Mobile electronics

The views in this document are created using metric standards



Contact your Poclain Hydraulics representative to know our conditions of sales.

SERVICES

Working with Poclain Hydraulics Hydraulics brings peace of mind. Whoever you are and the markets you serve, we provide you with 45 years experience in hydrostatic transmissions. We offer our support at each stage of your application's life, from the drawing board to after sales, respecting quality standards that match your expectancies.

Relying on our services will allow you to:

- ✓ Optimise your transmission's performance
- ✓ Reduce time-to-market
- ✓ Reduce design risks
- ✓ Ensure a top-quality aftersales service

Product Customisation

Poclain Hydraulics designs tailored solutions to match your application's requirements.

Our resources:

- Design Department consisting of over 100 engineers
- Test lab equipped with more than 30 characteristics and endurance benches

Product customisation respects a strict and transparent step-by-step process:

- Feasibility
- Prototyping
- Testing and performance validation
- Production launch



Field Support

Working hand in hand with our customers allows us to supply custom solutions without compromising on reliability. Our technicians intervene on location to test and analyse your transmission in real life conditions.

Poclain Hydraulics' field support team is at your service to carry out:

- Prototype machine start-up and transmission optimisation.
- Troubleshooting and problem-solving for incidents relating to the transmission.

Resources:

- Worldwide network of Poclain Hydraulics expert technicians.
- Transmission Optimisation Center in France with proving grounds and test benches.
- Standard data capture and analysis tools.



Spare parts supply

- Global inventory of parts for rapid delivery
- Fully tested genuine parts
- Parts packaged individually or in kits
- Express delivery option
- Spare parts list and exploded view supplied upon request
- OEM remanufacturing program support



Repair

Poclain Hydraulics provides you with expert after-sales technicians to inspect and repair the components that are returned.

Resources:

- Poclain Hydraulics repair centers in France, the United States, Germany, Great Britain, Italy, the Netherlands and the Czech Republic.
- Global network of qualified distributor repair centers.



Training

Poclain Hydraulics transfers its expertise to better sell, apply and repair their products.

Resources:

- Poclain Hydraulics Training Centers de formation in France and the U.S.
- Training material and manuals to transfer knowledge within your organisation.

Format:

- Standard or custom courses from two to four days, in Poclain Hydraulics facilities or on site.



Customised literature

- Copy-open pdf file
- Custom maintenance manual : Poclain Hydraulics provides you with a document that explains how to maintain and service the specific Poclain Hydraulics component(s) equipping your application.



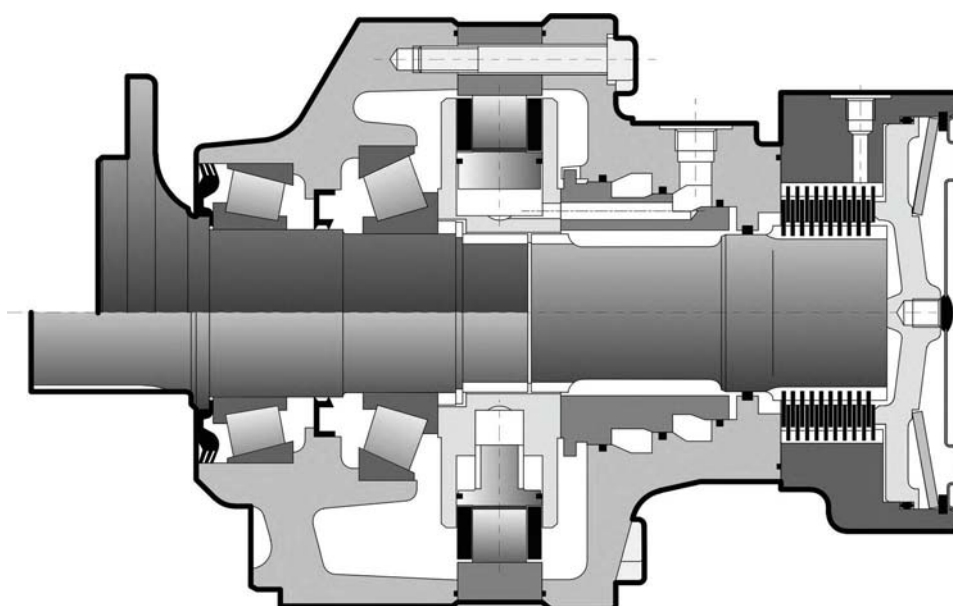
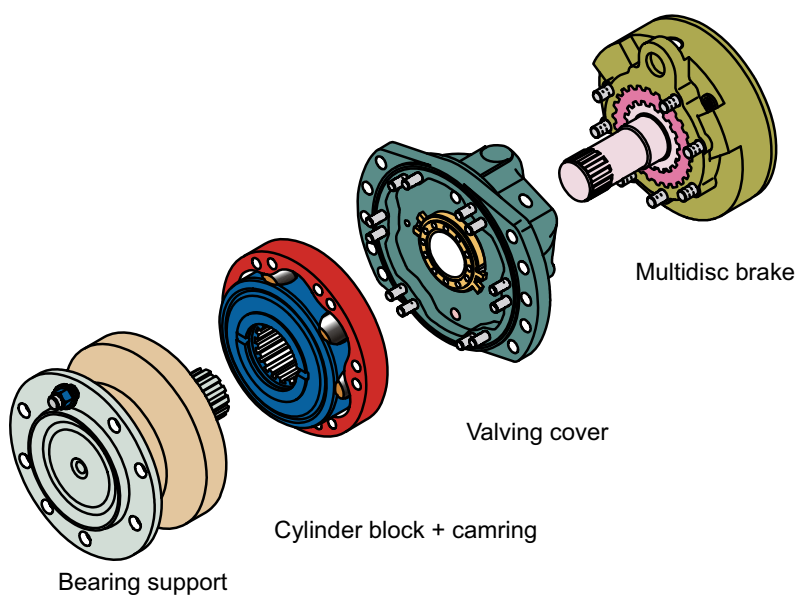
HIGH TORQUE CAM-LOBE MOTORS

- ✓ High pressure
- ✓ Radial piston cam-lobe motor
- ✓ Direct drive
- ✓ High efficiency
- ✓ Very low noise

MS wheel motor**MG motor****MK motor****MD motor****MP motor****ML motor****MZ motor****MF motor****MW motor****CDM motor**

MS MOTORS

- ✓ From 172 to 15 000 cm³/tr [10.5 to 915 cu.in/rev.]
- ✓ Up to 450 bar pressure [6 530 PSI]
- ✓ Up to 510 RPM
- ✓ Single or multiple displacement
- ✓ With or without brake



MS FRAMESIZES

	Displacement	Max. torque	Max. pressure	Max. speed	Max. power
Metric unitsM	cm ³ /tr	N.m	bar	tr/min	kW
[US units]	[cu.in/rev]	[lbf.ft]	[PSI]	[RPM]	[HP]

	MS 02				MSE 02			MSE 03
Displacement	172 [10.5]	213 [13.0]	235 [14.3]	255 [15.6]	332 [20.2]	364 [22.2]	398 [24.3]	500 [30.5]
Max. torque (th.)*	1200 [885]	1500 [1 106]	1 680 [1 239]	1 800 [1 227]	2 100 [1 548]	2 300 [1 696]	2 500 [1 843]	2 780 [2 050]
Max. pressure	450 [6 526]				400 [5 800]			350 [5 080]
Max. speed	590	475	430	395	340	310	285	183
Max. power	18 [24]				22 [29.5]			22 [29.5]

	MS 05					MSE 05				
Displacement	260 [15.9]	376 [22.9]	468 [28.5]	514 [31.3]	560 [34.2]	530 [32.3]	625 [38.1]	688 [42.0]	750 [45.7]	820 [50.0]
Max. torque (th.)*	1 850 [1 364]	2 700 [1 991]	3 350 [2 470]	3 680 [2 714]	4 000 [2 950]	3 360 [2 478]	4 000 [2 950]	4 380 [3 230]	4 750 [3 503]	5 200 [3 835]
Max. pressure	450 [6 526]					400 [5 800]				
Max. speed	265	250	240	220	200	200	190	175	160	145
Max. power	29 [39]									

	MS 08						MSE 08		
Displacement	467 [28.5]	627 [38.2]	702 [42.8]	780 [47.6]	857 [52.3]	934 [57.0]	1 043 [63.6]	1 146 [69.9]	1 248 [76.1]
Max. torque (th.)*	3 330 [2 456]	4 480 [3 304]	5 000 [3 687]	5 580 [4 115]	6 120 [4 513]	6 630 [4 890]	6 680 [4 926]	7 280 [5 369]	7 950 [5 863]
Max. pressure	450 [6 526]						400 [5 800]		
Max. speed	210	210	185	170	155	140	130	110	105
Max. power	41 [55]								

	MS 11						MSE 11			
Displacement	730 [44.5]	837 [51.0]	943 [57.5]	1 048 [63.9]	1 147 [70.0]	1 259 [76.8]	1 263 [77.0]	1 404 [85.7]	1 536 [93.6]	1 687 [102.9]
Max. torque (th.)*	5 220 [3 850]	6 000 [4 425]	6 750 [4 978]	7 500 [5 531]	8 200 [6 048]	9 000 [6 638]	8 040 [5 930]	8 920 [6 579]	9 800 [7 228]	10 700 [7 891]
Max. pressure	450 [6 526]						400 [5 800]			
Max. speed	200	195	190	185	180	170	170	155	140	130
Max. power	50 [67]									

MS FRAMESIZES

	MS 18						MSE 18		
Displacement	1 091 [66.5]	1 395 [85.1]	1 572 [95.9]	1 747 [106.6]	1 911 [116.6]	2 099 [128.1]	2 340 [142.8]	2 560 [156.2]	2 812 [171.6]
Max. torque (th.)*	7 800 [5 752]	10 000 [7 375]	11 250 [8 297]	12 500 [9 219]	13 650 [10 067]	15 000 [11 063]	14 900 [10 989]	16 300 [12 022]	17 900 [13 202]
Max. pressure	450 [6 526]						400 [5 800]		
Max. speed	172	164	160	155	150	145	140	125	115
Max. power	70 [94]								

	MS 25				MS 35			
Displacement	2 004 [122.3]	2 498 [152.4]	2 752 [167.9]	3 006 [183.4]	2 439 [148.8]	3 143 [191.8]	3 494 [213.2]	4 198 [256.2]
Max. torque (th.)*	14 300 [10 547]	17 850 [13 165]	19 700 [14 529]	21 500 [15 857]	17 450 [12 870]	22 500 [16 595]	25 000 [18 439]	30 000 [22 126]
Max. pressure	450 [6 526]				450 [6 526]			
Max. speed	145	137	125	115	140	140	130	110
Max. power	90 [120.7]				110 [147.5]			

	MS 50				MS 83			MS 125		
Displacement	3 500 [213.6]	4 008 [244.6]	4 997 [304.9]	6 011 [366.8]	6 679 [407.6]	8 328 [508.2]	10 019 [611.4]	10 000 [610.2]	12 500 [762.8]	15 000 [915.3]
Max. torque (th.)*	25 050 [18 476]	28 700 [21 168]	35 750 [26 367]	43 000 [31 715]	47 800 [35 255]	60 000 [44 253]	71 500 [52 735]	71 500 [52 735]	77 000 [56 792]	77 000 [56 792]
Max. pressure	450 [6 526]				450 [6 526]			450 [6 526]	380 [5 510]	320 [4 640]
Max. speed	148	138	111	92	70	60	50	50	40	30
Max. power	140 [188]				200 [268]			240 [322]		

* (th.) : theoretical torque = $\frac{1}{24\pi} \times \text{displacement (cuin/rev)} \times \text{max. pressure (PSI)}$

All values refer to single displacement versions.
For other values, please consult the Technical Catalogs, on our web site:

 <http://www.poclain-hydraulics.com>

MS	02	03	05	08	11	18	25	35	50	83	125
 Reference technical documentation	801478186Z	801478187A	801478188B	801478189C	801478190D	801478191E	801478192F	801478193G	801478194H	801478195J	801478196K

MS BRAKES

Multidisc brake

- ✓ Failsafe: spring applied, hydraulically released
- ✓ Fully enclosed
- ✓ Choice of brake torques per motor framesize
- ✓ Can be used in an emergency to stop the vehicle



Brake	Parking N.m [lbf.ft]	Emergency N.m [lbf.ft]	02	03	05	08	11	18	25	35	50	83	125
F02	1 400 [1 032]	910 [671]	●										
F03	2 500 [1 843]	1 625 [1 198]	●	●									
FH3	3 000 [2 212]	1 950 [1 438]		●									
F04	4 220 [3 112]	2 740 [2 020]			●								
F05	3 060 [2 256]	1 990 [1 467]			●								
F08	5 620 [4 145]	3 650 [2 692]				●							
F09	9 000 [6 638]	5 850 [4 314]				●							
F12	11 840 [8 732]	7 700 [5 679]					●	●					
F19	18 600 [13 718]	12 800 [9 440]						●					
F26	26 730 [19 715]	17 375 [12 815]							●				
P35	20 500 [15 120]	20 500 [15 120]							●	●	●		
F42	25 000 [18 439]	16 250 [11 985]							●	●	●		
F50	30 000 [22 126]	22 200 [16 373]							●	●	●	●	●
F83	42 000 [30 977]	27 300 [20 135]									●	●	●

Drum brake

- ✓ Automotive service brake
- ✓ Enclosed in heavy duty bearing support
- ✓ Applied mechanically or by pressure



Brake size	Parking Emergency Service N.m [lbf.ft]	02	03	05	08	11	18	25	35	50	83	125
203 x 60	2 290 [1 689]	●										
250 x 40	2 400 [1 770]	●										
250 x 60	5 000 [3 687]			●								
270 x 60	6 000 [4 425]				●							
315 x 80	12 000 [8 850]				●	●						
350 x 60	11 000 [8 113]						●		●			
432 x 102	27 000 [19 914]						●	●	●	●		

OPTIONS

MS		02	03	05	08	11	18	25	35	50	83	125
Speed sensor	2	●	●	●	●	●	●	●	●	●	●	●
Mechanical free-wheeling	4			●	●							
Case flushing (additional drain port)	5	●	●	●	●	●	●	◆	◆	◆	◆	◆
Industrial bearing support	6	●		●	●	●	●	●	●	●	●	●
Diamond™ extra-long life	7	●	●	●	●	●	●	●	●	●	●	●
Chassis mounting on cam-ring side	9	●		●	●	●	●	●	●	●		
Hollow shaft	A			●	●	●	●	●	●	●	●	●
Drain on the bearing support	B	●		●	●	●	●	●	●	●	●	●
Reinforced external seals (duo-cone)	C			●	●	●	●	●	◆	◆	◆	◆
High pressure shaft sealing	E	●	●	●	●	●	●	●	●	●	●	●
High volumetric efficiency	H	●	●	●	●	●	●		●			
Surface heat treatment of the shaft	J	●	●	●	●	●	●	●	●			◆
Higher speed	M	●		●	●	●	●	●	●	●		
Soft shift	T	●		●	●	●	●	●	●	●		

Commercial code	Available	Standard
	●	◆

For details, please go to the Technical Catalogs.

Services

Motors

Pumps

Circuit components

Mobile electronics

MS BEARING SUPPORTS

- ✓ Double row of tapered bearings to handle high radial and axial loads
- ✓ Standard splines and wheel flange configurations available

Bearing support type



Wheel motor



Splined shaft motor

MS		02	03	05	08	11	18	25	35	50	83	125
Wheel motor		•	•	•	•	•	•	•	•	•	•	•
Splined shaft		•		•	•	•	•	•	•	•	•	•
Wheel motor, short version				•	•	•	•	•	•	•	•	•
Keyed shaft	Pinion mounting			•	•						•	
Female shaft	For shrink disc coupling								•	•	•	•
Pinion shaft	Dual sprockets for skid-steer loader	•		•								

MS VALVING COVERS



- ✓ Single or dual-displacements
- ✓ Choice of wheel and chassis mounts
- ✓ Choice of hose connections
- ✓ Twin-Lock™

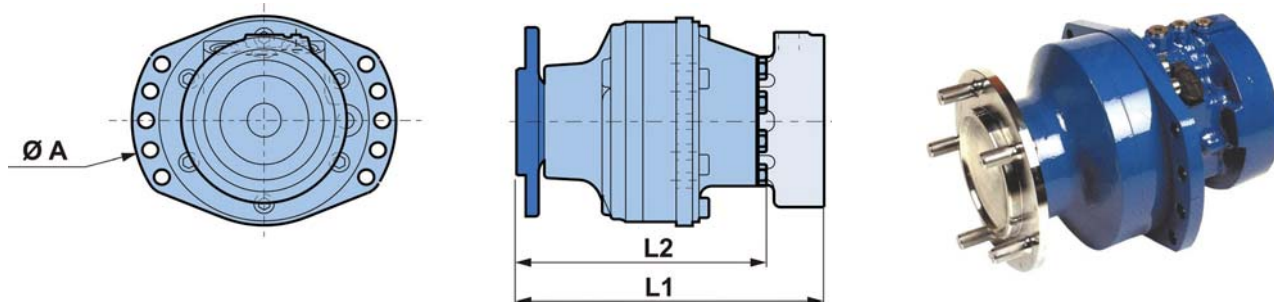
Valving types

MS		02	03	05	08	11	18	25	35	50	83	125
1-displacement		•	•	•	•	•	•	•	•	•	•	•
2-displacement		•	•	•	•	•	•	•	•	•		
2-displacement symmetrical valving*							•	•	•	•	•	•
Exchange	Hot oil shuttle	•		•	•	•	•					
Twin-Lock™	Hydraulic traction control	•	•	•	•	•	•	•	•	•		
Chassis mountings	On the valving cover	•	•	•	•	•	•	•	•	•		
	Without (chassis fixation on the bearing support)	•		•	•	•	•	•	•	•	•	•

*: no preferential direction of rotation in small displacement

MS DIMENSIONS

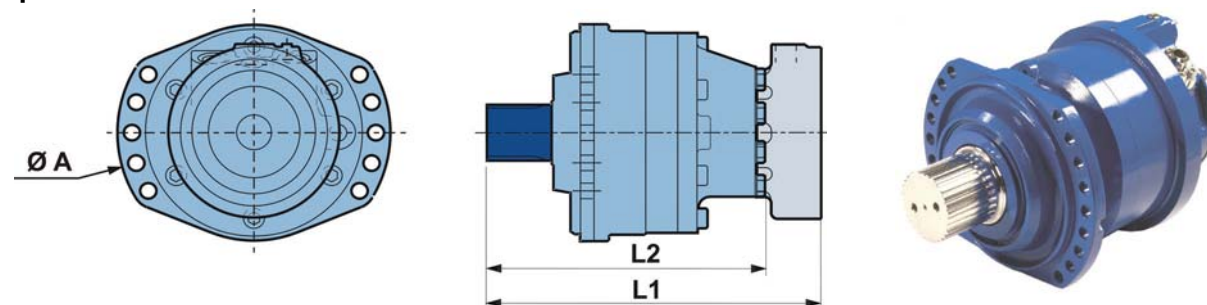
Wheel motor



MS		02	03	05	08	11	18	25	35	50	83	125
A dia.	mm	238	238	300	335	375	425	485	485	485	555.5	555.5
	[in]	[9.37]	[9.37]	[11.81]	[13.19]	[14.76]	[16.73]	[19.09]	[19.09]	[19.09]	[21.87]	[21.87]
L1*	mm	310	296	335	367	412	476	565	591	713	797	865
	[in]	[12.20]	[11.65]	[13.18]	[14.45]	[16.22]	[18.74]	[22.24]	[23.27]	[28.07]	[31.38]	[34.05]
L2	mm	218	250	280	311	349	395	455	500	590	665	732
	[in]	[8.58]	[9.84]	[11.02]	[12.24]	[13.74]	[15.55]	[17.91]	[19.68]	[23.23]	[26.18]	[28.82]
Weight*	kg	31	32	50	79	112	150	270	269	415	503	563
	[lb]	[68]	[70]	[110]	[174]	[247]	[330]	[596]	[593]	[915]	[1 109]	[1 241]

*: 1C wheel motor with multidisc brake corresponding to the motor size

Splined shaft



MS		02	03	05	08	11	18	25	35	50	83	125
A dia.	mm	238	N.A	300	335	375	425	485	425	395	565	565
	[in]	[9.37]	N.A	[11.81]	[13.19]	[14.76]	[16.73]	[19.09]	[16.73]	[15.55]	[22.24]	[22.24]
L1	mm	310	N.A	366	392	443	517	635	670	810	890	957
	[in]	[12.20]	N.A	[14.41]	[15.43]	[17.44]	[20.35]	[25]	[26.38]	[31.89]	[35.04]	[37.68]
L2*	mm	255	N.A	308	336	380	432	525	580	678	757	825
	[in]	[10.04]	N.A	[12.13]	[13.23]	[14.96]	[17.00]	[20.67]	[22.83]	[26.70]	[29.80]	[32.48]
Weight*	kg	21	N.A	41	62	88	112	195	188	265	410	470
	[lb]	[46.3]	N.A	[90.4]	[136.6]	[194]	[247]	[430]	[414.5]	[584]	[904]	[1 036]

*: 1C splined shaft motor, without brake

For details, please go to the Technical Catalogs.

MK MOTORS



- ✓ From 270 to 5 625 cm³/tr [16.5 to 343 cu.in/rev.]
- ✓ Ultra-slim motor
- ✓ Large diameter 4 contact roller bearing
- ✓ Reinforced shaft sealing
- ✓ Hollow shaft available

	Displacement	Max. torque	Max. pressure	Max. speed	Max. power
Metric unitsM	cm ³ /tr	N.m	bar	tr/min	kW
[US units]	[cu.in/rev]	[lbf.ft]	[PSI]	[RPM]	[HP]

	MK 04			MKD 04		
Displacement	272 [16.6]	408 [24.9]		456 [27.8]	502 [30.6]	545 [33.2]
Max. torque (th.)	1 730 [1 275]	2 600 [1 917]		2 610 [1 925]	2 873 [2 119]	3 120 [2 301]
Max. pressure	400 [5 800]			400 [5 800]		
Max. speedMax. speed	150	100		90	82	75
Max. power	18 [24]			18 [24]		

	MK 05					MK09		
Displacement	272 [16.6]	447 [27.3]	558 [34.0]	670 [40.9]	667 [40.7]	750 [45.7]	833 [50.8]	1000 [61.0]
Max. torque (th.)	1 730 [1 275]	2 840 [2 094]	3 550 [2 618]	4 250 [3 134]	4 240 [3 127]	4 770 [3 518]	5 300 [3 909]	6 360 [4 690]
Max. pressure	400 [5 800]					400 [5 800]		
Max. speed	130	80	65	55	100	90	80	65
Max. power	22.5 [30]					30 [40]		

MK MOTORS

MK 12					MKE 12				
Displacement	627 [38.2]	702 [42.8]	780 [47.6]	857 [52.3]	934 [57.0]	1 043 [63.6]	1 146 [69.9]	1 248 [76.1]	1 356 [82.7]
Max. torque (th.)	4 480 [3 304]	5 000 [3 687]	5 580 [4 115]	6 120 [4 513]	6 680 [4 926]	6 630 [4 890]	7 280 [5 369]	7 950 [5 863]	8 630 [6 365]
Max. pressure	450 [6 526]					450 [6 526]			
Max. speed	100					100			
Max. power	41 [55]					41 [55]			

MK 18						MKE 18			
Displacement	1 091 [66.6]	1 395 [85.1]	1 571 [95.8]	1 747 [106.6]	1 911 [116.6]	2 099 [128.0]	2 340 [142.8]	2 560 [156.2]	2 808 [171.3]
Max. torque (th.)	7 800 [5 752]	10 000 [7 375]	11 250 [8 297]	12 500 [9 219]	13 650 [10 067]	15 000 [11 063]	14 900 [10 989]	16 370 [12 073]	17 950 [13 239]
Max. pressure	450 [6 526]						400 [5 800]		
Max. speed	170	165	160	155	150	145	140	125	115
Max. power	70 [94]								

MK 23		MKE 23			MK 35			MK 47	
Displacement	1 747 [106.6]	2 099 [128.1]	2 340 [142.8]	2 560 [156.2]	2 808 [171.3]	3 143 [191.8]	3 494 [213.2]	4 198 [256.2]	4 680 [285.6]
Max. torque (th.)	12 500 [9 219]	15 000 [11 063]	14 900 [10 989]	16 370 [12 073]	17 950 [13 239]	22 500 [16 595]	25 000 [18 439]	30 000 [22 126]	29 750 [21 942]
Max. pressure	450 [6 526]		400 [5 800]			450 [6 526]			400 [5 800]
Max. speed	65	65	65	65	65	50	50	50	50
Max. power	70 [94]			110 [147.5]			110 [147.5]		

To know the other values, please consult the Technical Catalogs, on our website:

 <http://support.poclain-hydraulics.com>

MK	04	D04	05	09	12	18	23	35	47
 Reference technical documentation	801578146B	A08998F	801578147C	801578156M	801578150F	801578152H	801578153J	801578154K	801578155L

MK VALVING COVERS



- ✓ Single or dual-displacement
- ✓ Parking and emergency brake
- ✓ Axial porting available in size 05

Valving types

MK		04	D04	05	05 ²	09	12	18	23	35	47
1-displacement		●	●	●	●	●	●	●	●	●	●
2-displacement							●	●	●	●	●
2-displacement symmetrical valving ¹								●	●	●	●
Exchange	Hot oil shuttle						●	●	●		
Twin-Lock™	Hydraulic traction control						●	●	●		
Axial porting	Porting integrated into chassis mounting flange				●						
Multidisc brake	Integrated			●		●			●	●	●
	Mounted at the rear of the motor							●			
Claw brake	Integrated	●	●		●						
Speed sensor		●	●	●	●	●	●	●	●	●	●
Hollow shaft		●	●		●	●	●				

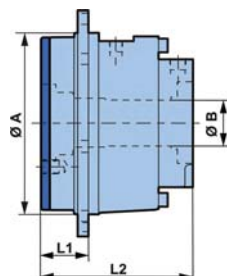
¹: no preferential direction of rotation in small displacement

²: with axial porting

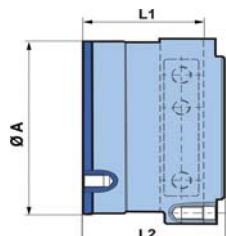
MK DIMENSIONS

MK04

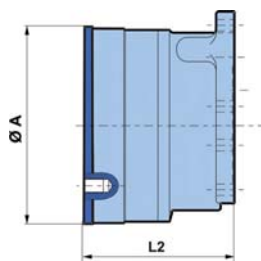
MKD04



MK05



MK05 axial

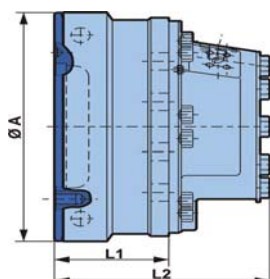


MK12-E12

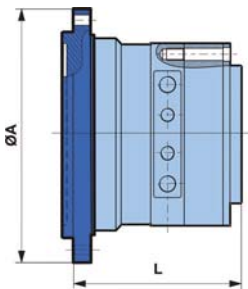
MK23-E23

MK35

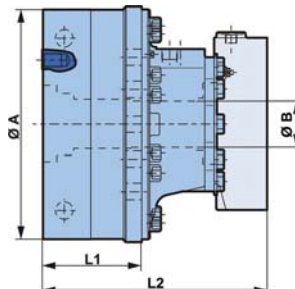
MK47



MK09



MK18-E18



MK		04	D04	05	05 ²	09	12	18	23	35	47
A dia.	mm	205	205	216	216	247	327	330	388	388	388
	[in]	[8.07]	[8.07]	[8.50]	[8.50]	[9.72]	[12.87]	[12.99]	[15.27]	[15.27]	[15.27]
B dia.	mm	36	36	N.A	38	61	36	N.A	N.A	N.A	N.A
	[in]	[1.42]	[1.42]		[1.50]	[2.40]	[1.42]				
L	mm	173	176	175	165	191	306	346	366	409	415
	[in]	[6.81]	[6.92]	[6.89]	[6.50]	[7.52]	[12.05]	[13.62]	[14.41]	[16.10]	[16.34]
Weight	kg	31	31	40	35	50	82	122	128	175	180
	[lb]	[68]	[68]	[88]	[77]	[110]	[181]	[269]	[282]	[386]	[397]

²: with axial porting

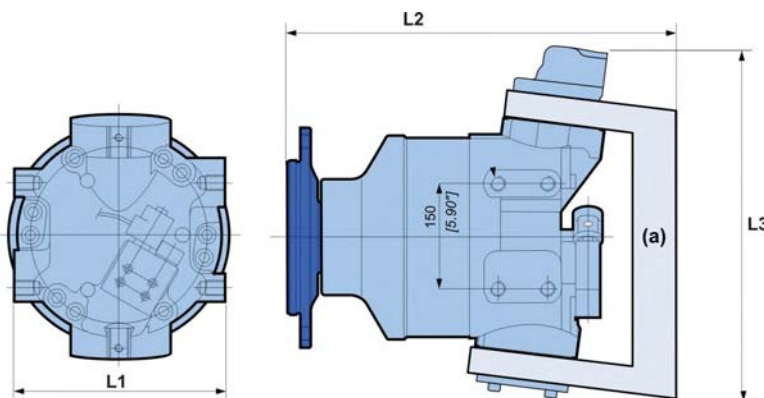
MG MOTORS

MG11 - MG21 motors

- ✓ 90° steering angle,
- ✓ Up to 450 bar [6 530 PSI],
- ✓ From 830 to 2 800 cm³/tr [51 to 154 cu.in/rev],
- ✓ The two-speed configuration allows the operator to adjust torque to ground conditions,
- ✓ Integral hydraulic displacement shift solenoid eliminates hydraulic control pressure line,
- ✓ Integral hydraulic swivel eliminates hose and fitting wear caused by hose bending,
- ✓ Simple bolt-on mounting simplifies vehicle assembly,
- ✓ Optional pivot bracket.



Dimensions



MG		11	21
L1	mm	300	300
	[in]	[11.81]	[11.81]
L2	mm	510	555
	[in]	[20.08]	[21.85]
L3	mm	505	505
	[in]	[19.88]	[19.88]
Weight	kg	210	230
	[lb]	[463]	[507]

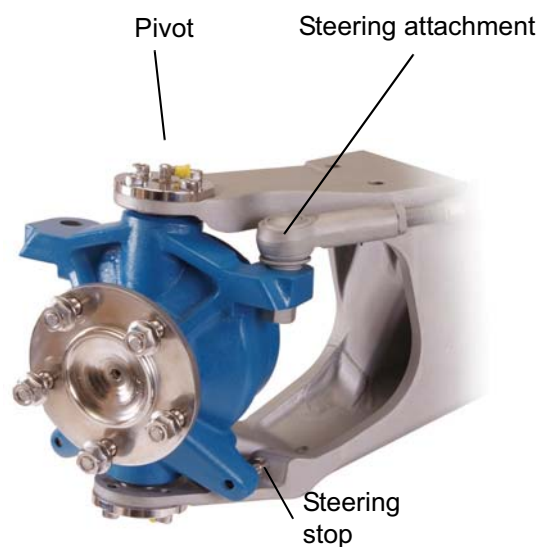
MG11 - MG21 characteristics

	Displacement	Max. torque	Max. pressure	Max. speed	Max. power
Metric unitsM	cm³/tr	N.m	bar	tr/min	kW
[US units]	[cu.in/rev]	[lbf.ft]	[PSI]	[RPM]	[HP]

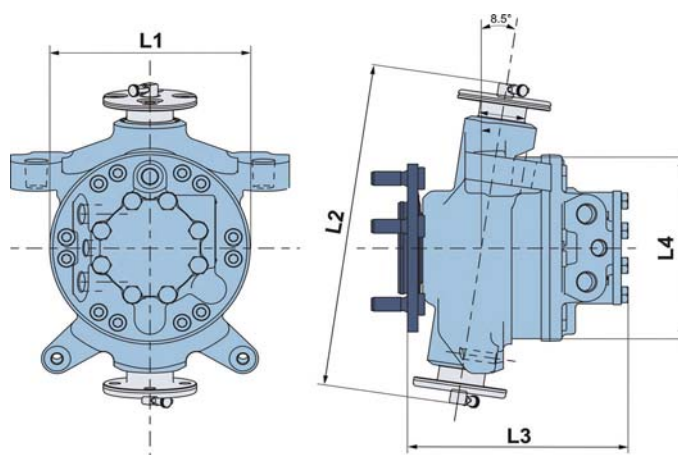
	MG11					MG21			
Displacement	837	943	1 048	1 147	1 259	1 674	1 886	2 096	2 294
	[51.1]	[57.5]	[63.9]	[70.0]	[76.8]	[102.1]	[115.1]	[128.1]	[140]
Max. torque (th.)	6 000	6 750	7 500	8 200	9 000	12 000	13 500	15 000	16 400
	[4 425]	[4 978]	[5 531]	[6 048]	[6 638]	[8 850]	[9 957]	[11 063]	[12 096]
Max. pressure	450 [6 526]					400 [5 800]			
Max. speed	170					110			
Max. power	50 [67]					80 [107]			

MG02 motor

- ✓ Facilitated assembly,
- ✓ Savings in weight and dimensions,
- ✓ Torque: 273 N.m to 633 N.m,
- ✓ Displacement: 172 cm³/tr to 398 cm³/tr,
- ✓ Available with or without friction brakes,
- ✓ Steering angle limited by stops,
- ✓ Attachments present for the direct connection of steering cylinders,
- ✓ Grease zerk present on pivots.



Dimensions



MG02		1-displacement without brake	1-displacement with brake	2-displacement with brake
L1	mm [in]	194 [7.64]		
L2	mm [in]	326 [12.85]		
L3	mm [in]	215.1 [8.47]	262.9 [10.35]	290.4 [11.43]
L4	mm [in]	183 [7.20]		
Weight	kg [lb]	33 [72.6]	38.3 [84.3]	47.8 [105.2]

MG02 characteristics

	Displacement	Max. torque	Max. pressure	Max. speed	Max. power
Metric unitsM	cm ³ /tr	N.m	bar	tr/min	kW
[US units]	[cu.in/rev]	[lbf.ft]	[PSI]	[RPM]	[HP]

	MG 02				MGE 02		
Displacement	172 [10.5]	213 [13.0]	235 [14.3]	255 [15.6]	332 [20.2]	364 [22.2]	398 [24.3]
Max. torque (th.)*	1200 [885]	1500 [1 106]	1 680 [1 239]	1 800 [1 227]	2 100 [1 548]	2 300 [1 696]	2 500 [1 843]
Max. pressure	450 [6 526]				400 [5 800]		
Max. speed	590	475	430	395	340	310	285
Max. power	18 [24]				22 [29.5]		

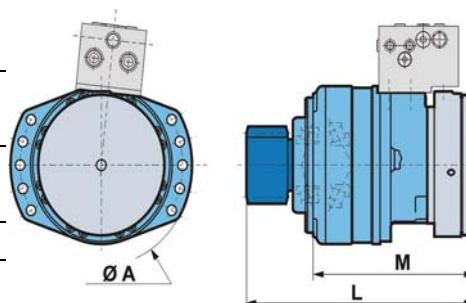
MZ MOTORS



- ✓ For slewing drive,
- ✓ Direct drive,
- ✓ Up to 450 bar [6 530 PSI],
- ✓ High efficiency,
- ✓ Compactness,
- ✓ Pinion shaft, integrated hot oil shuttle and break.

Motors

Capacity of the excavator	tonnes [ton]	2 at 4.5 [1.97 at 4.4]	4.5 at 7 [4.4 at 6.9]	7 at 10 [6.9 at 9.8]	10 at 14 [9.8 at 13.8]
MZ		04	07	10	14
A dia.	mm	245	300	335	435
	[in]	[9.65]	[11.81]	[13.19]	[17.13]
M	mm	224	264	310	375
	[in]	[8.82]	[10.39]	[12.2]	[14.76]
L	mm	310	392	428	442
	[in]	[12.2]	[15.43]	[16.85]	[17.4]
Parking brake		●	●	●	●
Theoretical torque at 100 bar	daN.m	43 at 87	74 at 130	124 at 198	166 at 268
	[lbf.ft]	[318 at 640]	[548 at 961]	[914 at 1 463]	[1 222 at 1 977]
Weight	kg	37	47	85	114
	[lb]	[81.5]	[103.6]	[187.4]	[251.3]

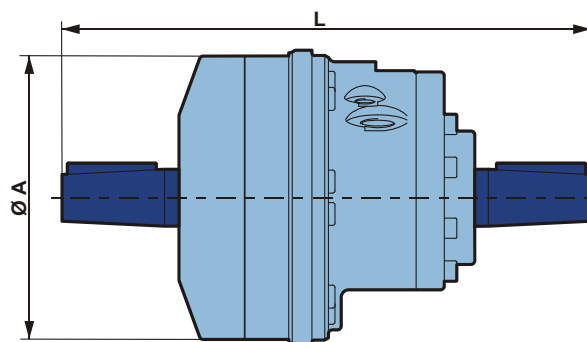


Valves functions

MZ	04	07	10	14
Anti-rebond Anti dumping Anti-shock	●	●	●	●
Automatic brake release	●	●	●	

MP MOTOR

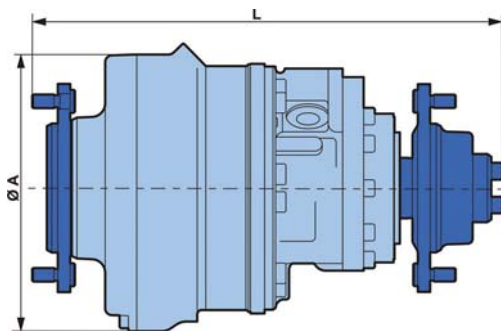
- ✓ Dual output shaft
- ✓ For synchronized implements and winches
- ✓ From 470 to 8 330 cm³/tr [28.5 to 508 cu.in/rev]
- ✓ Without brake
- ✓ Conical shafts



MP		05	08	11	18	25	35	50	83
Displacement	cm ³ /tr [cu.in/rev.]	468 [28.6]	780 [47.6]	1 048 [64.0]	1 747 [106.6]	2 498 [152.4]	3 494 [213.0]	4 996 [304.9]	8 328 [508.2]
Max. torque	N.m [lbf.ft]	3 350 [2 460]	5 580 [4 100]	7 500 [5 530]	12 500 [9 210]	17 850 [13 150]	25 000 [18 400]	35 750 [26 350]	60 000 [44 200]
Max. pressure	bar [PSI]	450 [6 530]					300 [4 351]		
Max. speed	RPM	240	170	180	150	140	130	135	100
Max. power	kW [HP]	29 [39]	41 [55]	50 [67]	70 [95]	90 [122]	80 [107]	110 [147]	150 [201]
A dia.	mm [in]	216 [8.50]	253 [9.96]	285 [11.22]	330 [13.00]	380 [14.96]	380 [14.96]	380 [14.96]	450 [17.71]
L	mm [in]	416 [16.38]	448 [17.64]	511 [20.12]	588 [23.15]	647 [25.47]	647 [25.47]	724 [28.50]	825 [32.48]
Weight	kg [lb]	41 [90]	55 [121]	80 [177]	120 [265]	198 [437]	182 [400]	250 [550]	415 [915]

MD MOTOR

- ✓ For pneumatic and combi rollers
- ✓ Drives two wheels at once
- ✓ Multidisc brake

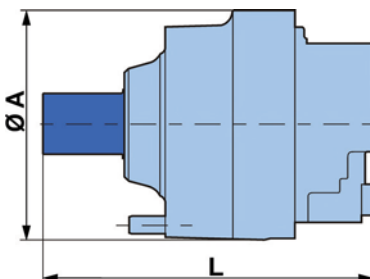


MD		11
Displacement	cm ³ /tr [cu.in/rev.]	1 048 [64.0]
Max. torque	N.m [lbf.ft]	7 500 [5 531]
Max. pressure	bar [PSI]	450 [6 526]
Max. speed	RPM	185
Max. power	kW [HP]	50 [67]
Max. braking torque	N.m [lbf.ft]	7 000 [5 163]
A dia.	mm [in]	328 [12.91]
L	mm [in]	565 [22.24]
Weight	kg [lb]	140 [308.6]

For the other available displacements, consult the MS range displacement table, p 7.

ML MOTOR

- ✓ For skid-steer loaders
- ✓ 2-displacement
- ✓ Integrated oil exchange
- ✓ Soft shift



ML		06	E06	
Displacement	cm³/tr [cu.in/rev.]	630 [38.44]	702 [42.84]	842 [51.38]
Max. torque	N.m [lbf.ft]	3 800 [2 800]	4 240 [3 127]	5 087 [3 752]
Max. pressure	bar [PSI]	380 [5 511]		
Max. speed	RPM	226	322	241
Max. power	kW [HP]	22 [30]		
Max. braking torque	N.m [lbf.ft]	4 500 [3 319]		
A dia.	mm [in]	233 [9.17]		
L	mm [in]	338 [13.31]		
Weight	kg [lb]	50 [110.2]		

Documentation

n°

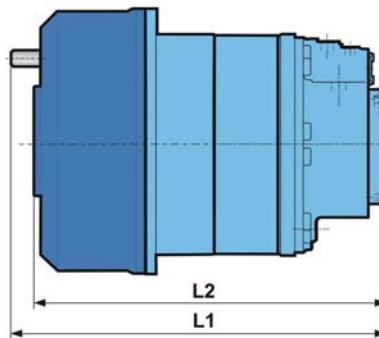
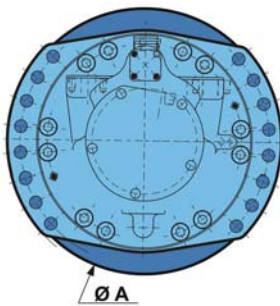
A02305F (dvpllt)

MW MOTOR

- ✓ From 4 333 to 5 167cm³/ [264.5 to 315.5 cu.in/rev.]
- ✓ Up to 160 RPM
- ✓ 3 displacements
- ✓ High efficiency throughout the speed range
- ✓ Low noise level



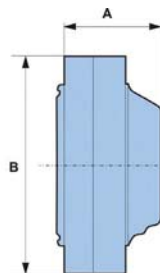
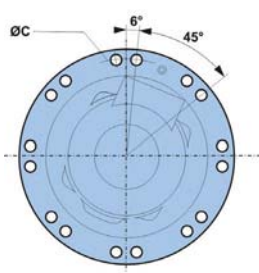
Dimensions



MW	50
A dia.	mm [in]
L1*	mm [in]
L2	mm [in]
Weight*	kg [lb]

MF HYDROBASES

- ✓ Hydraulic assist drive for on road and off road applications.
- ✓ Rotating cam motor with integrated free wheeling system



MF	08	E08
1-displacement	●	
2-displacement		
Displacement	cm ³ /tr [cu.in/rev.]	780 [47.6] 1 043 [63.6]
Max. torque	N.m [lbf.ft]	5 580 [4 100] 7 280 [5 370]
Max.pressure	bar [PSI]	450 [6 350] 400 [5 800]
Max speed	RPM	140 125
Max. speed in free-wheeling	RPM	600
Max. power	kW [HP]	41 [55] 41 [55]
A	mm [in]	105 [4.13]
B dia.	mm [in]	257 [10.12]
C dia.	mm [in]	230 [9.29]

CDM MOTOR

ADDIDRIVE™ CreepDrive is the ideal transmission for vehicles that need to travel fast between working sites, yet must work at a low and constant speed.

The CDM 222-050 motor is at the heart of the system. Mechanically linked to the transmission shaft at its input and output, it is placed between the transmission and the differential. Light and compact package, it can fit every type of transmission brand. Moreover, it eases the remote control of the machine.



Specifications

			Displacement cm ³ /tr [in ³ /rev]			
			667 [40.7]	750 [45.7]	833 [50.8]	1000 [61.0]
Road mode	Max. torque N.m [lb.ft]	In continuous duty	22 200 [13 370]			
		In intermittent duty	42 000 [31 000]			
	Max. speed RPM	Without case flushing	2 800*			
		With case flushing**	3200*			
CreepDrive mode	Continuous use	Max. torque N.m [lb.ft]	2 880 [2 124]	3 240 [2 390]	3 597 [2 653]	4 316 [3 183]
		Max. speed RPM	200	185	170	142
		Max. pressure bar [PSI]	275 [3 990]			
		Max. power kW [HP]	40 [54]			
	Occasionnal use***	Max. torque N.m [lb.ft]	4 190 [3 090]	4 711 [3 475]	5 232 [3 859]	6 278 [4 630]
		Max. pressure bar [PSI]	400 [5 800]			
	Max. temperature°C [°F]	80 [176]				

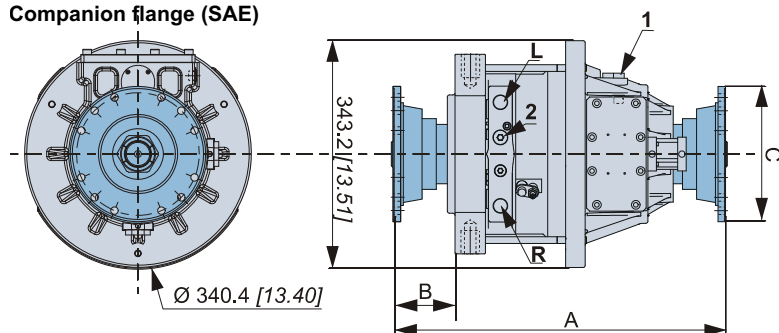
* Contact your Poclain Hydraulics application engineer for approval of higher speeds.

** Contact your Poclain Hydraulics application engineer for use of case flushing.

*** The service life is influenced by the pressure, the speed and the power. For an accurate service life calculation of your application please consult your Poclain Hydraulics application engineer.

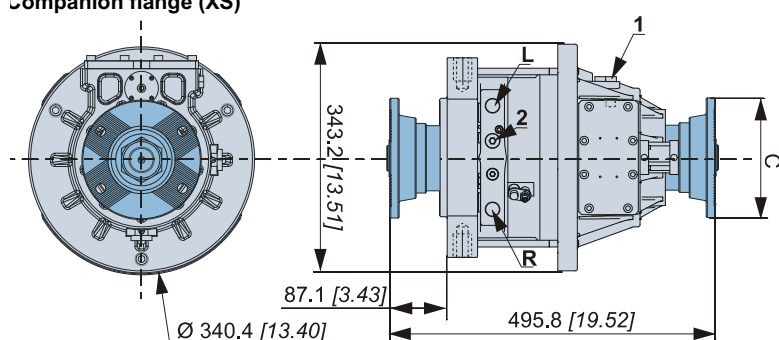
Dimensions

Companion flange (SAE)



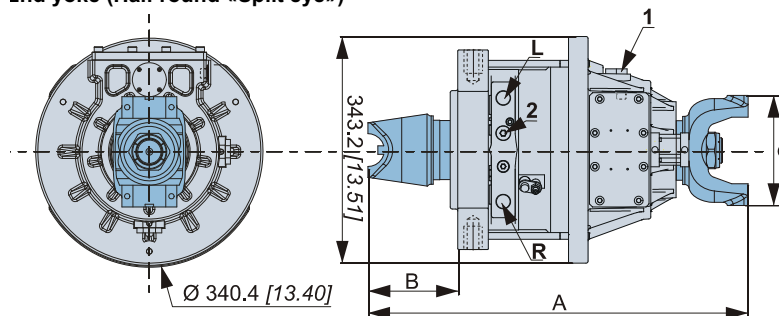
	Series	
	1650/1710	1810
A	476.8 [18.77]	495.8 [19.52]
B	77.7 [3.06]	87.1 [3.43]
C	203.2 [8.00]	196.9 [7.75]

Companion flange (XS)



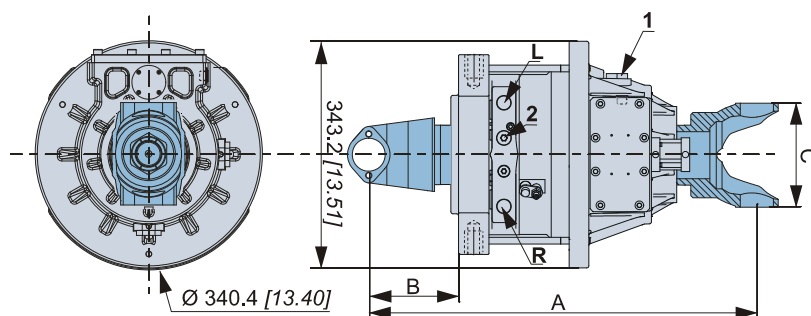
	Series	
	XS 150	XS 180
C	155 [6.10]	180 [7.09]

End yoke (Half round «Split eye»)



	Series	
	1710	1810
A	581.7 [22.90]	597.4 [23.52]
B	130.0 [5.12]	137.9 [5.43]
C	157.2 [6.19]	194.1 [7.64]

End yoke (Half round «Solid eye»)



	Series	
	1710	1810
A	581.7 [22.90]	597.4 [23.52]
B	130.0 [5.12]	137.9 [5.43]
C	154.8 [6.09]	191.7 [7.54]

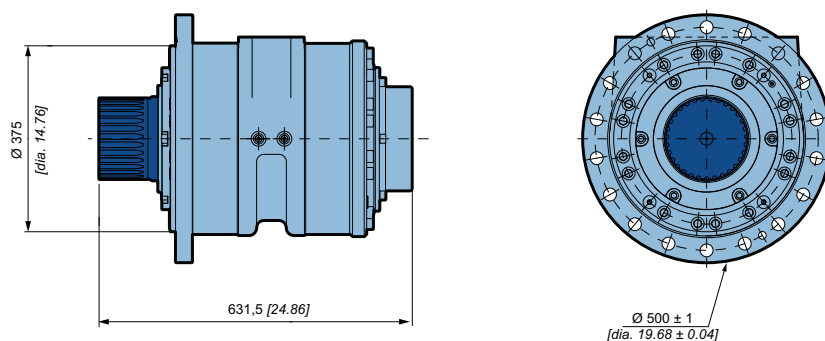
MA MOTOR

- ✓ For industrial applications
- ✓ Max. torque: 74 400 N.m [54 870 lbf.ft]
- ✓ Without brake
- ✓ Single displacement
- ✓ Hollow shaft available

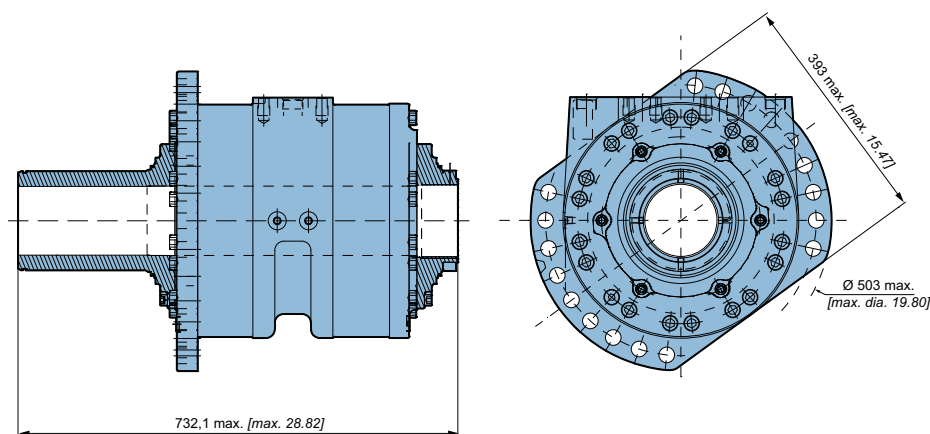


		MA88			
Displacement	cm ³ /tr [cu.in/rev.]	7 000 [426.9]	7 920 [483]	8 800 [536.7]	10 400 [634.3]
Max. torque	N.m [lbf.ft]	50 000 [36 880]	56 670 [41 800]	63 000 [46 470]	74 400 [54 870]
Max. pressure	bar [PSI]	450 [6 530]			
Max. speed	RPM	140	130	120	100
Max. power	kW [HP]	265 [355]			
Weight	kg [lb]	352 [776] - 382 [840]			

Splined shaft



Hollow shaft



MA88



M-MV MOTORS

- ✓ Axial pistons
- ✓ Fixed and variable displacement
- ✓ For open and closed loop circuits
- ✓ Compacts
- ✓ Max. pressure : 320 bar [4 641 PSI]
- ✓ Mounting flange: SAE A, SAE B



		M0	M1	M2	M3	MV2	MV3
Displacement		Fixed				Variable	
	cm³/tr [cu.in/rev.]	7 to 18 [0.43 - 1.10]	15 to 21 [0.91 - 1.28]	24 to 50 [1.46 - 3.05]	41 to 65 [2.50 - 3.97]	35 to 53 [2.13 - 3.23]	55 to 65 [3.35 - 3.97]
Max. pressure	bar [PSI]	300 [4 350]	320 [4 641]				
Max. speed	RPM	3 600					
Weight	kg [lb]	3,5 [7.7]	7 [15.4]	12 [26.4]	15 [33.1]	-	-
Mounting flange		SAE A	SAE A	SAE B	SAE B	SAE B	SAE B
Controls							
Hydraulic 2 positions		-	-	-	-	●	●
Electrical 2 positions		-	-	-	-	●	●

	M0	M1	M2	M3	MV2	MV3
Documentation	A35770FM0	A35770FM1	A35770FM2	A35770FM3	-	-

Services

Motors

Pumps

Circuit components

Mobile electronics

PM PUMPS

- ✓ Variable displacement
- ✓ For closed loop circuits
- ✓ Rugged and compact
- ✓ Integral charge pump
- ✓ Tandem mounting available
- ✓ Mounting flange: SAE A, SAE B, SAE BB

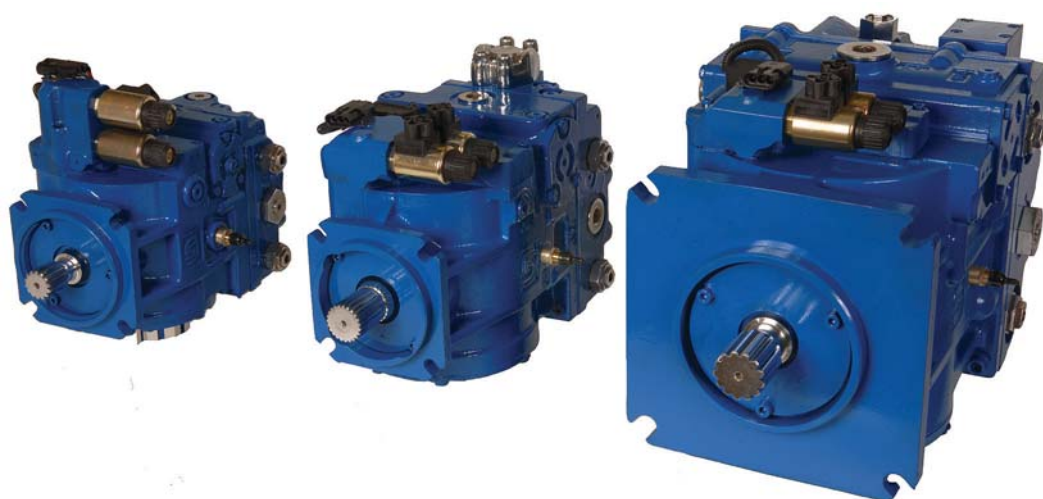


		PMV0	PM10	PM25	PM45	PM65
Displacement	cm³/trtr [cu.in/rev.]	7 to 18 [0.43 - 1.10]	7 to 18 [0.43 - 1.10]	20 to 28 [1.22 - 1.71]	35 to 52 [2.14 - 3.17]	55 to 65 [3.41 - 3.97]
Max. pressure	bar [PSI]	300 [4 350]	350 [5 076]			
Max. speed	RPM	3 600				
Max. power	kW [HP]	30,5 [40.9]	35,3 [47.3]	53,8 [72.1]	99,8 [133.8]	124,8 [167.3]
Weight	kg [lb]	8 [17.6]	18 [39.7]	18 [39.7]	28 [61.7]	31 [68.3]
Mounting flange		SAE A	SAE A, B	SAE B	SAE B, BB	SAE B, BB
Controls	A - Mechanical servo control		●	●	●	●
	B - Electrical on-off servo control with return springs		●	●	●	●
	C - Electrical on-off servo control without return springs		●	●	●	●
	D - Hydraulic Automotive Control			●	●	●
	M - Direct mechanical		●	●		
	N - Direct mechanical with spring return		●			
	P - Electro-proportional servo control			●	●	●
	Q - Electro-proportional servo control with feed-back				●	
	S - Hydraulic servo control		●	●	●	●
	T - Hydraulic servo control with feed-back				●	

	PMV0	PM10	PM25	PM45	PM65
Documentation	A35764Z	A35766B	A35767C	A35768D	A35769E

P90 PUMPS

- ✓ Variable displacement
- ✓ For closed loop circuits
- ✓ Up to 480 bar pressure [6 962 PSI]
- ✓ Three frame sizes
- ✓ Six displacements
- ✓ Rugged and compact
- ✓ Integral charge pump
- ✓ Low noise level
- ✓ Tandem mounting available
- ✓ For use in Poclain Hydraulics systems and SmartDrive™
- ✓ Rear auxiliary mount :SAE A, B, C, D, E



P90	055	075	100	130	180	250
Displacement cm³/tr [cu.in/rev.]	55 [3.35]	75 [4.58]	100 [6.10]	130 [7.93]	180 [10.98]	250 [15.25]
Max. pressure bar [PSI]	480 [6 962]					
Max. speed RPM	4 250	3 950	3 650	3 400	2 850	2 500
Weight kg [lb]	40 [88.2]	49 [108]	68 [150]	88 [194]	136 [300]	154 [340]

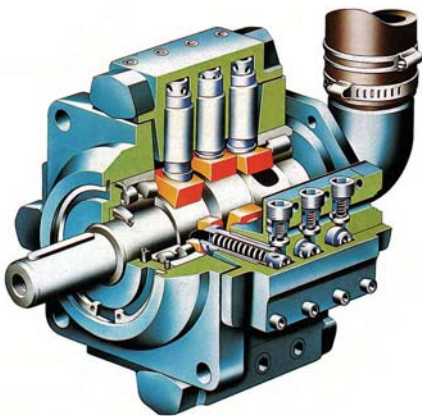
Options available on the entire range

- ✓ Speed sensor

🇬🇧 Reference technical documentation: A18586C

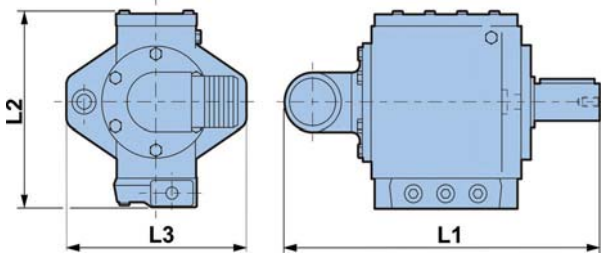
PL PUMPS

- ✓ Fixed displacement
- ✓ For open loop circuits
- ✓ Up to 450 bar [6 530 PSI] pressure
- ✓ Sizes 10 to 444 cm³/tr [0.63 to 27 cu.in/rev]
- ✓ In line radial pistons
- ✓ High speed for engine drive
- ✓ High efficiency
- ✓ High durability
- ✓ Independent output flows



Single output flow

PL 1H14	mm	[in]
L1	397	[15.63]
L2	230	[9.05]
L3	225	[8.86]
	kg	[lb]
Weight	28	[62]

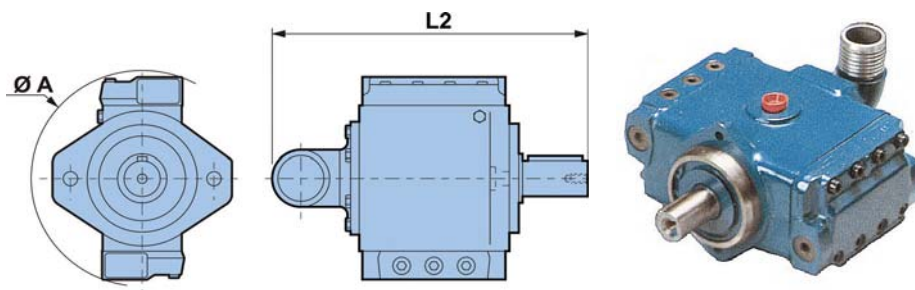


Pump type		PL1H14					
Displacement	cm³/tr [cu.in/rev.]	17.5 [1.07]	20 [1.22]	22 [1.34]	25 [1.53]	28.5 [1.74]	32 [1.95]
Max. pressure	bar [PSI]	450 [6 526]					
Max. speed	RPM	3 100	3 000	2 900	2 800	2 600	2 400
Max. power	kW [HP]	41 [55]	45 [60]	48 [64]	52 [70]	56 [75]	58 [78]

PL PUMPS

Two output flows

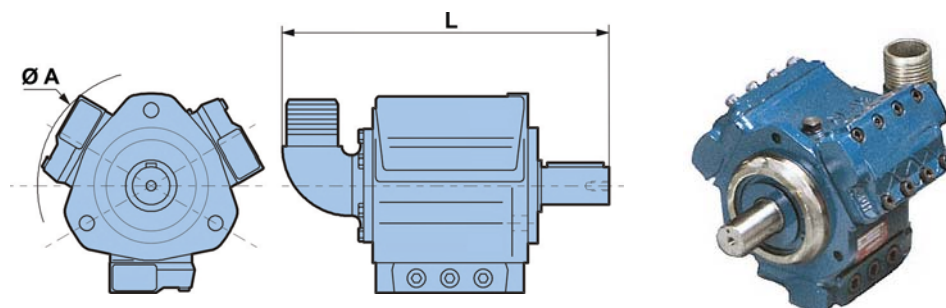
PL 2H14	mm	[in]
L	397	[15.63]
A dia.	320	[12.60]
	kg	[lb]
Weight	38	[84]



Pump type	PL2H14						
Displacement	cm ³ /tr [cu.in/rev.]	2 x 17.5 [2 x 1.07]	2 x 20 [2 x 1.22]	2 x 22 [2 x 1.34]	2 x 25 [2 x 1.53]	2 x 28.5 [2 x 1.74]	2 x 32 [2 x 1.95]
Max. pressure	bar [PSI]	450 [6 526]					
Max. speed	RPM	3 100	3 000	2 900	2 800	2 600	2 400
Max. power	kW [HP]	81 [109]	90 [121]	96 [129]	105 [141]	111 [149]	115 [154]

Three output flows

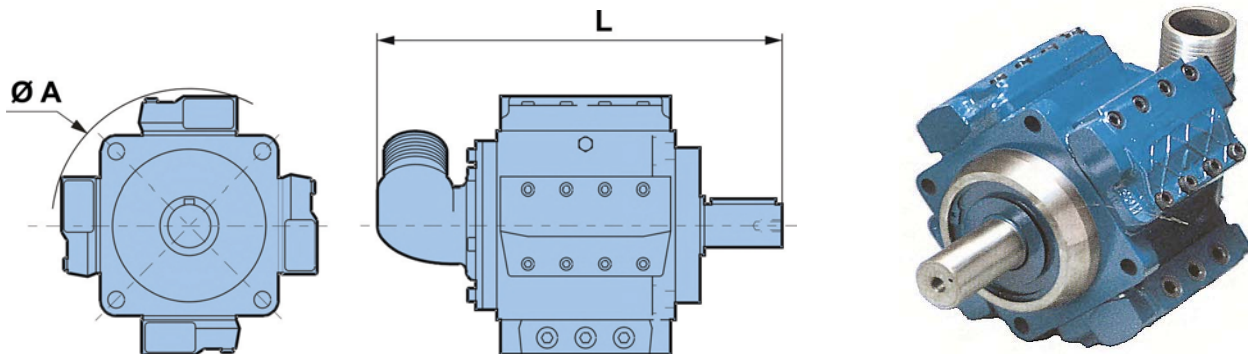
PL 3H14	mm	[in]
A dia.	320	[12.60]
L	397	[15.63]
	kg	[lb]
Weight	47	[104]



Pump type		PL3H14						
Displacement	cm³/tr	3 x 17.5	3 x 20	3 x 22	3 x 25	3 x 28.5	3 x 32	3 x 37
	[cu.in/rev.]	[3 x 1.07]	[3 x 1.22]	[3 x 1.34]	[3 x 1.53]	[3 x 1.74]	[3 x 1.95]	[3 x 2.26]
Max. pressure	bar [PSI]	450 [6 526]						
Max. speed	RPM	3 400	3 200	3 100	3 000	2 800	2 500	2 400
Max. power	kW [HP]	134 [180]	144 [193]	153 [205]	169 [227]	180 [241]	180 [241]	180 [241]

PL PUMPS

Four independent output flows

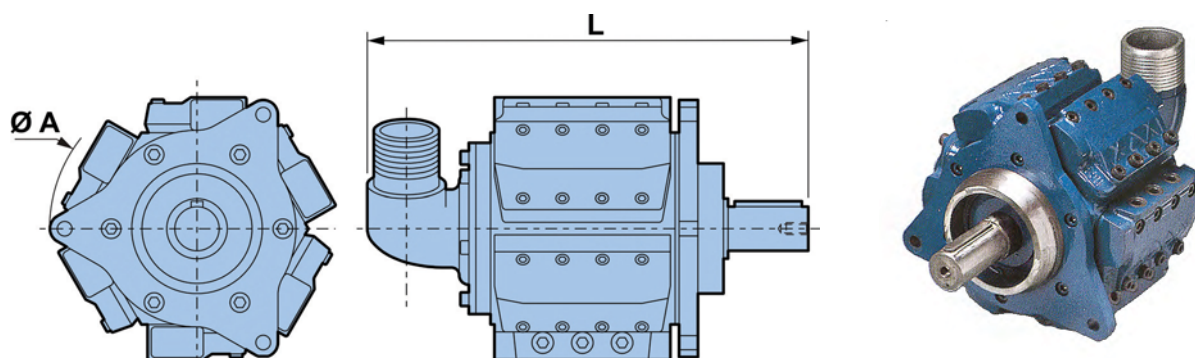


Pump type		PL4H10		PL4H18			PL4H20	
Displacement	cm ³ /tr	4 x 10.3	4 x 12.5	4 x 33	4 x 44	4 x 52	4 x 58	4 x 74
	[cu.in/rev.]	[4 x 0.63]	[4 x 0.76]	[4 x 2.01]	[4 x 2.69]	[4 x 3.17]	[4 x 3.54]	[4 x 4.52]
Max. pressure	bar [PSI]	450 [6 526]		450 [6 526]			450 [6 526]	
Max. speed	RPM	2 700		2 500	2 500	2 400	2 400	2 300
Max. power	kW [HP]	84 [113]	102 [137]	246 [330]	330 [442]	376 [504]	417 [559]	510 [684]
A dia.	mm [in]	275 [10.83]		440 [17.32]			550 [21.65]	
L	mm [in]	376 [14.80]		550 [21.65]			656 [25.83]	
Weight	kg [lb]	42 [93]		140 [309]			250 [551]	

Pump type		PL4H14						
Displacement	cm ³ /tr	4 x 17.5	4 x 20	4 x 22	4 x 25	4 x 28.5	4 x 32	4 x 37
	[cu.in/rev.]	[4 x 1.07]	[4 x 1.22]	[4 x 1.34]	[4 x 1.53]	[4 x 1.74]	[4 x 1.95]	[4 x 2.26]
Max. pressure	bar [PSI]	450 [6 526]						
Max. speed	RPM	3 100	2 900	2 800	2 600	2 400	2 200	2 000
Max. power	kW [HP]	163 [219]	174 [233]	185 [248]	195 [261]	205 [275]	211 [283]	222 [298]
Adia.	mm [in]	320 [12.60]						
L	mm [in]	435 [17.13]						
Weight	kg [lb]	68 [150]						

PL PUMPS

Six independent output flows



Pump type		PL6H14					
Displacement	cm ³ /tr [cu.in/rev.]	6 x 17.5 [6 x 1.07]	6 x 20 [6 x 1.22]	6 x 22 [6 x 1.34]	6 x 25 [6 x 1.53]	6 x 28.5 [6 x 1.74]	6 x 32 [6 x 1.95]
Max. pressure	bar [PSI]	450 [6 526]					
Max. speed	RPM	3 200	3 000	2 800	2 700	2 500	2 300
Max. power	kW [HP]	252 [338]	270 [362]	277 [371]	304 [408]	320 [429]	331 [444]
A dia.	mm [in]	352 [13.86]					
L	mm [in]	463 [18.23]					
Weight	kg [lb]	84 [185]					

Pump type		PL6H20		
Displacement	cm ³ / [cu.in/rev.]	6 x 58 [6 x 3.54]	6 x 65 [6 x 3.97]	6 x 74 [6 x 4.52]
Max. pressure	bar [PSI]	450 [6 526]		
Max. speed	RPM	2 400	2 200	2 000
Max. power	kW [HP]	626 [839]	643 [862]	666 [893]
A dia.	mm [in]	550 [21.65]		
L	mm [in]	659 [25.94]		
Weight	kg [lb]	360 [794]		

For more information, please consult the Technical Catalogs, on our web site:
<http://www.poclain-hydraulics.com>



Pump type		PL
Technical catalog		A08974E

VB BRAKE VALVES

- ✓ Compact
- ✓ Smooth progressive control
- ✓ Can be integrated to existing braking circuit

Brake actuators

- ✓ More safety, performance & reliability
- ✓ Brake pressure proportional effort
- ✓ For single & dual circuit
- ✓ Small, lightweight package
- ✓ Pressure max. 120 bar

VB type		VB 010	VB 020	VB 002	VB 0B0	VB 012	VB 022	VB00E
								
Service brake		●	●		●	●	●	
Parking brake				●				●
Single-circuit		●		●	●	●		
Dual-circuit ¹			●				●	●
Brake valve type		modulating	modulating	reverse modulating	modulating steering-assisted	combined	combined	reverse modulating
Length ²	mm [in]	50 [1.97]	60 [2.36]	50 [1.97]	135 [5.31]	140 [5.51]	132 [5.20]	74 [2.91]
Width ²	mm [in]	35 [1.38]	60 [2.36]	35 [1.38]	60 [2.36]	60 [2.36]	60 [2.36]	121 [4.76]
Height ²	mm [in]	95 [3.74]	95 [3.74]	130 [5.12]	95 [3.74]	107.5 [4.23]	130 [5.12]	162.2 [6.39]

¹Dual circuit: the 2 circuits are independent.

²: dimensions concern the valving blocks only.

	Pedal			Vertical lever	Horizontal lever
Options					

Accumulator charging valves

- ✓ Max. flow to auxiliary circuit: 120 L/min [32 GPM]
- ✓ Cut-in / cut-out pressure: 110 / 130 bar to 180 / 210 bar [1 600 / 1 900 to 2 611 / 3 045 PSI]
- ✓ Accumulator supply flow: 2.75 to 15 L/min [0.75 to 4.0 GPM]

VB type		VB 100			VB 200		
							
		Single-circuit			Dual-circuit		
Reference		30*	45*	120*	30*	45*	120*
Max. pressure bar [PSI]	Cut-in / Cut-out	180 / 210 [2611 / 3 045]			180 / 210 [2611 / 3 045]		
Max. flow L/min [GPM]	Auxiliary	30 [7.9]	45 [11.9]	120 [31.7]	30 [7.9]	45 [11.9]	120 [31.7]
	Accumulator	15 [3.96]			15 [3.96]		
Length	mm [in]	106 [4.17]			106 [4.17]		
Width	mm [in]	70 [2.76]			87 [3.42]		
Height	mm [in]	61 [2.40]			87.5 [3.44]		
		70 [2.76]			96 [3.78]		

*: flow rate to auxiliaries (L/min)

Power brake valves

- ✓ Brake actuator + accumulator charging valve
- ✓ Low leaking
- ✓ Cost and space savings
- ✓

VB type		VB 110			VB 220			VB 22E	
									
		Single-circuit			Dual-circuit			Dual-circuit	
Reference		30*	45*	120*	30*	45*	120*	30*	45*
Max. pressure bar <i>[PSI]</i>	Cut-in/Cut-out	180 / 210 <i>[2611 / 3 045]</i>							
	Service	120 <i>[1 740]</i>							
Max. flow L/min <i>[GPM]</i>	Auxiliary	30 <i>[7.9]</i>	45 <i>[11.9]</i>	120 <i>[31.7]</i>	30 <i>[7.9]</i>	45 <i>[11.9]</i>	120 <i>[31.7]</i>	30 <i>[7.9]</i>	45 <i>[11.9]</i>
	Accumulator	15 <i>[3.96]</i>							
Length	mm <i>[in]</i>	60 <i>[2.36]</i>		70 <i>[2.75]</i>	60 <i>[2.36]</i>		70 <i>[2.75]</i>	60 <i>[2.36]</i>	
Width	mm <i>[in]</i>	100 <i>[3.94]</i>		112 <i>[4.41]</i>	100 <i>[3.94]</i>		112 <i>[4.41]</i>	173 <i>[6.81]</i>	
Height	mm <i>[in]</i>	95 <i>[3.74]</i>		95 <i>[3.74]</i>	95 <i>[3.74]</i>		95 <i>[3.74]</i>	135 <i>[5.31]</i>	

*: flow rate to auxiliaries (L/min)

To know the other values, please consult the Technical Catalogs, on our web site:
<http://www.poclain-hydraulics.com>

Documentation n° 

A06604D

CIRCUIT VALVES

- ✓ High pressure
- ✓ Compact
- ✓ Operates with all products Poclain Hydraulics

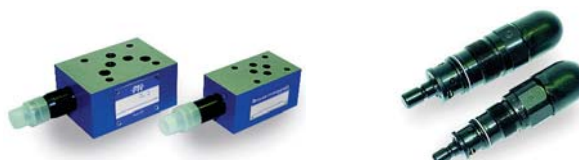
Check valves



	Size (NG)	Max. pressure bar [PSI]	Flow rate L/min [GPM]	Connecting dimensions
Direct operated	6 - 10	350 [5 076]	100 [26.4]	CETOP
Pilot operated	6 - 10	350 [5 076]	30 - 60 [7.9 - 15.9]	Metric - Gas - UNF
Counterbalance	6 - 10	270 [3 916]	60 [15.9]	CETOP - Metric - Gas - UNF

 Documentation: A35759T

Pressure valves



Size (NG)	Operation	Max. pressure bar [PSI]	Flow rate L/min [GPM]	Connecting dimensions
4 - 6 - 10	Direct / Pilot	400 [5 802]	120 [31.7]	Cartridge - CETOP - Metric - Gas - UNF

 Documentation: A35760U

Flow control valves



	Size (NG)	Max. pressure bar [PSI]	Flow rate L/min [GPM]	Connecting dimensions
Throttle / Check valve	6 - 10	350 [5 076]	100 [26.4]	CETOP
Pressure compensated	6	350 [5 076]	16 - 90 [4.2 - 23.8]	CETOP - Metric - Gas - UNF
Flow divider	6 - 10	350 - 450 [5 076 - 6 526]	70 - 300 [18.5 - 80]	Metric - Gas - UNF

 Documentation: A35761V

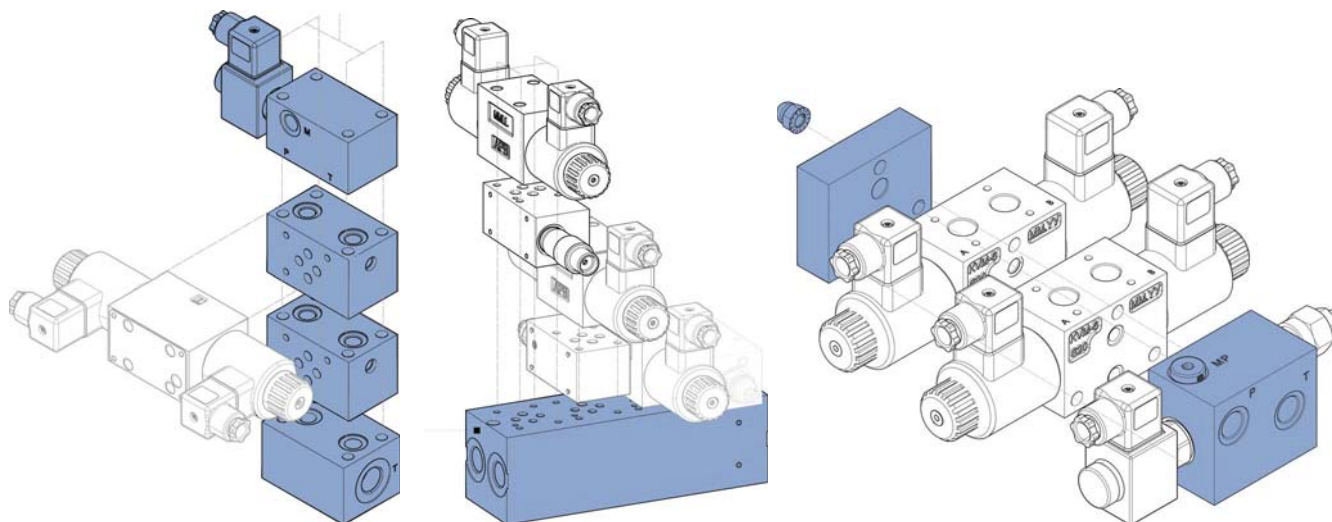
Directional control valves



	Size (NG)	Max. pressure bar [PSI]	Max. flow rate L/min [GPM]	Actuation	Connecting dimensions
2/2	4 - 6	250 [3 046]	40 [10.5]	Electrical / Mechanical	Metric - Gas - UNF
3/2	4 - 10	350 [5 076]	100 [26.4]	Electrical	Metric - Gas - UNF
4/2	6 - 10	210 [3 046]	60 [15.8]	Automatic	CETOP
4/2 and 4/3	6 - 10 - 16	350 [5 076]	300 [79]	Electrical / Mechanical / Hydraulic	CETOP - Metric - Gas - UNF
6/2	6 - 10 - 16	350 [5 076]	250 [65.8]	Electrical / Mechanical	Metric - Gas - UNF
6/3	4	210 [3 046]	6 [1.6]	Electrical	Metric - Gas
8/3	6	250 [3 046]	50 [13.2]	Electrical	Metric - Gas - UNF

 Documentation: A35758S

Connecting components

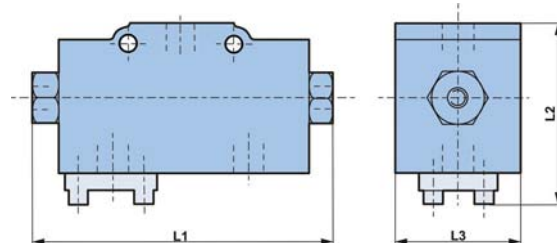
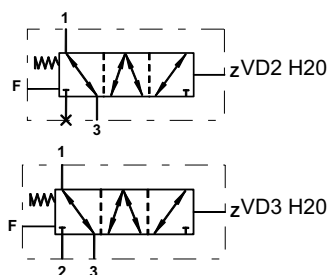


	Size (NG)	Max. pressure bar [PSI]	Max. flow rate L/min [GPM]	Connecting dimensions
Stacking elements	6 - 10	350 [5 076]	120 [31.6]	CETOP
Subplates / Manifold blocks	6 - 10 - 16	350 [5 076]	300 [79.0]	CETOP
Bankable elements	6	350 [5 076]	40 [10.5]	CETOP / Into pipeline

 Documentation: A35763X

High pressure directional valves VD

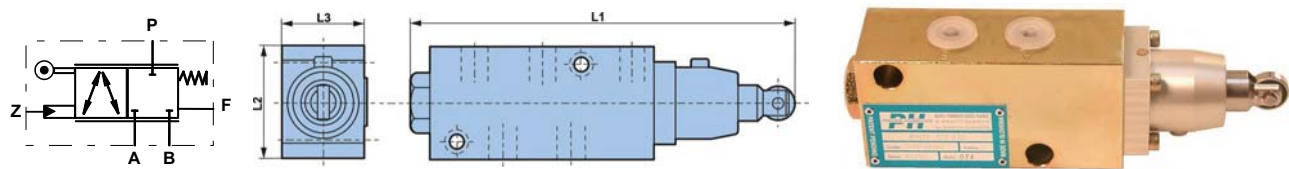
- ✓ Circuit bypass or cut-off



Directional valves		VD2 H20	VD2 H25	VD3 H20	VD3 H25
Function		Locking		Bypass	
Nominal flow	L/min [GPM]	130 [34.3]	260 [68.7]	130 [34.3]	260 [68.7]
Max. pressure	bar [PSI]	450 [6 526]			
L1 max.	mm [in]	188 [7.40]			
L2	mm [in]	130 [5.12]		100 [3.94]	
L3 max.	mm [in]	84 [3.31]			
Weight	kg [lb]	8 [17.5]			

Low pressure directional valves VD

- ✓ Control flow on Twin-Lock™ circuits



Directional valves		VD2H08
Nominal flow	L/min [GPM]	20 [5.3]
Max. pressure	bar [PSI]	450 [6 526]
L1 max.	mm [in]	214 [8.43]
L2	mm [in]	63 [2.48]
L3 max.	mm [in]	46 [1.81]
Weight	kg [lb]	2.7 [6.0]

Exchange block VM

- ✓ Send part of the flow to the cooler
 - ✓ :Two versions:
- A = hot oil shuttle valve
 - B = hot oil shuttle + cross-over high pressure relief valve

VME (a)

VME (b)

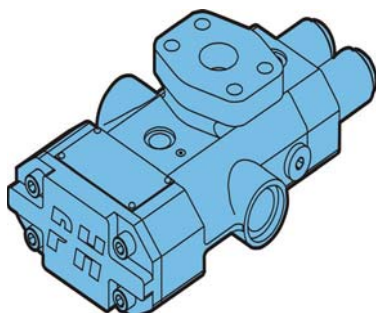
		VME A	VME B
Max. pressure	bar [PSI]	420 [6 100]	
L1 max.	mm [in]	150 [5.90]	205 [8.07]
L2	mm [in]	81 [3.11]	112.5 [4.42]
L3 max.	mm [in]	117.5 [4.63]	128.5 [5.06]
Weight	kg [lb]	7.8 [17.2]	11.5 [25.5]

ELECTRO-HYDRAULIC COMPONENTS

- ✓ Designed for Poclain Hydraulics transmissions
- ✓ Compact & reliable

Traction control valves

- ✓ Restricts flow to slipping wheel motor



		VMA In-line model		VMA Flanged model	
Voltage		12 & 24 V DC		12 & 24 V DC	
Max. flow	L/min [GPM]	20 [5.2]	50 [13.2]	20 [5.2]	50 [13.2]
Max. pressure	bar [PSI]	450 [6 526]		450 [6 526]	
Length	mm [in]	256 [10.08]		256 [10.08]	
Width	mm [in]	134 [5.27]		150 [5.90]	
Height	mm [in]	81 [3.19]		66 [2.60]	
Weight	kg [lb]	7.2 [15.9]		11.2 [24.7]	

🇬🇧 Reference technical documentation: 801 478 146F

Services

Motors

Pumps

Circuit components

Mobile electronics

SMARTDRIVE™ ECU

- ✓ For self-propelled machinery
- ✓ High productivity & safety
- ✓ Smooth and comfortable driving
- ✓ Advanced functions

Four solutions:

- ✓ **SmartDrive™ Off-Road** : electronic solution for traction control systems
- ✓ **SmartDrive™ Master** : electronic solution for the management of hydrostatic transmissions
- ✓ **SmartDrive™ Premier** : electronic solution for the management of hydrostatic transmissions and for traction control systems



SmartDrive System	Off-Road™	Master™	Premier™	Easy™
Drivability		●	●	●
Management of components		●	●	●
Safety features		●	●	●
Traction control function	●		●	
Front/rear differential drive lock		●	●	
Limp mode	●	●	●	●
CAN Bus communication	●	●	●	●
*Parameter setting	●	●	●	●

*: with the PC software PHASES™ or with a HHT (hand-held terminal)

SmartDrive™ Easy : Do-It -Yourself solution for the management of hydrostatic transmissions.

- ✓ No programming to be carried out
- ✓ An assistance in the choice of the functions
- ✓ Convivial tools on PC

The SmartDrive™ Easy is:

- ✓ Simple
- ✓ Economic
- ✓ Rapid to be implemented
- ✓ Reliable



PHASES™ PC software

- ✓ Assistant software for embedded systems
- ✓ Downloading of the on-board program
- ✓ Calibration of system components
- ✓ Changes to the configuration defining vehicle's behaviour
- ✓ Diagnostics

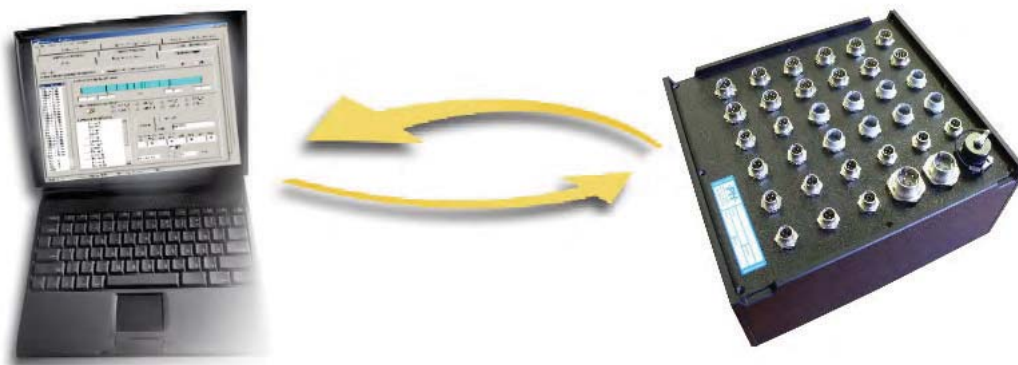


SMARTDRIVE™ CANALOGGER

✓ Canalogger

General characteristics

Description	Characteristics
Inputs	• 12 analog inputs • 8 temperature inputs • 8 digital inputs • 5 frequency inputs • 1 supply input • 1 CAN machine plug • 1 Hand held terminal / Debug plug
Supply voltage	10 to 30 V
Operating temperature	- 20°C to 70°C [- 4°F to 182°F]
Mass	3.85 kg [8.47 lb]
SD Canalogger protection index with its connectors	IP 65 (weather proofing)
Resistance	1m [40 inch] fall
SD Canalogger set-up	Set-up with a PC using the Canalogger Explorer™ software application or the hand held terminal with serial link
Sample frequency	• Up to 500 Hz for analog, frequency and digital inputs • Up to 25 Hz for temperature inputs • Up to 1 Mbit/sec for the CAN bus
Saving	Smart Media Card
Communication	Serial link RS 232



Main components

SmartDrive™ ECU: specific according to the SmartDrive type



SmartDrive™ Easy ECU

Joystick



160 bar [2320 PSI] pressure sensor for braking circuit

Rotary actuator: controls injection on engines



600 bar [8700 PSI] pressure sensor for the high pressure line

Rotary potentiometer: detects movement (lever position)



Pedal

SD-Displays

New



SmartDrive™ Canalogger and its software (Canalogger Explorer™)

Services

Motors

Pumps

Circuit components

Mobile electronics

Services

Motors

Pumps

Circuit components

Mobile electronics

- Plant
- Logistic center
- Sales subsidiary
- ★ R&D center



- > 8 plants on 3 continents
- > 16 subsidiaries en 4 continents
- > Over 150 distributors around the world
- > 1,500 people worldwide



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