SELECTION GUIDE 2009

POCLAIN HYDRAULICS

POCLAIN HYDRAULICS: DRIVING INNOVATION

Poclain Hydraulics is the world leader in hydrostatic transmissions integrating our unique and patented technology. With at least 6% of turnover invested in R & D, we have made innovation the pillar of an international growth strategy.

Verberie-France

Yorkville-US

Brno-Czech Republic

Poclain Hydraulics represents:

Over 40 years of experience in power transmissions using high torque cam-lobe motors

Over 1,100 people around the world

4 manufacturing plants

11 sales subsidiaries

Over 100 distributors around the world

THE MARKET LEADER

Poclain Hydraulics specializes in design, manufacturing, and sales of:

- Hydrostatic transmissions and associated services
- Services for mobile machinery
- High torque cam-lobe radial piston motors

THE POCLAIN HYDRAULICS ADVANTAGE

- Constant innovation to meet your needs
- Custom transmissions
- Expert technical support
- Product or vehicle testing services
- A worldwide network of local support

OUR MARKETS

CONSTRUCTION
Compactors, skid-steer loaders, trenchers, directional drills, excavators, …

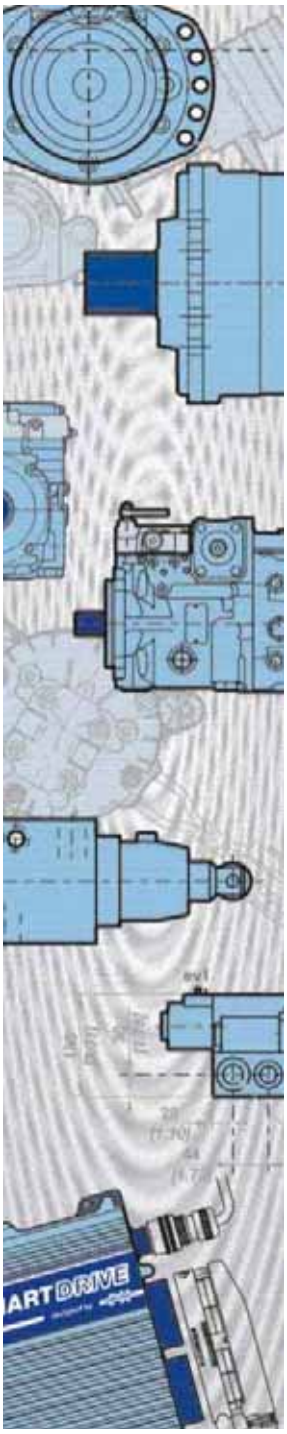
AGRICULTURE
Speciality harvesters, sprayers, combines, forestry vehicles, …

MATERIAL HANDLING
Industrial and truck mounted forklifts, aerial work platforms, aircraft loaders, …

INDUSTRIAL
Shredders, centrifuges, sugar cane elevators, …

MARINE
Capstan winches, net drums, fishing winches, …

CONTENT



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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 taylored solutions to match your application's requirements.
Our resources:
• Design Department consisting of over 100 engineers
• Test lab equiped with more than 30 caracteristics and endurance benches

Product customisation respects a strict and transparent step-by-step process:
• Feasability
• 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 aftersales 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) equiping your application.

HIGH TORQUE CAM-LOBE MOTORS

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

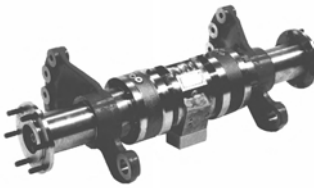
MS wheel motor

MG motor

MK motor

MD motor

ES axle



ML motor

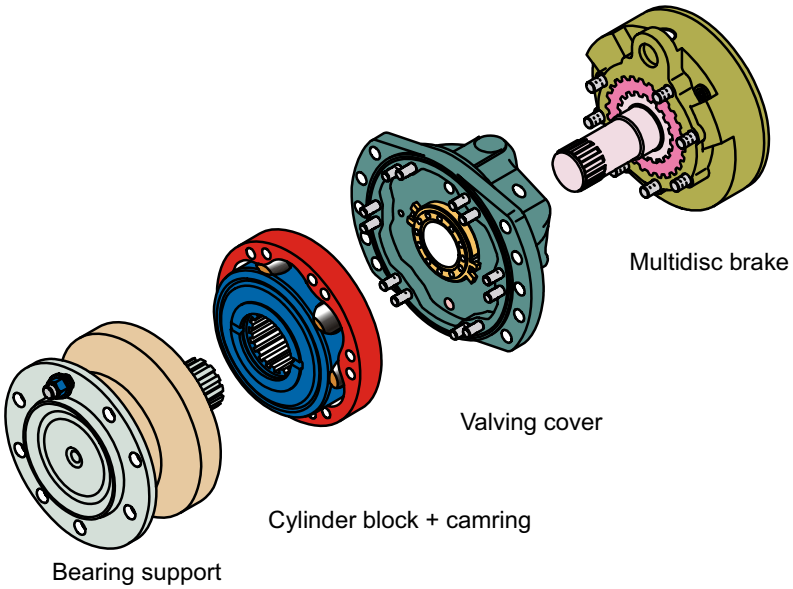
MZ motor

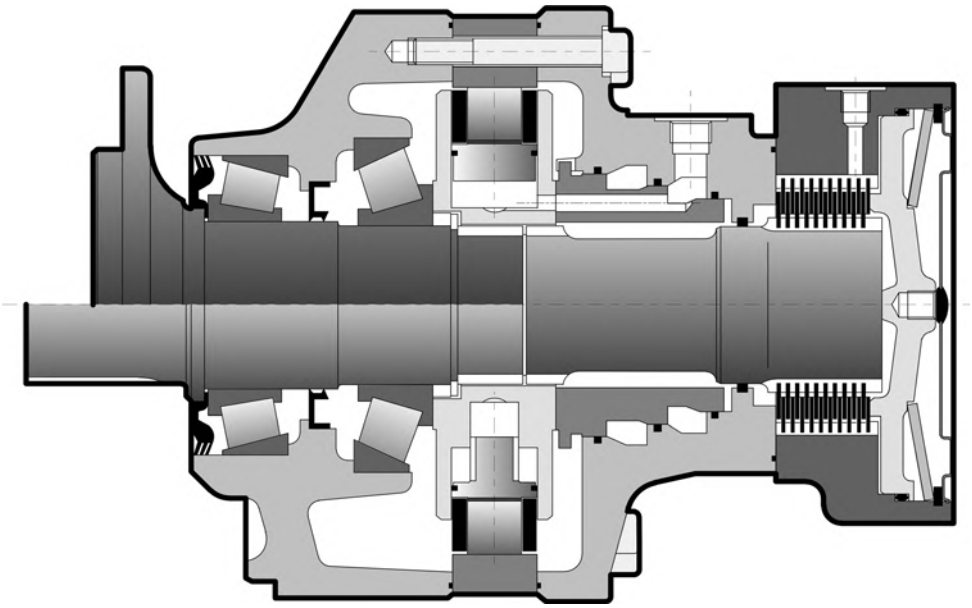
MF motor

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	cm³/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	510	410	372	343	275	250	230	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 =1/24π x displacement (cuin/rev) x 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	ParkingN.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 brakeParking break
- ✔ Enclosed in heavy duty bearing support
- ✔ Applied mechanically or by pressure

Brake size	Parking Emergeny 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	C	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
C	●	◆

For details, please go to the Technical Catalogs.

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™

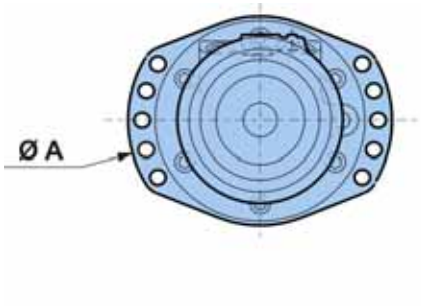
Valving types

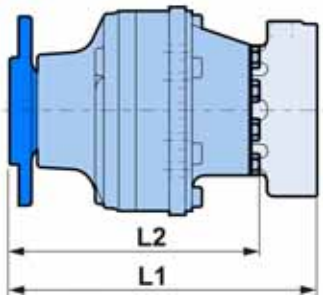
MS		02	03	05	08	11	18	25	35	50	83	125
1-displacement		●	●	●	●	●	●	●	●	●	●	●
2-displacement		●	●	●	●	●	●	●	●	●		
2-displacement symmetrical valving*							●	●	●	●	●	●
Exchange	Hot oil shuttle	●		●	●	●	●					
Twin-Lock™	Hydraulic traction control	●	●	●	●	●	●	●	●	●		
Chassis mountings	On the valving cover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

*: no preferential direction of rotation in small displacement

MS DIMENSIONS

Wheel motor

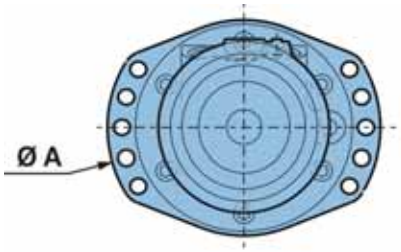


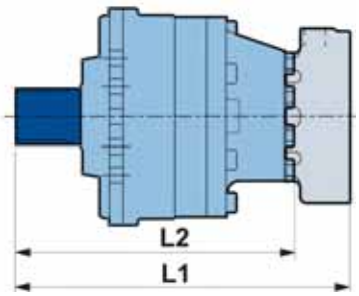


MS		02	03	05	08	11	18	25	35	50	83	125
A dia.	mm	238	238	300	335	375	425	485	485	485	555.5	555.5
	[in]	*[9.37]*	*[9.37]*	*[11.81]*	*[13.19]*	*[14.76]*	*[16.73]*	*[19.09]*	*[19.09]*	*[19.09]*	*[21.87]*	*[21.87]*
L1*	mm	310	296	335	367	412	476	565	591	713	797	865
	[in]	*[12.20]*	*[11.65]*	*[13.18]*	*[14.45]*	*[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]*		*[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]*		*[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]*		*[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]*		*[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	cm³/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]*	5 624 *[343.2]*
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]*	35 750 *[26 367]*
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	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

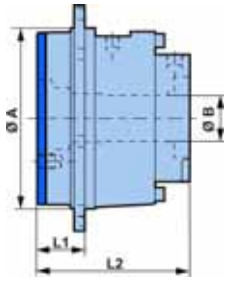
MK		04	D04	05	05[2]	09	12	18	23	35	47
1-displacement		●	●	●	●	●	●	●	●	●	●
2-displacement							●	●	●	●	●
2-displacement symmetrical valving[1]								●	●	●	●
Exchange	Hot oil shuttle						●	●	●		
Twin-Lock™	Hydraulic traction control						●	●	●		
Axial porting	Porting integrated into chassis mounting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

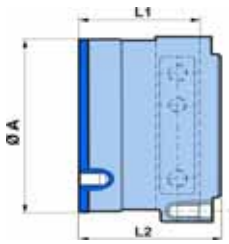
1: no preferential direction of rotation in small displacement
2: with axial porting

MK DIMENSIONS

MK04

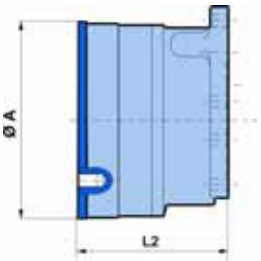
MKD04

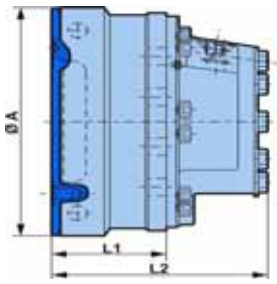




MK05

MK05 axial





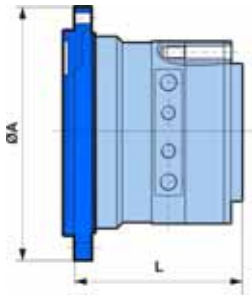
MK12-E12

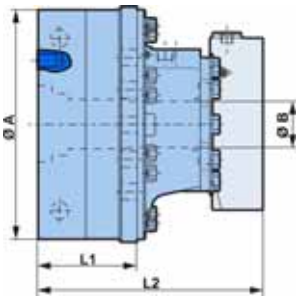
MK23-E23

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]*

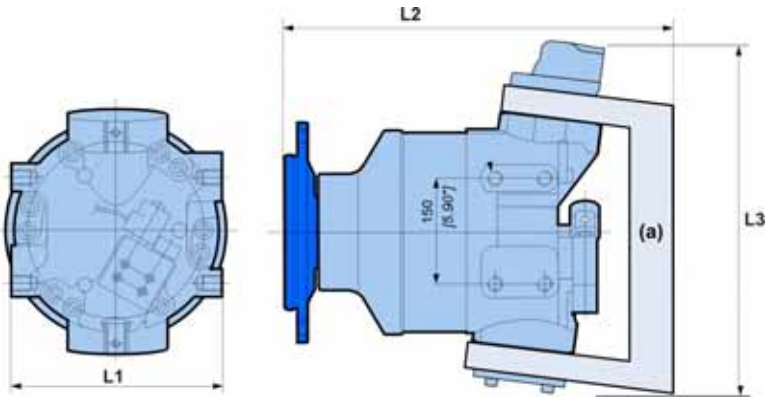
[2]: with axial porting

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



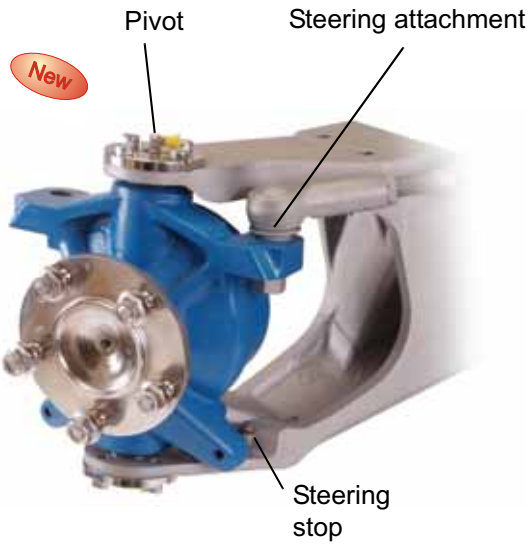
MG		11	21
L1	mm	300	300
	[in]	*[11.81]*	*[11.81]*
L2	mm	510	555
	[in]	*[20.08]*	*[21.85]*
L3	mm	505	505
	[in]	*[19.88]*	*[19.88]*
Weight	kg	210	230
	[lb]	*[463]*	*[507]*

MG11 - MG21caracteristics

	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]*

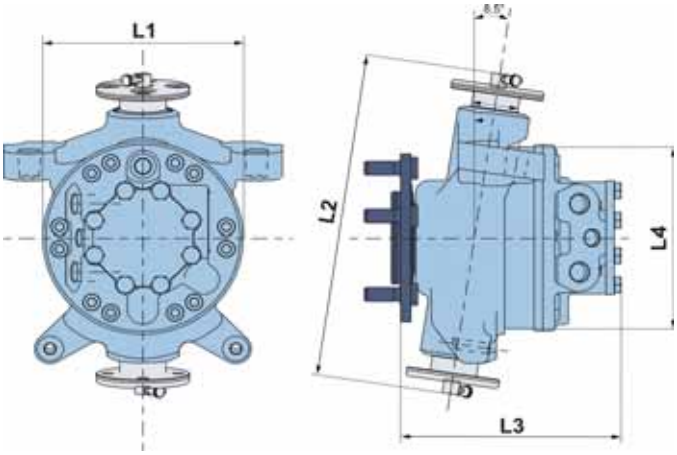
	MG11					MG21			
Displacement	837 *[51.1]*	943 *[57.5]*	1 048 *[63.9]*	1 147 *[70.0]*	1 259 *[76.8]*	1 674 *[102.1]*	1 886 *[115.1]*	2 096 *[128.1]*	2 294 *[140]*
Max. torque (th.)	6 000 *[4 425]*	6 750 *[4 978]*	7 500 *[5 531]*	8 200 *[6 048]*	9 000 *[6 638]*	12 000 *[8 850]*	13 500 *[9 957]*	15 000 *[11 063]*	16 400 *[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: 273N.m to 633 N.m,
- Displacement: 86 cm^3/tr to 398 cm^3/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 caracteristics

	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]*

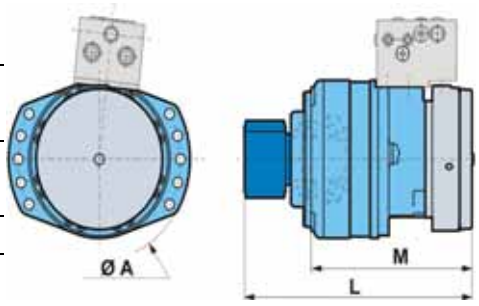
	MG 02				MGE 02		
Displacement	172 *[10.5]*	213 *[13.0]*	235 *[14.3]*	255 *[15.6]*	332 *[20.2]*	364 *[22.2]*	398 *[24.3]*
Max. torque (th.)*	1200 *[885]*	1500 *[1 106]*	1 680 *[1 239]*	1 800 *[1 227]*	2 100 *[1 548]*	2 300 *[1 696]*	2 500 *[1 843]*
Max. pressure	450 *[6 526]*				400 *[5 800]*		
Max. speed	510	410	372	343	275	250	230
Max. power	18 *[24]*				22 *[29.5]*		

MZ MOTORS

- For slewing drive,
- Direct drive,
- Up to 450 bar *[6 530 PSI],*
- High ef**ficiency,**
- 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** ***[4.4at 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 *[lbf.ft]*	43 at 87 *[318 at 640]*	74 at 130 *[548 at 961]*	124 at 198 *[914 at 1 463]*	166 at 268 *[1 222 at 1 977]*
Weight	kg	37	47	85	114
	[lb]	*[81.5]*	*[103.6]*	*[187.4]*	*[251.3]*

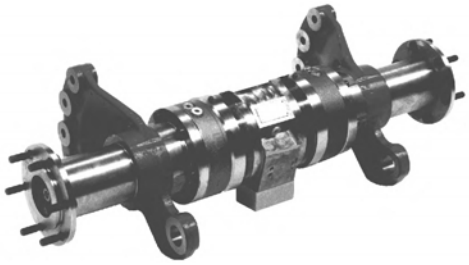


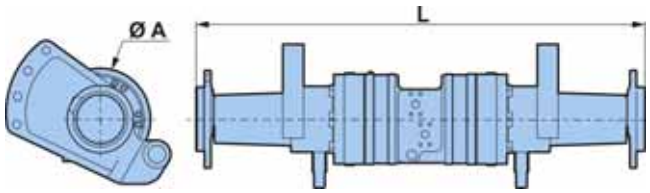
Valves fonctions

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

ES AXLES

- Axles for industrial lift trucks between 1.5 and 5 ton operating capacity
- From 215 to *[13.0 to 47.5 cu.in/rev.]*
- Mounting for the mast
- Two hydrobases
- Large hot oil shuttle
- Multidisc brakes





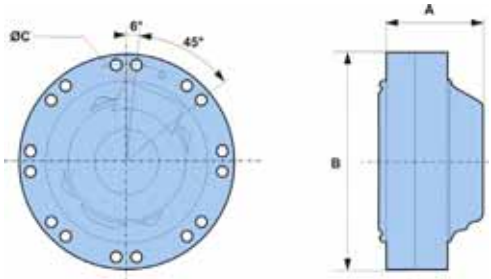
ES		02	05	08
A dia.	mm	185	245	315
	[in]	*[7.28]*	*[9.65]*	*[12.40]*
L	mm	960	1 180	1 285
	[in]	*[37.80]*	*[46.45]*	*[50.60]*
Weight	kg	130	180	320
	[lb]	*[287]*	*[397]*	*[705.5]*
Displacement	cm³/tr	213	468	780
	[cu.in/rev.]	*[13.0]*	*[28.6]*	*[47.6]*
Max. torque	N.m *[lbf.ft]*	1 500 *[1 106]*	3 350 *[2 470]*	5 600 *[4 130]*
Max. pressure	bar *[PSI]*	450 *[6 526]*		
Max. speed	RPM	310	240	170

Documentation n° A08002X

To know the other available displacements, consult the MS range displacement table, p 8

MF HYDROBASES

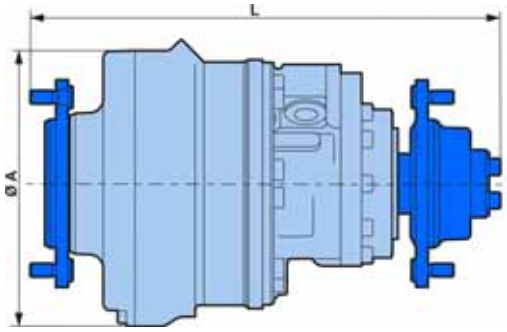
- Hydraulic assist drive for on road and off road applications.
- Rotating cam motor with integrated free wheeling system



MF		08	E08	18
1-displacement		●		●
2-displacement				●
Displacement	cm³/tr *[cu.in/rev.]*	780 *[47.6]*	1 043 *[63.6]*	1 747 *[106.5]*
Max. torque	N.m *[lbf.ft]*	5 580 *[4 100]*	7 280 *[5 370]*	12 500 *[9 210]*
Max.pressure	bar *[PSI]*	450 *[6 350]*	400 *[5 800]*	450 *[6 350]*
Max speed	RPM	140	125	145
Max. speed in free-wheeling	RPM	600		-
Max. power	kW *[HP]*	41 *[55]*	41 *[55]*	70 *[94]*
A	mm *[in]*	105 *[4.13]*		188 *[7.40]*
B dia.	mm *[in]*	257 *[10.12]*		334 *[13.15]*
C dia.	mm *[in]*	230 *[9.29]*		295 *[11.61]*

MD MOTOR

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

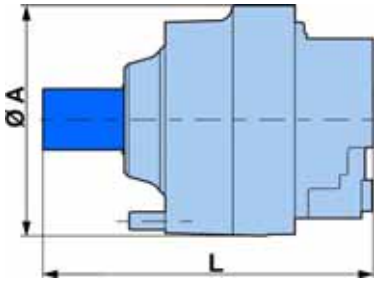


MD		11
Displacement	cm³/tr *[cu.in/rev.]*	1 048 *[64.0]*
Max. torque	N.m *[lbf.ft]*	7 500 *[5 531]*
Max. pressure	bar *[PSI]*	450 *[6 526]*
Max. speed	RPM	185
Max. power	kW *[HP]*	50 *[67]*
Max. braking torque	N.m *[lbf.ft]*	7 000 *[5 163]*
A dia.	mm *[in]*	328 *[12.91]*
L	mm *[in]*	565 *[22.24]*
Weight	kg *[lb]*	140 *[308.6]*

For the other available displacements, consult the MS range displacement table, p 8.

ML MOTOR

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

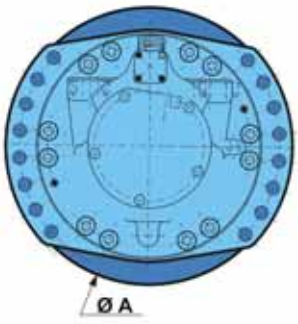


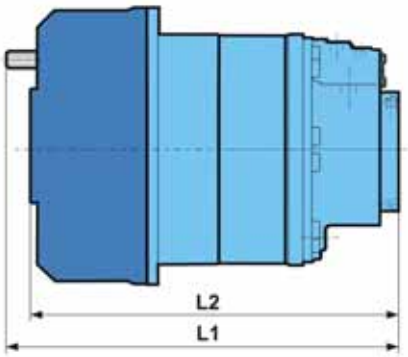
ML		06	E06	
Displacement	cm³/tr *[cu.in/rev.]*	630 *[38.44]*	702 *[42.84]*	842 *[51.38]*
Max. torque	N.m *[lbf.ft]*	3 800 *[2 800]*	4 240 *[3 127]*	5 087 *[3 752]*
Max. pressure	bar *[PSI]*	380 *[5 511]*		
Max. speed	RPM	226	322	241
Max. power	kW *[HP]*	30 [22]		
Max. braking torque	N.m *[lbf.ft]*	4 500 *[3 319*		
A dia.	mm *[in]*	233 *[9.17]*		
L	mm *[in]*	338 *[13.31]*		
Weight	kg *[lb]*	50 *[110.2]*		
Documentation	n°	A02305F (dvplt)		

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	485
	[in]	*[19.09]*
L1*	mm	606
	[in]	*[23.85]*
L2	mm	594
	[in]	*[23.39]*
Weight*	kg	435
	[lb]	*[1 069*

CDM 170-050 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 CDM170-050 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**	17 000 *[12 500]*			
		In intermittent duty	31 300 *[23 000]*			
	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]*			

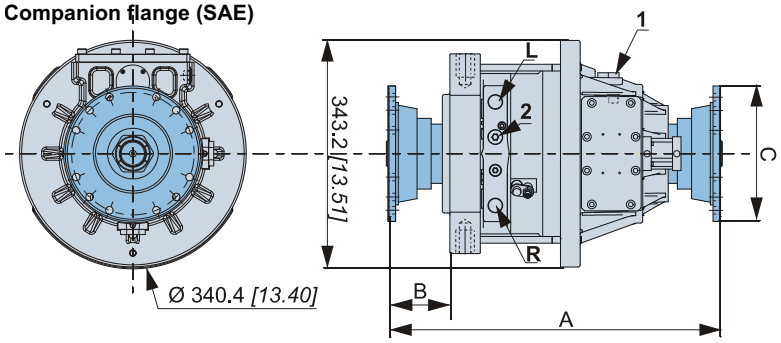
* Contact your Poclain Hydraulics application engineer for approval of higher speeds.

** 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.

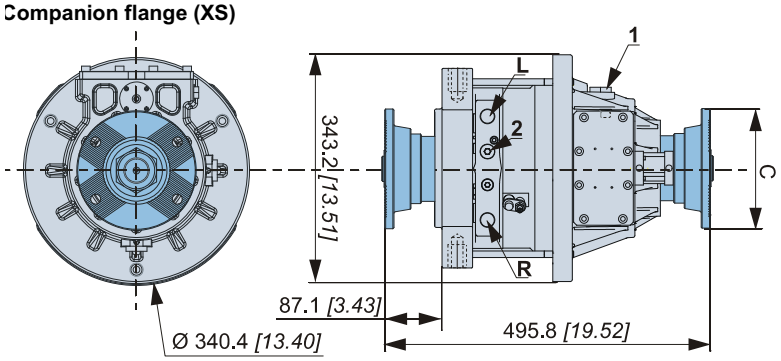
Dimensions

Companion flange (SAE)



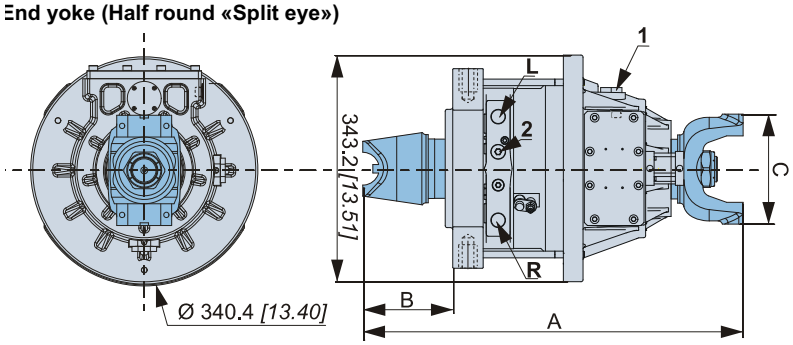
	Series	
	1650/1710	1810
A	476.8 *[18.77]*	495.8 *[19.52]*
B	77.7 *[3.06]*	87.1 *[3.43]*
C	203.2 *[8.00]*	196.9 *[7.75]*

Companion flange (XS)



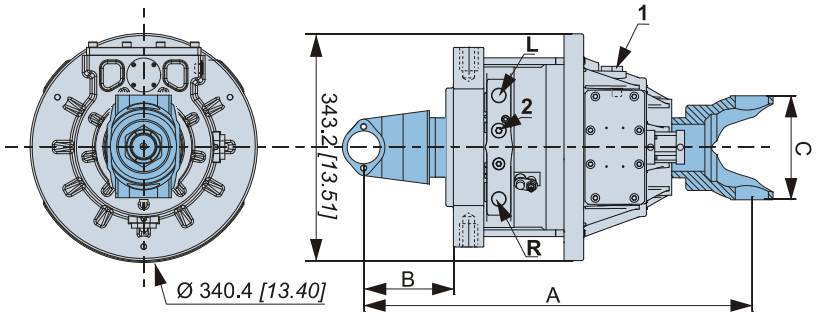
	Series	
	XS 150	XS 180
C	155 *[6.10]*	180 *[7.09]*

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»)



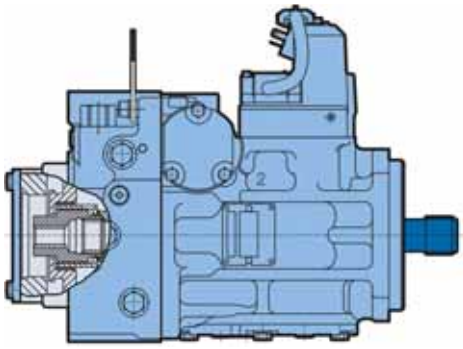
	Series	
	1710	1810
A	581.7 *[22.90]*	597.4 *[23.52]*
B	130.0 *[5.12]*	137.9 *[5.43]*
C	154.8 *[6.09]*	191.7 *[7.54]*

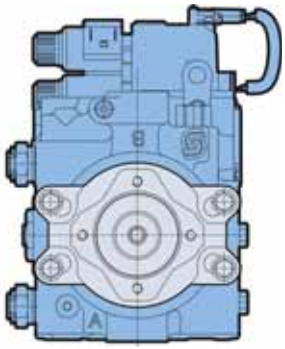
P90 PUMPS

- Variable displacement
- For closed loop circuits
- Rugged and compact
- Integral charge pump
- Low noise level
- Tandem mounting available

P90 PUMPS

- ✔ Variable displacement
- ✔ Up to 480 bar pressure *[6 962 PSI]*
- ✔ Single or tandem
- ✔ Three frame sizes
- ✔ Six displacements
- ✔ For use in Poclain Hydraulics systems and SmartDrive™
- ✔ Rear auxiliary mount :
  - SAE A, B, C, D, E





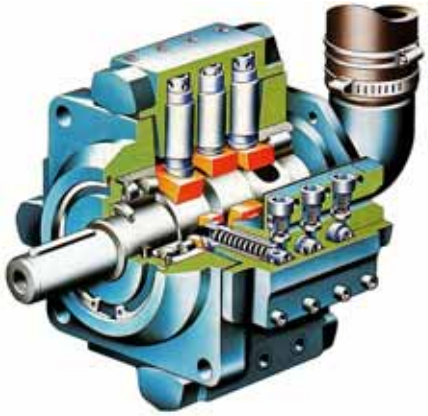
P90		055	075	100	130	180	250
Displacement	cm³/tr *[cu.in/rev.]*	*55 [3.35]*	*75 [4.58]*	100 *[6.10]*	130 *[7.93]*	180 *[10.98]*	250 *[15.25]*
Max. pressure	bar *[PSI]*	480 *[6 962]*					
Max. speed	RPM	4 250	3 950	3 650	3 400	2 850	2 500
Weight	kg *[lb]*	40 *[88.2]*	49 *[108]*	68 *[150]*	88 *[194]*	136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

Options available on the entire range

- ✔ Speed sensor

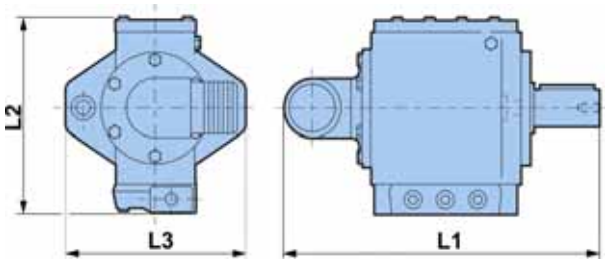
PL PUMPS

- Fixed displacement
- For open loop circuits
- Up to450 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]*

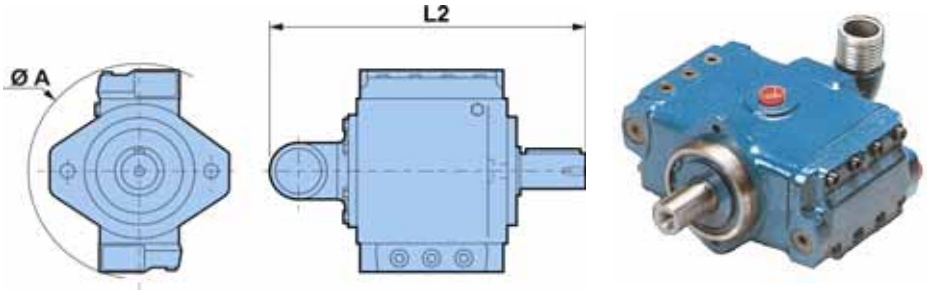


Pump type		PL1H14					
Displacement	cm³/tr *[cu.in/rev.]*	17.5 *[1.07]*	20 *[1.22]*	22 *[1.34]*	25 *[1.53]*	28.5 *[1.74]*	32 *[1.95]*
Max. pressure	bar *[PSI]*	450 *[6 526]*					
Max. speed	RPM	3 100	3 000	2 900	2 800	2 600	2 400
Max. power	kW *[HP]*	41 *[55]*	45 *[60]*	48 *[64]*	52 *[70]*	56 *[75]*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

PL PUMPS

Two output flows

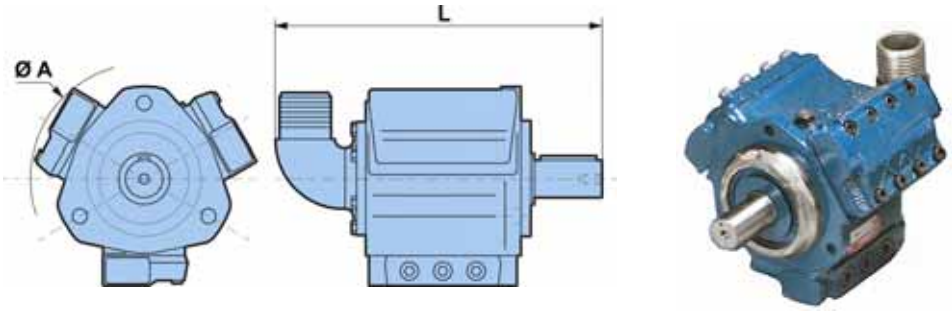
PL 2H14	mm	[in]
L	397	[15.63]
A dia.	320	[12.60]
	kg	[lb]
Weight	38	[84]



Pump type		PL2H14					
Displacement	cm³/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

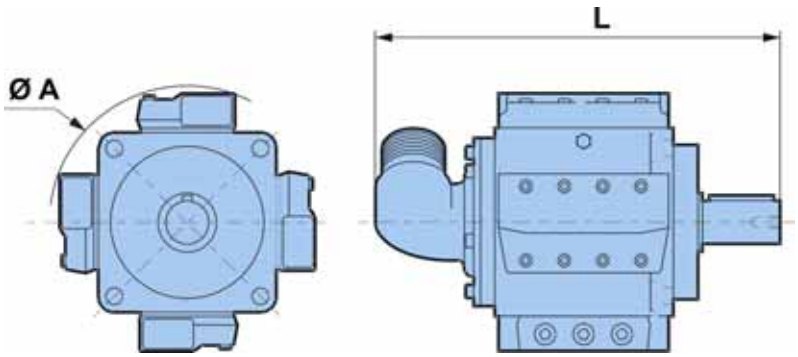
PL 3H14	mm	[in]
A dia.	320	[12.60]
L	397	[15.63]
	kg	[lb]
Weight	47	[104]



Pump type		PL3H14						
Displacement	cm³/tr [cu.in/rev.]	3 x 17.5 [3 x 1.07]	3 x 20 [3 x 1.22]	3 x 22 [3 x 1.34]	3 x 25 [3 x 1.53]	3 x 28.5 [3 x 1.74]	3 x 32 [3 x 1.95]	3 x 37 [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

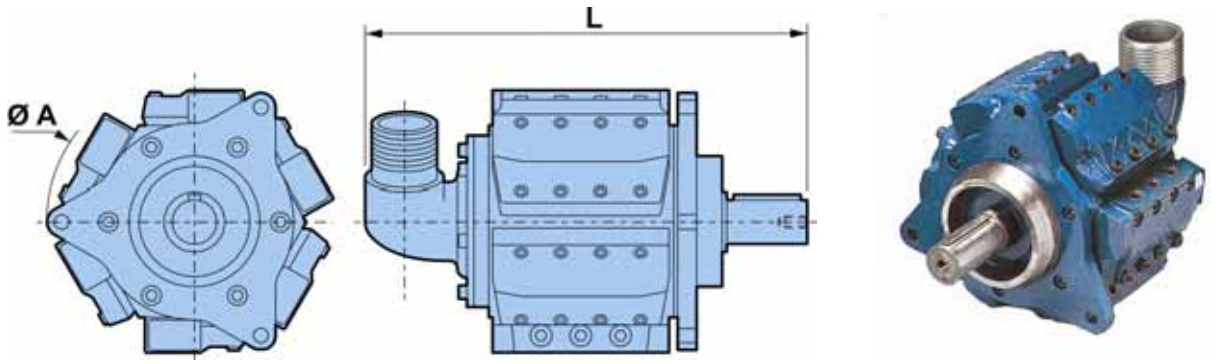


Pump type		PL4H10		PL4H18			PL4H20	
Displacement	cm³/tr *[cu.in/rev.]*	4 x 10.3 *[4 x 0.63]*	4 x 12.5 *[4 x 0.76]*	4 x 33 *[4 x 2.01]*	4 x 44 *[4 x 2.69]*	4 x 52 *[4 x 3.17]*	4 x 58 *[4 x 3.54]*	4 x 74 *[4 x 4.52]*
Max. pressure	bar *[PSI]*	450 *[6 526]*		450 *[6 526]*			450 *[6 526]*	
Max. speed	RPM	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	cm³/tr *[cu.in/rev.]*	4 x 17.5 *[4 x 1.07]*	4 x 20 *[4 x 1.22]*	4 x 22 *[4 x 1.34]*	4 x 25 *[4 x 1.53]*	4 x 28.5 *[4 x 1.74]*	4 x 32 *[4 x 1.95]*	4 x 37 *[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	cm³/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	cm³/ *[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

	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
- Pression max. de 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]*

[1]Dual 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]*		70 *[2.76]*	87.5 *[3.44]*		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 *[PSI]*	Cut-in/Cut-out	180 / 210 *[2611 / 3 045]*							
	Service	120 *[1 740]*							
Max. flow L/min *[GPM]*	Auxiliary	30 *[7.9]*	45 *[11.9]*	120 *[31.7]*	30 *[7.9]*	45 *[11.9]*	120 *[31.7]*	30 *[7.9]*	45 *[11.9]*
	Accumulator	15 *[3.96]*							
Length	mm *[in]*	60 *[2.36]*		70 *[2.75]*	60 *[2.36]*		70 *[2.75]*	60 *[2.36]*	
Width	mm *[in]*	100 *[3.94]*		112 *[4.41]*	100 *[3.94]*		112 *[4.41]*	173 *[6.81]*	
Height	mm *[in]*	95 *[3.74]*		95 *[3.74]*	95 *[3.74]*		95 *[3.74]*	135 *[5.31]*	

*: 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

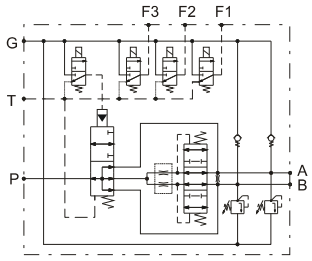
- ✔ High pressure
- ✔ Compact
- ✔ Operates with all products Poclain Hydraulics

Flow dividers FD

- ✔ For open or closed loop circuits
- ✔ Unidirectional or bidirectional
- ✔ Hydraulic or electric by-pass
- ✔ From 0 to 3 solenoid valves

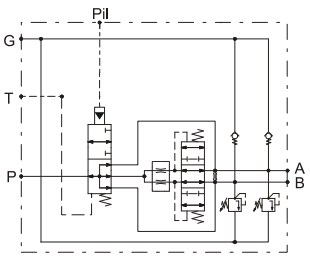
Flow divider			FD 20	FD 25
Mass	kg *[lb]*	without valves	8.50 *[18.74]*	14.0 *[30.86]*
		with HP valve	9.00 *[19.84]*	15.0 *[33.06]*
		With HP valve and 3 solenoid valves	11.2 *[24.70]*	18.2 *[40.12]*
Max. pressure	bar *[PSI]*		450 *[6 527]*	
Max. input flow- Max.	L/min *[GPM]*	Ratio 50/50	150 *[39.62]*	300 *[79.25]*
		Ratio 70/30	110 *[29.05]*	215 *[56.79]*
		Ratio 80/20	95 *[25.09]*	190 *[50.19]*

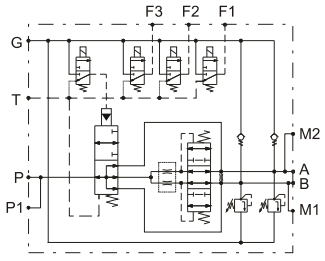
HP valve, 3 solenoid valves and electric by-pass



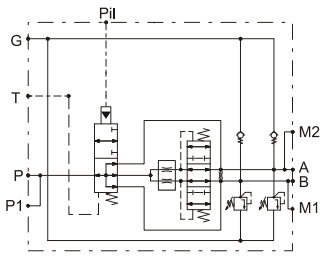
FD20

HP valve and hydraulic by-pass



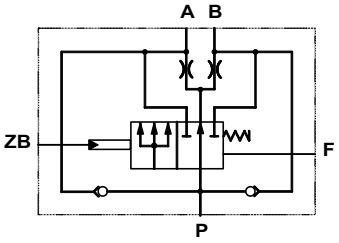


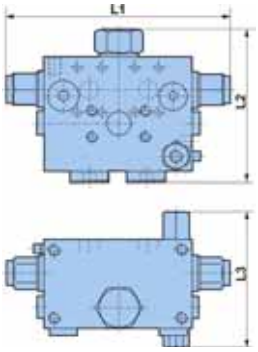
FD25

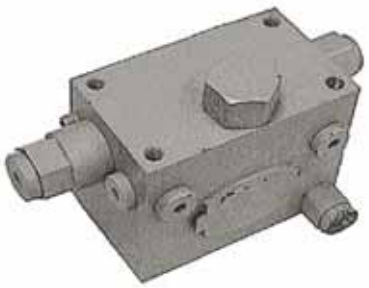


Flow divider VQD

- ✔ Higher safety, performance & reliability
- ✔ For single & dual circuit
- ✔ Small and light weight



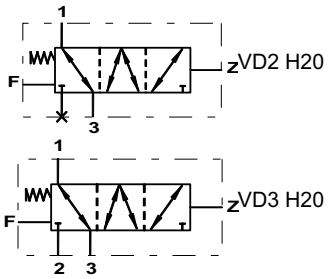


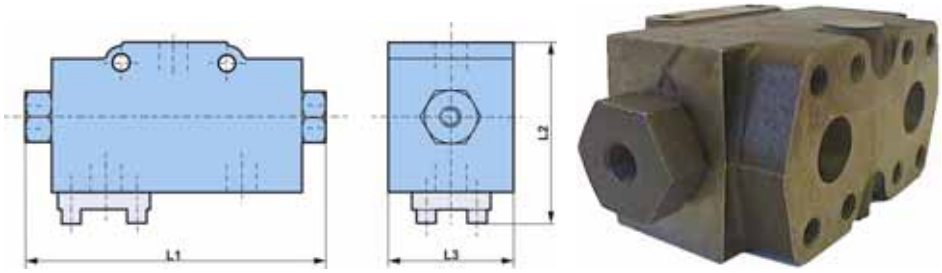


Flow divider		VQDH20
Nominal flow	L/min *[GPM]*	130 *[34.3]*
Max. pressure	bar *[PSI]*	450 *[6 526]*
L1 max.	mm *[in]*	272 *[10.71]*
L2	mm *[in]*	165 *[6.50]*
L3 max.	mm *[in]*	145 *[5.71]*
Weight	kg *[lb]*	14.5 *[32]*

High pressure directional valves VD

- ✔ Circuit bypass or cut-off

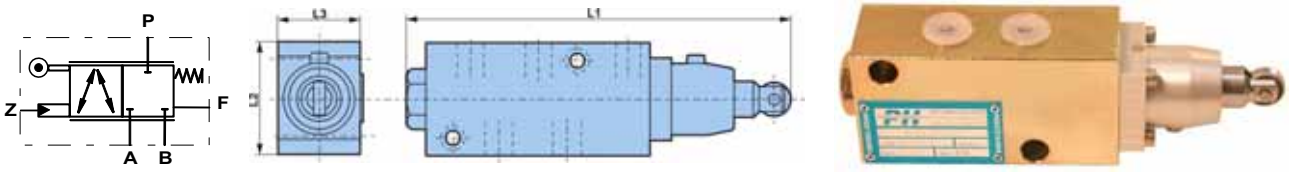




Directional valves		VD2 H20	VD2 H25	VD3 H20	VD3 H25
Function		Locking		Bypass	
Nominal flow	L/min *[GPM]*	130 *[34.3]*	260 *[68.7]*	130 *[34.3]*	260 *[68.7]*
Max. pressure	bar *[PSI]*	450 *[6 526]*			
L1 max.	mm *[in]*	188 *[7.40]*			
L2	mm *[in]*	130 *[5.12]*		100 *[3.94]*	
L3 max.	mm *[in]*	84 *[3.31]*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

Low pressure directional valves VD

- ✔ Control flow on Twin-Lock™ circuits



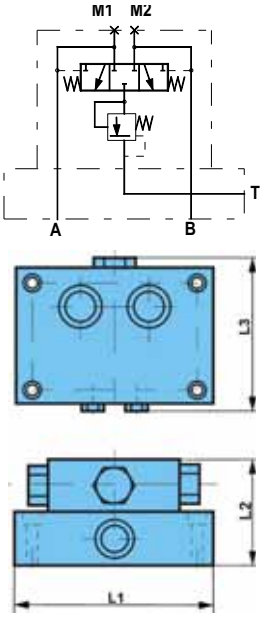
Directional valves		VD2H08
Nominal flow	L/min *[GPM]*	20 *[5.3]*
Max. pressure	bar *[PSI]*	450 *[6 526]*
L1 max.	mm *[in]*	214 *[8.43]*
L2	mm *[in]*	63 *[2.48]*
L3 max.	mm *[in]*	46 *[1.81]*
Weight	kg *[lb]*	2.7 *[6.0]*

Exchange block VM

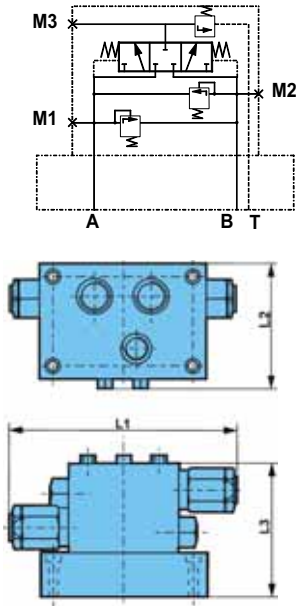
- ✔ Send part of the flow to the cooler
- ✔ :Two versions:

- A = hot oil shuttle valve
- B = hot oil shuttle + cross-over high pressure relief valve

VME (a)



VME (b)



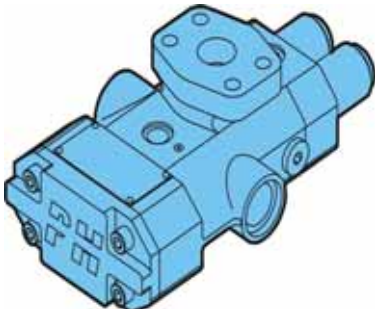
		VME A	VME B
Max. pressure	bar *[PSI]*	420 *[6 100]*	
L1 max.	mm *[in]*	150 *[5.90]*	205 *[8.07]*
L2	mm *[in]*	81 *[3.11]*	112.5 *[4.42]*
L3 max.	mm *[in]*	117.5 *[4.63]*	128.5 *[5.06]*
Weight	kg *[lb]*	7.8 *[17.2]*	11.5 *[25.5]*

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

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 the SmartDrive type

SmartDrive™ Easy ECU

New

SmartDrive™ Auto 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

New

SD-Displays

SmartDrive™Canalogger and its software (Canalogger Explorer™)

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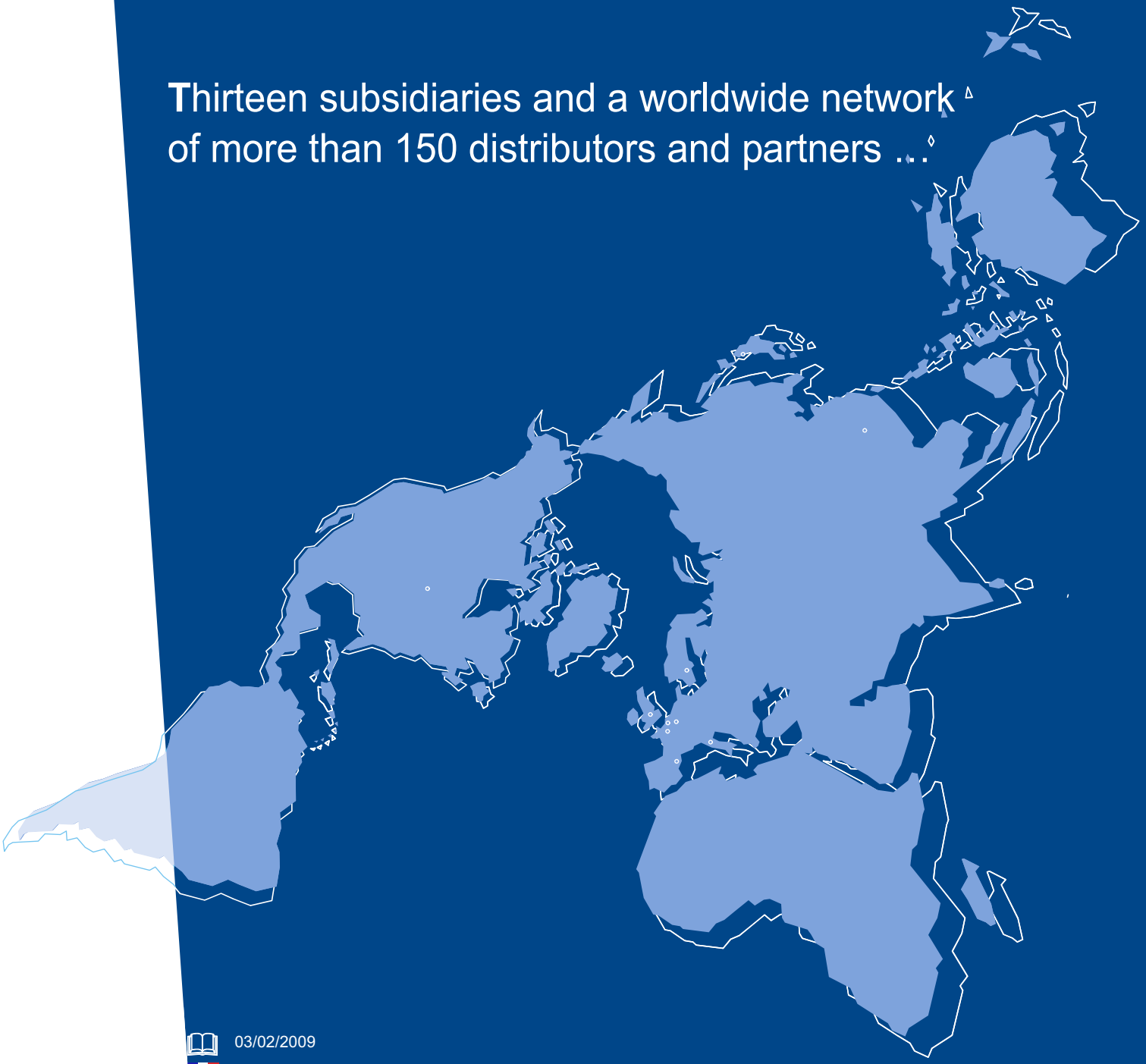

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