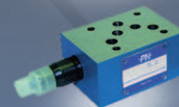


Valves

Check valves



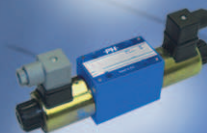
Pressure valves



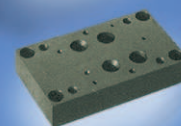
Flow control valves



Directional control valves



Connecting components



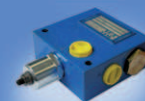
Electric accessories for valves



Brake valves



Flushing valves



Dedicated Poclain Hydraulics system valves
and customized valves



Check valves



■ Features: a large connecting and modular offer

	Size (NG)			Operating pressure		Flow rate		Connecting dimensions*	Hydraulic schematics
	4	6	10	bar	[PSI]	l/min	[GPM]		
<i>Direct operated valves</i>									
VP-NV (p5)	■	■		350	5 076	100	26.4	CETOP	
VP-NOV (p15)	■	■		350	5 076	100	26.4	CETOP	
<i>Pilot operated valves</i>									
NOV-4D (p9)	■			350	5 076	30	7.9	in line M, G, UNF	
NOV-6D (p13)		■		350	5 076	60	15.9	in line G, UNF	
NOV-6E (p11)	■	■	■	350	5 076	60	15.9	in line G, UNF	
<i>Counterbalance piloted valves</i>									
BZV (p19)		■		270	3 916	60	15.9	in line M, G, UNF	
VP-BZV (p23)		■		270	3 916	60	15.9	CETOP	

Pressure valves



■ Features: different mounting systems and direct/pilot operated valves

	Size (NG)			Operating pressure		Flow rate		Connecting dimensions*	Operation	Hydraulic schematics
	4	6	10	bar	[PSI]	l/min	[GPM]			
VVP (p5)	■	■		400	5 802	120	31.7	cartridge in line	direct	
VVB2 (p9)		■		210	3 046	60	15.9	in line M, G, UNF	direct	
VPLB15 (13)				Please consult our application engineers		70	20	in line M	direct	
RT (p17)	■	■	■	350	5 076	90	23.8	cartridge	size 4: direct sizes 6 to 10: pilot	
VP-RT (p21)		■	■	350	5 076	90	23.8	CETOP	pilot	



NOV Check valve on car carrier



VVP Pressure valve on snow plow



Pressure valve for mower

*Connecting dimensions: In line: Metric (M) = ISO 9974 ; Gas (G) = ISO 1179 ; UNF (UNF) = ISO 11926-1 ; CETOP = ISO 4401 - (pXX send to the specific technical catalog page)

Flow control valves

■ Features: 2 or 3 ways valves, pressure compensated



	Size (NG)		Operating pressure		Flow rate		Connecting dimensions*	Setting method	Hydraulic schematics
	6	10	bar	[PSI]	l/min	[GPM]			
<i>Throttle/check valve</i>									
VP-NDV (p5)	■	■	350	5 076	100	26.4	CETOP	manual	
<i>Pressure compensated flow control valves</i>									
TVD (p9)	■		350	5 076	16	4.2	CETOP (ISO 6264)	manual mechanical	
TVTC (p13)	■		350	5 076	50	13.2	in line M, G, UNF	manual	
TVTP (p21) Proportional	■		350	5 076	90	23.8	cardridge in line G, UNF	electric, manual	
<i>Flow dividers</i>									
DTP (p25)	■	■	350	5 076	70	18.5	in line M, G, UNF		
VQD (p29)			450	6 526	130	34.3	in line M, G, UNF		
FD (p32)			450	6 526	300	80	in line M, G, UNF	electric, hydraulic	

Flushing valves

■ Features: a very compact valve to bleed hot oil from the low pressure side of a hydrostatic transmission circuit to be cooled, filtered or used as a source of oil for flushing other pump and motor case.

	Max. pressure		Exchange flow		Connecting dimensions*	Hydraulic schematics
	bar	PSI	L/min	GPM		
VE 10	450	6 526	10	2.6	in line M, G, UNF	
VE 30	450	6 526	30	7.9		
VE 60	450	6 526	60	15.9		



VE60



TVTC Flow control valve for olive harvester



DTP Flow divider for fork positioning



VE Flushing valve for airport tractor

Directional control valves

- Features: wide range of spool types; low pressure drops; high reliability up to 250 bar (3 600 PSI) on the T port; up to 350 bar (5 077 PSI) on the working ports
- ➔ The Poclair Hydraulics specificity: - a large range of 6/2, 8/3 selector valves.



	Size (NG)				Operating pressure		Flow rate		Actuation	Modular Mounting	Non modular in line connection	Hydraulic schematics (examples)
	4	6	10	16	bar	[PSI]	l/min	[GPM]				
2/2												
KV poppet (p29)		■			210	3 046	30	7.9	electrical		M, G, UNF	
KVC (p5)	■				250	3 626	35	9.2	mechanical		M, G, UNF	
new KVC-NV (p7)		■			250	3 626	40	10.5	mechanical		M, G, UNF	
3/2												
KVC (p33)	■				160	2 320	16	4.2	electrical		M, G	
new KVC (p37)			■		350	5 077	100	26.4	electrical		M, G, UNF	
4/2												
PKV (p17)		■	■		210	3 046	60	15.8	automatic	CETOP		
PKV-T (p21)		■			210	3 046	30	7.9	automatic	CETOP		
4/2 and 4/3												
KV (p9)		■	■		350	5 077	100	26.4	mechanical	CETOP		
KV (p40)		■			350	5 077	75	19.8	electrical	CETOP		
KV (p46)			■		350	5 077	120	31.6	electrical	CETOP		
KV (p25)		■	■		350	5 077	130	34.2	hydraulic	CETOP		
KV (3ko) (p59)		■			250	3 626	40	10.5	electrical	CETOP		
KV (p53)				■	350	5 077	300	79	electrical	CETOP		
KVP proportional (p65)		■			350	5 077	30	7.9	electrical	CETOP		
KVM (p69)		■	■		350	5 077	40	10.5	electrical	bankable	M, G, UNF	
6/2												
KV (p13)		■	■		350	5 077	120	31.6	mechanical		M, G, UNF	
KV (p77)		■			350	5 077	50	13.2	electrical		M, G, UNF	
KV (p81)			■		350	5 077	120	31.6	electrical		M, G, UNF	
KV-6K/2 (p89)		■			250	3 626	50	13.2	electrical		M, G, UNF	
KV 6/2 (p85)				■	350	5 077	250	65.8	electrical		G, UNF	
KVH (p93)		■			315	4 569	50	13.2	electrical	bankable	M, G, UNF	
(KVH 6/2) (p97)				■	315	4 569	120	31.6	electrical	bankable	M, G, UNF	

	Size (NG)				Operating pressure		Flow rate		Actuation	Modular Mounting	Non modular in line connection	Hydraulic schematics (examples)
	4	6	10	16	bar	[PSI]	l/min	[GPM]				
6/3												
new KV (p101)	■				210	3 046	6	1.58	electrical		M, G	
8/3												
KV (p103)		■			250	3 626	50	13.2	electrical		M, G, UNF	

Connecting components

■ Features: 3 solutions to eliminate the use of pipe connections, according your space and the evolution of the valving system.

→ Benefits:

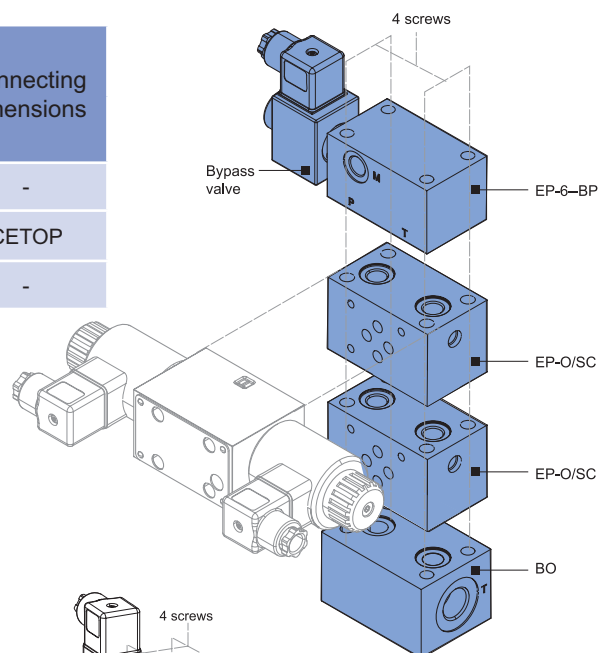
- minimize the installing area and space.
- no expert skill is required to assemble and furthermore, a supplement and a change to the circuit can easily and quickly be carried out.
- no more problems such as oil leaks, vibration and noise resulting from pipes and tubes

A- CETOP mounting type EV (p15)

CETOP mounting type EV (p21)	Sizes		Max. pressure bar [PSI]	Flow rate l/min [GPM]	Connecting dimensions
	6	10			
BO base block	■	■	350 5 077	120 31.6	-
EP stacking element 'O' / 'SC'	■	■			CETOP
EP stacking element «BP»	■	■			-
SET-EV screw kit	■	■			

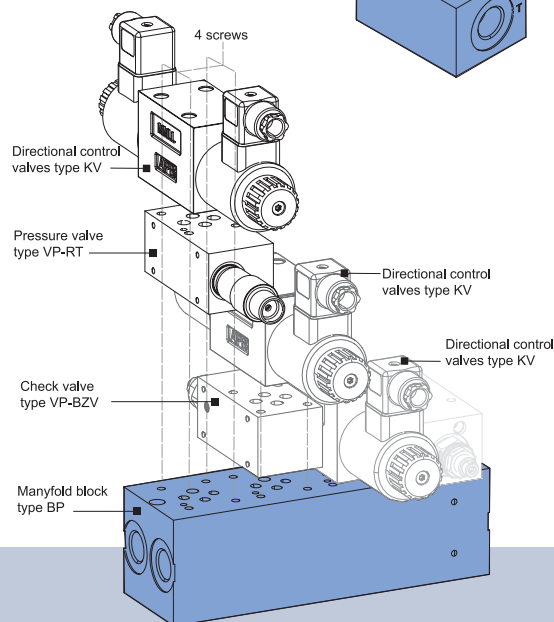
Don't forget the associated accessories:

VIJAR plugs, test points
PRIKL RI thread reducer
MAN pressure gauge
PIPA MAN gauge isolator valve



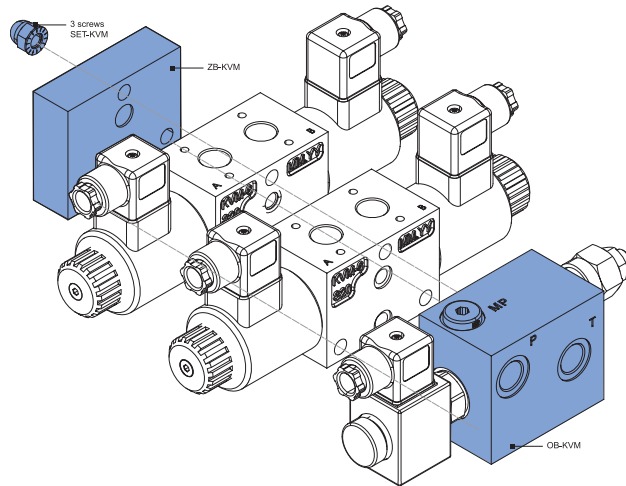
B - CETOP mounting on subplate/manifold (p5 to 9)

CETOP mounting on subplate/manifold (p21)	BP (max. 10 stations)	PP-KV (max. 1 station)
Size NG	6 10 16	■ ■ ■
Max. pressure	bar [PSI]	350 5 077
Flow rate	l/min [GPM]	120 31.6
Flow rate		300 79.0
Connecting dimensions	CETOP	CETOP
Thread connections	G	G

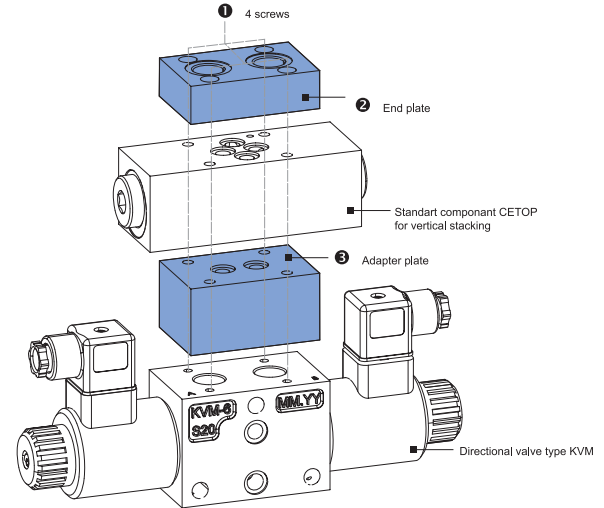


C- Bankable mounting for KVM directional valve range (p33)

C- Bankable mounting for KVM directional valve range	Size	Op. pressure		Flow rate		Connecting dimensions
		bar	[PSI]	l/min	[GPM]	
Inlet block OB-KVM	■	350	5 077	40	10.5	Into pipeline
Outlet block ZB-KVM	■	350	5 077	40	10.5	Into pipeline
Vertical Stacking STACK KVM	■	350	5 077	40	10.5	CETOP
Screw set SET-KVM	■					



Vertical Stacking on KVM range thanks to STACK -KVM elements (= ①+②+③)



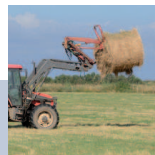
Electric components



Electric and electronic components	Size	Switching capacity	Operating pressure	Connecting dimensions	Electrical connector
Pressure switch TS, VP-TS <small>(p5)</small>	4	-	400 bar 5 082 PSI	onto a subplate, into pipelines, vertical stacking, DIN 24340, ISO 4401	plug-in connector
Control lever KRSS <small>(p15)</small>	-	5A / 12V	-	inner thread, M10	FASTON A6, 3-0, 8, EN 61210
MR Solenoids for directional control valves <small>(p11)</small>	045/1	26 W	250 bar 3 626 PSI	M19x1 Into valve body	- Plug-in to ISO 4400 - AMP junior timer - Deutsch connector
	045	29 W		M27x1,5 - Into valve body	
	060	45 W			
Amplifier for proportional solenoids R59 <small>(p17)</small>		1,8A 30W			Plug-in to ISO 4400
Lever switch NS <small>(p19)</small>		15 W		Flange Φ 75	Plug-in to ISO 4400



KV 4/3 on vineyard sprayer



KV 6/2 on tractor front loader



KV 4/3 on autocrane

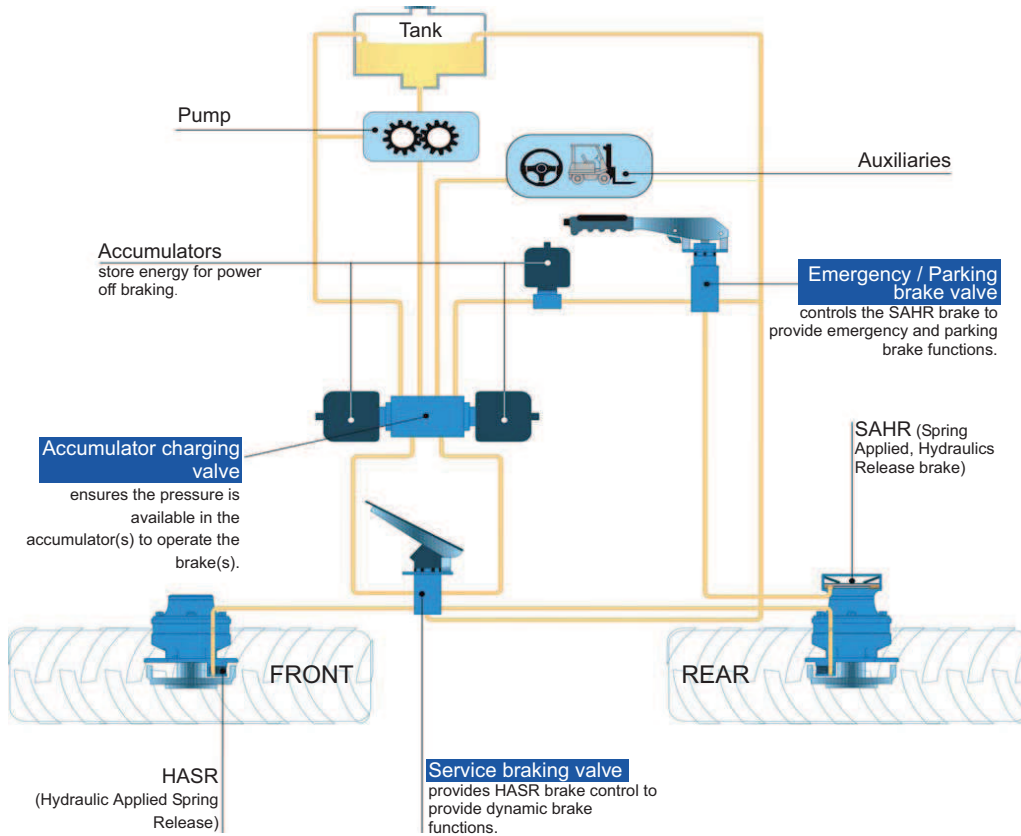
Brake valves

■ Features:

- Max pressure: 210 bar (3000 PSI)
- Temperature de -20°C to 120°C (-4 to 248°F)
- Fluid: 10µm filtered mineral oil
- For single & dual circuit

➔Benefits:

- enhance hydrostatic braking performance for more safety and reliability
- add synchronized control for combinations of both hydrostatic and mechanical brake systems on a single vehicle
- easy to integrated to an existing braking circuit

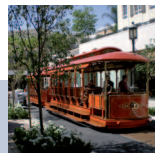


Accumulator charging valves (@p35)

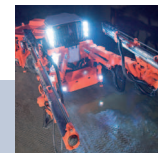
	Cut-in/ cut-out pressure range				Flow rate			
	Cut-in bar	Cut out	Cut-in / Cut out PSI		Auxiliary		Accumulator	
			L/min	GPM	L/min	GPM		
VB100 (single circuit)	110	130	1 595	1 885	45➔120	11.9➔31.7	2.75➔15	0.73➔3.96
VB200 (double circuit)	120	140	1 740	2 031				
	135	160	1 958	2 321				
	160	190	2 321	2 756				
	170	200	2 466	2 901				
	180	210	2 611	3 046				



VB002 on tunnel truck mixer



VB00E on trolley



VB220 on drilling machine (explosion proof)

Brake actuators (p5)

	Operating pressure		Brake type	Circuit	Valve type
	bar	PSI			
VB 010	20 → 120	290 → 1740	Service brake	Single-circuit	Modulating
VB 020	30 → 120	435 → 1740		Dual-circuit	Modulating
VB 012	20 → 120	290 → 1740	Service brake with inching	Single-circuit	Combined
VB 022	30 → 120	435 → 1740		Dual-circuit	Combined
VB 002	10 → 120	145 → 1740	Emergency / Parking brake	Single-circuit	Reverse modulating
VB 00E	10 → 100	145 → 1740		Dual-circuit	Reverse modulating



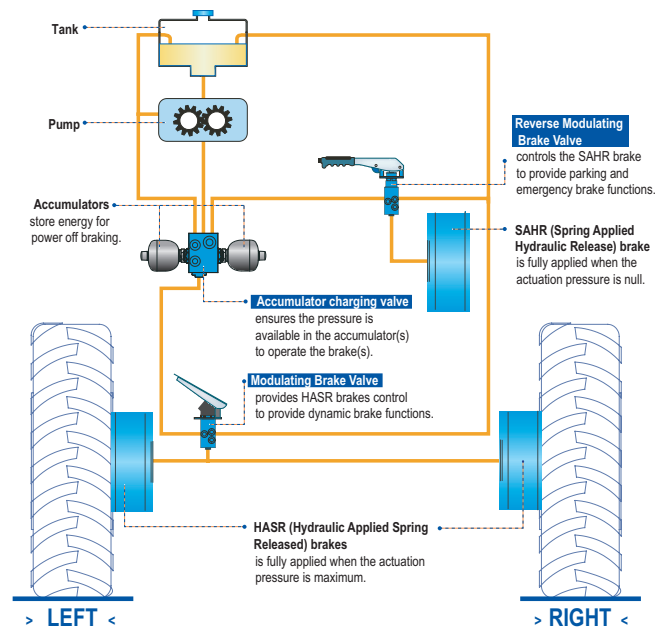
Power brake valves (p51) = brake actuator + accumulator charging valve

	Cut-in/ cut-out pressure range				Operating pressure		Flow rate			
	Cut-in/ Cut out		Cut-in/ Cut out		bar	PSI	Auxiliary		Accumulator	
	bar	PSI	bar	PSI			L/min	GPM	L/min	GPM
VB110 (single circuit)	110	130	1 595	1 885	30 → 120	435 → 1740	45 → 120	11.9 → 31.7	2.75 → 15	0.73 → 3.96
VB220 (double circuit)	120	140	1 740	2 031						
	135	160	1 958	2 321						
VB -22E	160	190	2 321	2 756						
	170	200	2 466	2 901						
	180	210	2 611	3 046						



Tractors & trailers braking (p31 for VB0B0 only)

	Brake	Features
<i>Tractor</i>		
VB 0B0	Steering assist brake	Operating pressure: 20 → 120 bar (290 → 1740 PSI)
VFR-200	Power brake valve	Max. flow to aux: 120 l/min (32 GPM) to acc: 15 l/min (4 GPM)
<i>Trailer</i>		
VFR-OHX	Service brake hydraulically piloted	Flow to brakes: 50 l/min (13 GPM) to aux.: 200 l/min (53 GPM)
VFR-0EX	Service brake electronically piloted	



Options (p71)

Floor pedal	Lockable pedal	Wall pedal	Vertical lever	Horizontal lever

Dedicated Poclairn Hydraulics system valves

Anti-slipping systems valves

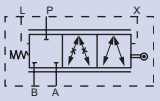
To control wheel slippage during operating of hydrostatic self-propelled machinery in rough terrain conditions, Poclairn Hydraulics has developed 2 solutions that offer an high vehicle gradeability by:

- Synchronization of wheel speed to avoid soil damage
- Optimized machine performance and stability
- Reduced fuel consumption
- Increased tire life (reduced wear)

A - TwinLock™ VDP valve

Twin Lock™ is a unique proactive hydraulic traction control, by providing flow division while automatically transferring torque to the wheels with the greatest ground adhesion. And since it reduces or eliminates the need for flow dividers, it dramatically reduces the heat generation and horsepower loss of conventional transmission systems.



	Max. pressure		Max.flow		Operation	Connections	
	bar	PSI	L/min	GPM			
VDP	450	6 526	26→50	7→13	Hydraulic Mechanical	M	

B- SmartDrive™ Off Road VMA valve

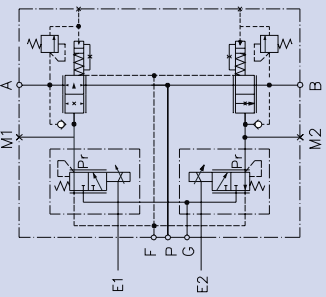
SmartDrive™ Off Road is an electronically managed traction control, which operates to restrict flow only when slippage is detected, by using normally wheel speed sensors and open proportional valves. Entirely programmable, the system easily accommodates varying motor displacements and vehicle steering geometry to offer optimal performance. SmartDrive™ Off Road can be installed by OEMs on production vehicles or offered as an after sale option (Poclairn Hydraulics motors just need to be "speed sensor ready").



In-line VMA



Flanged VMA

	Voltage	Max. pressure		Max.flow		
		bar	PSI	L/min	GPM	
VMA In-line model	12 V DC 24 V DC	450	6 526	20	5.2	
				50	13.2	
VMA Flanged model				20	5.2	
				50	13.2	



Twinlock™ valve on grape Harvester



Off-road valve on urban shuttle



Off-road valve on sprayer

Hydraulic assistance

Cam lobe motor technology is ideally suited to assist drive requirements. The free-wheeling capability of Poclairn Hydraulics motors enables high performance when engaged yet will not induce a drag on the main transmission when disengaged.

On motor, connects the ports A and R (or L and R on motor 1C) to tank and allows the pistons to return in cylinder-blocks and the motor to turn in freewheeling.

It protects the motor from pressure spikes in the casing.



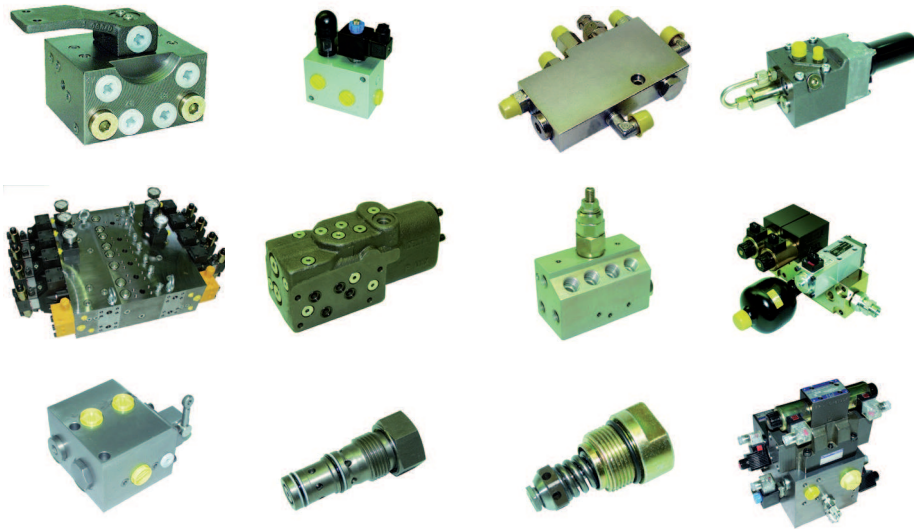
VDF free wheeling valves

	Max. pressure		Max. flow		Operation	Connections	
	bar	PSI	L/min	GPM			
VDF H15	450	6 526	120	31.6	Electric 12-24 V DC	M	
VDF H25	450	6 526	300	79	Electric 12-24 V DC	M	

Our core job: design your solution

Our skills and tools to design the right solution for you:

- strong R&D and engineering team with long term experiences in designing the solution to customer requests for wide range of applications
- short response time from request to offer, samples and series deliveries
- advanced CAD/CAM tools for design and manufacturing
- modern and efficient machinery and equipment for series production



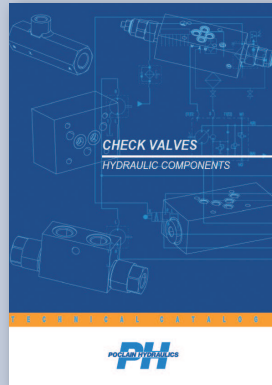
You have a project?

Send us your specifications (pressure, flow, numbers of ways and positions, type of spool), and tell us if it is a new prototype or a replacement of a component,

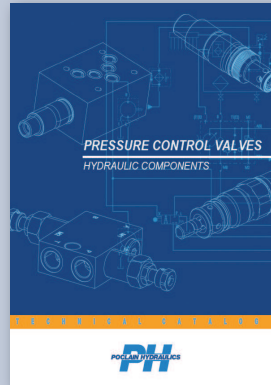
to valves@poclairn-hydraulics.com

More info? consult our technical literature

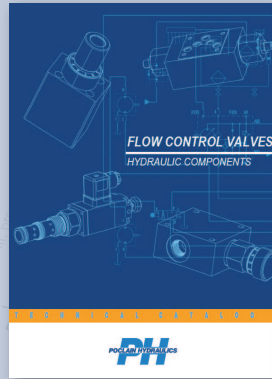
Check valve catalog
English version ref : A35759T



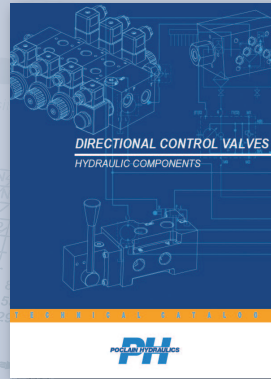
Pressure valve catalog
English version ref: A35760U



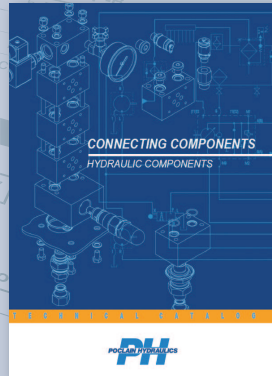
Flow control valve catalog
English version ref: A35761V



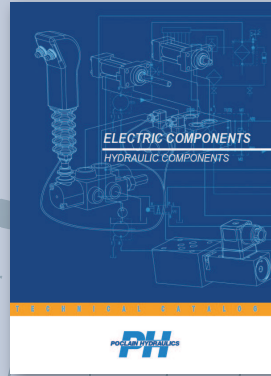
Directional control valve catalog
English version ref: A35758S



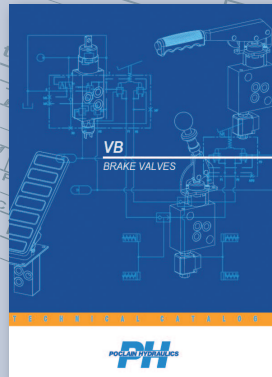
Connecting component catalog
English version ref: A35763X



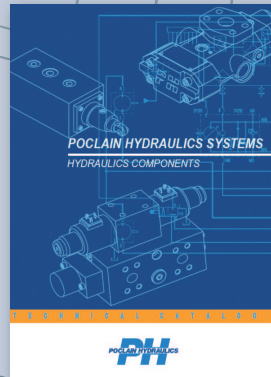
Electric component catalog
English version ref: A35762W



Brake valve catalog
English version ref: A06604D
French version ref: A06603C
German version ref: A13368F
Spanish version ref: A13369G



Poclain Hydraulics system:
hydraulic components catalog
English version ref: A01887B
French version ref: A01886A



Control spool held



Special requirements to be briefly specified

Seal type
NBR seals for mineral oil HL, H to DIN 51629
FPM seals for HETG, HEES, HE to VDMA 24568 and ISO 15724

No designation
D08
D16

Throttling



Pictures: R. Julien for Hulin - Facella.com; CPLL - VSP - Pellenc - Sandwick - Rilco - Gemaco Inc. TLD - Lorenzani - Hardy-Evrard - Faun - A. Canceo for Poclair Hydraulics

Passing on our hydrostatic transmission expertise

Poclair Hydraulics Training center can help your teams to design, use, sell, and repair hydraulics systems.

Our strengths:

- 2 certified training centers (in France and the USA)
- 32 training modules integrating the latest interactive techniques and practical tests to check the trainee's understanding at each step.

The courses can take place in house or at a location convenient to you, can last 2 to 4 days, and limited to 12 participants.

The course is both standard and open to everyone (in which case its occurrence is scheduled ahead by Poclair Hydraulics) or custom-made to stick to your exact needs.

To make the best use of your components and systems, choose the following sessions:

- Open circuit valves
- Electronics transmission management
- Start-up of your system
- Maintenance

but don't forget the basic knowledges:

- Sizing up a hydrostatic transmission
- Braking valves
- Antiskidding solutions

Find our technical documentation and our training schedule on:

