

# **POCLAIN HYDRAULICS** SOLUTIONS FOR THE MOST DEMANDING MARKETS

Poclain hydraulics specializes in the design, manufacturing and marketing of hydrostatic transmissions.

Our internationally recognized expertise allows us to expand on highly diversified markets such as the construction, agricultural, public works, material handling, industrial, environment and on-road markets. Poclain hydraulics' development is driven by our innovative spirit and our ability to anticipate the needs of a wide range of cutting edge applications.

- > Construction > Material handling
- > Agricultural
- > Mining
- > Forestry
- > Environment > Etc
- > Industry
- > Marine
- > On-Road





# **DESIGNED FOR HYDROSTATIC TRANSMISSIONS**

POWER TRANSMISSION VALVES





### **VARIOUS BRAKING FUNCTIONS**



Emergency and Parking Brake Valves
Service Brake Valves
Accumulator Charging Valves
Service Brake and Accumulator Charging Valves
Service Brake and Inching Valves
Compact solution "All in one"
Steering Assist Brake Valves
Tractors and Trailer Brake Valves





# Hydraulic Valves for open and closed loops



# **A LARGE RANGE OF FUNCTIONS**

# Directional Control Valves >p.18 Check Valves >p.18 Pressure Control Valves >p.18 Flow Control Valves >p.18





Anti-skidding valves Flow dividers Freewheeling valves Exchange valves Selector valves Pressure Reducers Serial Protection Valves

**Power Transmission Valves** 

# **DESIGNED FOR HYDROSTATIC TRANSMISSIONS** SIZED TO OPERATE AT HIGH PRESSURE AND HIGH FLOW



#### Anti-skidding valves

To control wheel slippage of hydrostatic self-propelled machines in rough terrain conditions, Poclain Hydraulics has developed two anti-skidding solutions that allow good traction control and maintain outstanding vehicle gradeability. The benefits of Twin-Lock<sup>™</sup> and SmartDrive<sup>™</sup> Off-Road solutions are:

- synchronization of wheel speed to avoid soil damage
- optimized machine performance and stability
- reduced fuel consumption, and
- increased tire life (reduced wear)

#### Twin-Lock<sup>™</sup> valves

Twin-Lock<sup>™</sup> is a unique proactive hydraulic traction control that automatically transfers torque to the wheels with the greatest ground adhesion. Since it eliminates the need for flow dividers, it dramatically reduces the heat generation and horsepower loss of conventional traction control systems.

Twin-Lock<sup>™</sup> operates through a unique combination of serial and parallel connection between wheel motors. The Twin-Lock<sup>™</sup> valves prevent excessive pressure build-up in the serial lines, for instance when steering.

	Weight	Max. operating pressure	Max.flow	_ Operation	Connections*	Hydraulic schematics	
	kg [lb]	bar [PSI]	L/min [GPM]				
VDP	3,3 [7.3]	450 [6,526]	26 - 50 [7 - 13]	Mechanical	Metric		
PR-TL-SV	9,5 [20.9]	450 [6,526]	30 - 50 [7.9 - 13]	Hydraulic	Metric	HPB HPB HPA SG G L	

#### SD-CT Off-Road™ valves

SD-CT Off-Road<sup>™</sup> is an electronically managed traction control. By using wheel speed sensors for splippage detection and proportional valves for flow throttle, valve restricts flow only when slippage is detected. Entirely programmable, the system easily accommodates varying pump displacements and vehicle steering geometry to offer optimal performance.

SD-CT Off-Road<sup>™</sup> can be installed by OEMs on production vehicles or offered as a conversion kit (Poclain Hydraulics motors just need to be eqipped with a pre-disposition for a speed sensor).



\*Connecting dimensions: Metric = ISO 9974; Gas = ISO 1179; UNF = ISO 11926-1, CETOP = ISO 4401

#### **Power Transmission Valves**

## **ANTI-SKIDDING SYSTEMS**

#### Increase the off-road capability of your machines

Wheel adherence is a critical factor with off road vehicles. Lose adequate wheel contact with the ground and you can lose control of your machine, put it temporarily out of service, cause premature tire wear, dramatically increase fuel consumption or churn up the site.

Poclain Hydraulics, has designed and developed systems to increase the performance of your machine on difficult ground conditions and steep gradients.

#### Flow dividers

Flow divider controls the speed between wheels of the same axle or between different axles by dividing or combining the flow. The flow divider is equipped with an electric or hydraulic controlled by-pass and can be used in open or closed loop circuits.

		E Start	HIGH PERFORMANC	FD-H2-	2	FD-M2		FD-M3 FD-M4
	Weight	Number	Division Ratio**	Max. operating pressure	Max. by-pass flow (ratio 50/50)	By-pass	Connections*	Hydraulic schematics
	kg [lb]	– of outlets	(% of max. flow)	bar [PSI]	L/min [GPM]	control		<b>,</b>
FD-H2-1	14,2	2	50-50 60-40	500 [7.252]	200 [52.8]	Hydraulic or	BSPP. UNF	
FD-H2-2	[31.3]	-	70-30 80-20	70-30 80-20 300 [7,252] 300 [79.3]	Electrical	2011,011		
FD-M2	7,9 [17.4]	2	50-50 70-30 60-40	420 [6,000]	150 [39.6]	Hydraulic or Electrical		FD-M4
FD-M3	13,0 [26.6]	3	33-33-33	350 [5,075]	150 [39.6]	Electrical	UNF BSPP	
FD-M4	21,0 [46.3]	4	25-25-25-25 30-30-20-20 33,5-33,5-16,5-16,5	420 [6,000]	150 [39.6]	_		

\*Connecting dimensions: Metric = ISO 9974; Gas = ISO 1179; UNF = ISO 11926-1, CETOP = ISO 4401 \*\* Others ratio are available on-demand

#### Freewheeling valves

In an assist drive circuit, hydraulic motors are engaged when traction is needed, for instance, in rough terrain condition (off-road mode). At high speed (on-road mode) when traction condition are good, motors can be disengaged.

The freewheeling valve connects the high pressure ports of the motor to tank and allows pistons to stay retracted inside the cylinderblock: the motor is then freewheeled.

A pump by-pass option is of interest if the pump is only dedicated to the assist drive function.





#### **Pressure Reducers**

Pressure reducing valves limit the pressure in motor brake line or in auxiliary functions line.

	Type of setting	Weight	Pressure setting range	Max. operating pressure	Max.flow	Hydraulic schematics		
_		kg [lb]	bar [PSI]	bar [PSI]	L/min [GPM]	With check valve	Without check valve	
PR3S	Fix	0.7 [1.54]	10 to 120	050 [2 606]	00 [7 00]			TYK T
PR3V	Variable		[145 to 1,740]	200 [3,020]	30 [7.92]			

#### Serial protection valves

Serial protection valve connects motors in serial line and provides protection of the motors against cavitation and overpressure.

	Max. operating pressure	Max.flow serial line	Max.flow cross line	Pressure relief setting	Connections*	Hydraulic schematics
	bar [PSI]	L/min [GPM]	L/min [GPM]			
SP	400 [0 000]	110 [29.0]	63 [16.6]		UNF	
	420 [6,000] -	160 [42.3]	75 [19.8]	- FIX	BSPP	

\*Connecting dimensions: Metric = ISO 9974; Gas = ISO 1179; UNF = ISO 11926-1, CETOP = ISO 4401

#### Exchange valves

Compact exchange valves 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 pump and motor cases.

For all VE (except VE10), exchange pressure setting can be tuned by customer.



#### Customized valves and hydraulic blocks

Special combo designs are custom made and bring several benefits to specific requirements of a customer:

- Elementary functions (Hot oil exchange, freewheeling, traction control, de-braking, serial protection, circuit selection, anti-cavitation, cross-relief) integrated in a compact multifunctional block results in outstanding performance
- Hydraulic ports position and size are adjusted for easy assembly on the machine
- Optimized dimension and weight
- Surface protection adapted to different environmental conditions



combo freewheeling, flow divider, exchange, brake release





Parking and emergency brake valves Service brake valves Service brake valves + inching Accumulator charging valves Service brake and accumulator charging valves Compact solutions «All in one»

# **VARIOUS BRAKING FUNCTIONS** FOR ALL TYPES OF HYDRAULIC CIRCUITS

#### Advantages of hydraulic brake valves (power braking type) are numerous

- No need for an additional supply source (air compressor)
- Valves are fed by the hydraulic source on the tractor
- Hydraulic accumulators are smaller than air reservoirs
- Faster response time thanks to available reserve of energy in accumulators
- Fewer risks of system contamination and no need for additional filters
- Comfortable and progressive feel

The Poclain Hydraulics braking systems can be adapted to handle your specific braking requirements.







#### Parking and emergency brake valves

-	Weight Brake operating pressure		01	0 d al		
-	kg [lb]	bar [PSI]	- Circuit	Control	Actuator	
VB3-002	0,9 [2.0]	10 - 150 [145 - 2,175]	Single-circuit	Reverse modulating Hydraulic	Horizontal / Vertical lever Floor / Wall mount pedal	
VB3-00E	3,0 [6.6]	10 - 100 [145 - 1,740]	Single-circuit	Reverse modulating Electro-hydraulic	Horizontal / Vertical lever Wall mount pedal	
VB-00M	10 [22.0]	30 - 120 [435 - 1,740]	Single/Dual-circuit (EU 2015/68 regulation)	On-Off	Electrical and Manual	

#### Service brake valves and inching

	Weight	Brake operating pressure	– Brake type	Circuit	Control	Actuator	
	kg [lb]	bar [PSI]		Girguit	Control		
VB3-010*	1,0 [2.2]	20 - 150 [290 - 2,175]	– Service brake –	Single-circuit	Modulating Mechanical	Floor / Wall mount pedal	
VB3-020*	2,0 [4.4]	20 - 150 [290 - 2,175]		Dual-circuit	Modulating Mechanical	Floor / Wall mount pedal	
VB3-012	3,5 [7.7]	20 - 150 [290 - 2,175]	Service brake	Single-circuit	Combined VB3-002 + VB3-010	Floor mount pedal	
VB3-022	4,1 [9.0]	20 - 150 [290 - 2,175]	and inching	Dual-circuit	Combined VB3-002 + VB3-020	Floor mount pedal	

\* Electrical inching available, pedal position sensor

#### **VB / VFR**

#### Accumulator charging valves

					Cut-in/ cut-out	Flow rate		
	weight			pressure range	To auxiliary	To accumulator		
	kg [lb]	Circuit	Control	bar [PSI]	l/min [GPM]	l/min [GPM]		
		Single-circuit	Hydraulic	110 / 130 [1,595 / 1,888]		2.75 - 15		
VB-100	2,2 [4.8]			120 / 140 [1,740 / 2,031]				
				135 / 160 [1,958 / 2,321]	45 - 120			
VB-200				160 / 190 [2,321 / 2,756]	[11.9 - 31.7]	[0.73 - 3.96]		
	4.0 [8.8]	Dual-circuit Hydraulic 170 / 200 [2	170 / 200 [2,466 / 2,901]					
				180 / 210 [2,611 / 3,046]				

#### Compact solutions «All in one»

	Woight	Wainht		Cut-in/ cut-out Brake operating		Flo		
	weight			pressure range pressure	To auxiliary	To accumulator		
	kg [lb]	Circuit	Control	bar [PSI]	bar [PSI]	l/min [GPM]	l/min [GPM]	Actuator
VB-110	5,0 [11.0]	Single-circuit	Hydraulic	110 / 130 [1,595 / 1,888]				
VB-220	6.0 [13.2]	Dual-circuit	Hydraulic	120 / 140 [1,740 / 2,031] 135 / 160 [1,958 / 2,321] 160 / 190 [2,321 / 2,756] 170 / 200 [2,466 / 2,901]				
VB-22E		Dual-circuit	Electro hydraulic		160 / 190 [2,321 / 2,756] 160 / 200 [2,466 / 2,901]	30 - 120 [435 - 1,740]	45 - 120 [11.9 - 31.7]	2.75 - 15 [0.73 - 3.96]
8.0 [17.6] VB-22P	+ parking brake	Proportional         180 / 210 [2,611 / 3,046]           Electro         205 / 240 [2,973 / 3,481]*						

\* Only available for VB-110 and VB-220 valves.







#### **Relay valves**

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- Large volume brake actuation Fast tank return
- Long braking lines
- - Remote electric actuatioin of service brake



VS as Quick return valve żА

Carlos and				U	U
	Weight	Max. brake operating pressure	Max. flow rate to brake	Circuit	Control
	kg [lb]	bar [PSI]	l/min [GPM]	Gircun	Control
VS	2,5 [5.5]	210 [3,045]	70 [18.50]	Single-circuit	Hydraulic

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Electrically piloted brake valve							
-	Weight Brake operating pressure		Droke ture	Dressure control	F 		
	kg [lb]	bar [PSI]	вгаке туре	Pressure control			
VBR-010	2,5 [5.5]	10 - 150 [145 - 2,175]	Service brake	Proportional	P		

# TRACTOR AND TRAILER BRAKE VALVES RANGE

# Combination of hydrostatic and mechanical friction brake

Poclain Hydraulics has enhanced hydrostatic braking performance by adding synchronized control for combinations of hydrostatic and mechanical brake systems on a single vehicle.

This product range is designed to be easily integrated to an existing braking circuit.

#### Valves compatibility and modularity

Whether you want to fit Hydraulic or Electro-hydraulic brake valves on your tractor/trailer, you can choose any of our products.

It is possible to mix and match hydraulic and electrohydraulic components.

Poclain Hydraulics can design specific brake valves to answer your needs regarding space constraints, function integration, and/or develop specific performance characteristics.



		Hydraulic solution	Electro-hydraulic solution	
1	Steering Assist Valves	VB3-0B0 VB3-0D0	-	
2	Parking and Emergency Brake Valves	VB3-002	VB-00E	
3	Accumulator Charging Valves	VB-100 VB-200	-	
4	Trailer Brake Valves	VFR-0HX	VFR-0EX VBT	



#### Parking and emergency brake valves

-					
	Weight	Brake operating pressure	Circuit	Control	Antuntor
	kg [lb]	bar [PSI]	Gricuit	Control	Actuator
VB OOE	3,4 [7.5]	10 - 150 [145 - 2,176]	Single (EU 2015/68 regulation)	Reverse modulating Electro-hydraulic	Horizontal / Vertical lever Floor/ wall mount pedal

with cast design

Flow rate

#### Steering assist valves

#### The VB3-0B0 and VB3-0D0 valves, combined with a double brake pedal, have the following functionalities:

- Off-road: steering assist braking for field work gives U-turn capability by braking the inner rear wheel. Each of the circuit selectors are associated with one of the pedals. VB3-0B0
- On-road: mechanically linked pedals allow effective service braking.
- Dual circuit steering assist valve (VB3-0D0) acts on brakes in rear and front axles which improves driving control and safety.
- VB3-0E

VB3-0D0 a	always allows independen	it braking in c	ase of circuit leakage (	on one of the axles	i
	-	Weight	Max. brake operating pressure	Service brake pressure	- with cast design
	-	kg [lb]	bar [PSI]	bar [PSI]	
VB3-0B0	Steering assist brake (Single circuit)	7,0 [15.4]	250 [3,626]	150 [2,176]	
VB3-0D0	Steering assist brake (Dual circuit) (EU 2015/68 regulation)	7,0 [15.4]	250 [3,626]	150 [2,176]	
					-

#### Trailer brake valves

The trailer brake valves allow to apply the trailer brake pressure based on the tractor brake pressure.





VBT two lines trailer hydraulic brake system: negative emergency brake on supplementary line and positive service brake on control line.



			Mainht		
			weigin	To brake	To auxiliary
		Circuit	kg [lb]	l/min [GPM]	l/min [GPM]
FR-0HX	Trailer service brake hydraulically piloted	Single	6,5 [14.3]	50 [12]	200 (52)
FR-0EX	Trailer service brake electronically piloted	Single	6,5 [14.3]	50 [15]	200 [53]
		Single	10 [22]	50 [13]	100 [26.5]
BT	Trailer service brake electronically piloted	Dual (EU 2015/68 regulation)	16 [35.2]	50 [13]	100 [26.5]

#### Customized VB valves

Special combo designs are custom made and bring several benefits to specific requirements of a customer:

Accumulators can be integrated directly on brake valve

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- Protection of accumulators from AUX over pressure
- Adaptation of pushing elements on VB3-010 (roller, thread)
- Integration of two braking valves on one actuator
- Integration of additional remote hydraulic piloting on standard braking valves
- Customization of mechanical actuators according to customer needs



Dual circuit brake valve with accumulators and customized component



# OPEN LOOP VALVES

Directional control valves Check valves Pressure control valves Flow control valves

# **A LARGE RANGE OF FUNCTIONS** TO ANSWER EVERY NEED



#### Directional control valves

#### **CETOP** valves

Valves for sub-plate connection to ISO 4401

					- Ind			
	Actuation	S (N	ize IG)	Max. operating pressure	Flow rate	Modular Mounting*	Weight	Hydraulic schematics
		6	10	bar [PSI]	l/min [GPM]	mounting	kg [lb]	(examples)
4/2 and 4/3								
WVI	Hudroulio	٠		350 [5,077]	80 [21.1]	CETOP	1,4 [3.1]	А В 444Г-ЭТ-Т-Т-Т-Т-Т-Т-Т-Т-Т-Т-Т-Т-Т-Т-Т-Т-Т-Т
RV.	Hyuraulic		•	350 [5,077]	130 [34.2]	CETOP	4,0 [8.8]	
KV	Machanical	٠		350 [5,077]	60 [15.8]	CETOP	2,0 [4.5]	
κv.	MECHAIIICAI		٠	350 [5,077]	100 [26.4]	CETOP	5,2 [11.5]	
KV (5KL)	Electrical	٠		350 [5,077]	75 [19.8]	CETOP	2,2 [4.9]	
KV (5KO)	Electrical		•	350 [5,077]	120 [31.6]	CETOP	7,3 [16.1]	— a <u>I∕_I</u> _ <u>I</u> b
KV (3KO)	Electrical	•		250 [3,626]	40 [10.5]	CETOP	1,8 [3.9]	
KVP proportional	Electrical	•		350 [5,077]	30 [7.9]	CETOP	2,2 [4.9]	
PKV-6	Indirect hydraulic	٠		210 [3,046]	25 [6.6]	CETOP (Non modular)	2,6 [5.7]	
PKV-10	Indirect hydraulic		•	210 [3,046]	60 [15.8]	CETOP (Non modular)	3,2 [7.0]	

KV-3KO

KV-5KL

KVP

PKV

#### **Manifolds for CETOP valves**

	Size	(NG)	Max. operating pressure	Flow rate	Connections*	Weight
	6	10	bar [PSI]	l/min [GPM]		kg [lb]
Manifold BP	٠		350 [5,077]	80 [21.1]	CETOP	2,3 to 41.2
(max. 8 stations)		٠	350 [5,077]	120 [31.6]	CETOP	[5.1 to 90.8]



#### **Subplates for CETOP valves**

	Size	(NG)	Max. operating pressure	Flow rate	Connections*	Weight	
	6	10	bar [PSI]	l/min [GPM]		kg [lb]	
Subplates PP-KV	•		350 [5,077]	80 [21.1]	CETOP	0,9 [2.0]	
(max.1 station)		٠	350 [5,077]	120 [31.6]	CETOP	2,3 [5.1]	



#### **Open Loop Valves**

#### KVM valves for modular mounting

KVM 4/3







KVM-NDV

KVM-VV







Screw set ock SET-KVM



	Size (NG)	Max. operating pressure	Flow rate	Actuation	Modular Mounting *	Non modular in line	Weight	Hydraulic schematics
	6	bar [PSI]	l/min [GPM]		Mounting*	connection	kg [lb]	(examples)
KVM-On/Off (4/2 and 4/3)	•	350 [5,077]	40 [10.5]	Electrical	Bankable	Metric, Gas, UNF	2,4 [5.3]	
KVM6-PO (Proportional) (4/2 and 4/3)	•	350 [5,077]	30 [7.9]	Electrical	Bankable	Metric, Gas, UNF	2,4 [5.3]	
KVM-PL (Load sensing signal)	•	350 [5,077]	40 [10.5]	Electrical	Bankable	Metric, Gas, UNF	2,4 [5.3]	$\begin{array}{c c} c & \hline \\ p & \hline \\ 15 \\ T \\ \end{array}$
KVM-VV (pressure relief valve)	•	350 [5,077]	40 [10.5]		Bankable		1,8 [4.0]	A B
KVM-NDV (Throttle with check valve)	•	350 [5,077]	40 [10.5]		Bankable		1,5 [3.3]	A B K V V K
KVM-NOV (Pilot operated check valve)	٠	350 [5,077]	40 [10.5]		Bankable		1,4 [3.1]	
OB-Inlet block	٠	350 [5,077]	40 [10.5]		Bankable	In line	1,2 to 4.5 [2.7 to 9.9]	
ZB-Outlet block	•	350 [5,077]	40 [10.5]		Bankable	In line	0,8 [1.8]	
Screw set SET-KVM	•							

Vertical stacking



Bankable mounting

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#### A Large Range Of Functions



	Actuation		Size	e (NG)		Max. operating pressure	Flow rate	Non modular in line	Weight	Hydraulic schematics
		6	8	10	16	bar [PSI]	l/min [GPM]	connection	kg [lb]	(examples)
KV	Hydraulic				•	450 [6,527]	300 [79.3]	SAE, UNF	16,8 [37.0]	
KM	Machanical	•				350 [5,077]	60 [15.8]	Metric, Gas, UNF	2,4 [5.3]	
RV.	Wechanica			٠		350 [5,077]	120 [31.6]	Metric, Gas, UNF	5,3 [11.7]	—
		•				350 [5,077]	50 [13.2]	Metric, Gas, UNF	2,5 [5.5]	
KV	Electrical			٠		350 [5,077]	120 [31.6]	Metric, Gas, UNF	5,5 [12.1]	
					٠	350 [5,077]	250 [65.8]	Gas, UNF	22 [48.5]	— YZ 过 P1 P2
		٠				315 [4,569]*	50 [13.2]	Metric, Gas, UNF	2,5 [5.5]	CADB
KV6K2	Electrical		٠			315 [4,569]*	90 [23.8]	Metric, Gas, UNF	4,8 [10.6]	

\* 250 bar [3,626 PSI] without drain release and 315 bar [4,569 PSI] with drain release.

#### 6/2 selector valves for modular mounting





KV-7/2-6

	Actuation		Size (NG)		Max. operating pressure	Flow rate	Non modular in line	Weight	Hydraulic schematics
		6	8	10	bar [PSI]	l/min [GPM]	connection	kg [lb]	(examples)
		٠			315 [4,569]	50 [13.2]	Metric, Gas, UNF	2,7 [5.9]	¥
кун	Electrical		•		350 [5,077]	90 [23.8]	Metric, Gas, UNF	3,8 [7.7]	
				٠	315 [4,569]	120 [31.6]	Metric, Gas, UNF	5,5 [12.1]	P1 P2

#### 7/2 selector valves

The KV-7/2 valve is used as diverter between two hydraulic cylinders which are not operated simultaneously. This is the perfect solution for all applications where pressure peaks appear because of mechanical shocks acting on hydraulic cylinder(s).



#### **Open Loop Valves**

#### 8/3 selector valves



-									
	Actuation	Size (I	NG)		Max. operating pressure	Flow rate	Non modular in line	Weight	Hydraulic schematics
		6			bar [PSI]	l/min [GPM]	connection	kg [lb]	(examples)
KV	Electrical	٠			250 [3,626]	50 [13.2]	Metric, Gas, UNF	3,8 [8.4]	$\begin{array}{c} C D E F \\ a \\ a \\ \hline \\ a \\ \hline \\ a \\ \hline \\ a \\ \hline \\ \\ a \\ \hline \\ \\ a \\ \hline \\ \\ \\ \\$
Piped asse	embly valves		KVC-	-2/2	KVC-	NV	KVC-3/2	KVC2-3/2	
		TE		-					
	Actuation	S	ize (N	IG)	Max. operating pressure	Flow rate	Non modular in line	Weight	Hydraulic schematics
		4	6	10	bar [PSI]	l/min [GPM]	connection	kg [lb]	(examples)
2/2									
KVC	Mechanical		٠		250 [3 626]	35 [9.2]	Metric, Gas, UNF	1,2 [2.6]	
KVC-NV	Mechanical		•		250 [3 626]	40 [10.5]	Metric, Gas, UNF	1,2 [2.6]	
3/2									
KVC	Electrical	٠			160 [2 320]	16 [4.2]	Metric, Gas	1,6 [3.5]	A
KVC	Electrical			•	350 [5 077]	100 [26.4]	Metric, Gas, UNF	7,1 [15.6]	
KVC2*	Electrical	•			160 [2 320]	16 [4.2]	Metric, Gas, UNF	3,5 [7.7]	

\* This valve is often used to control parking brake actuation and displacement switch of MS motors.

#### Dedicated valve for snow plough

The KV-7/3-6 valve has been designed especially for use on variable V-blade snow plows, it allows to switch between tilting each blade individually or both simultaneously. The integrated pressure relief valves prevent hydraulic circuit against pressure peeks and the hydraulic accumulator absorbs impact energy to return it back to the circuit through check valves.



KV-7/3-6

#### A Large Range Of Functions

Flow contro	ol valv	es						
		VP-	NDV	TVD	TVTC		TVTP-P0 TVTP-P TVTP-B	DTP
	Size	(NG)	Max. operating pressure	Flow rate	Connections*	Sotting Mathad	Weight	Hydraulic schematics
	6	10	bar [PSI]	l/min [GPM]	0011166010113	oetting method	kg [lb]	nyuraune schematics
Throttle/check	valve							
	٠		350 [5 076]	60 [15.8]	OFTOD	Manual	1,4 [3.2]	
VP-NDV		٠	350 [5 076]	100 [26.4]	GETUP	Manual	3,3 [7.3]	
Pressure com	pensat	ed flow	control valves					
TVD	•		350 [5 076]	16 [4.2]	CETOP	Manual, Mechanical	1,6 [3.5]	
TVTC Proportional	•		350 [5 076]	50 [13.2]	in line Metric, Gas, UNF	Mechanical	3,0 [6.6]	
	•		210 [3 046]	50 to 90 [13.2 to 23.8]	Cartridge	Electric proportional	1,0 [2.2]	
IVII-F		٠	210 [3 046]	90 to 150 [23.8 to 39.6]	Cartridge	Electric proportional	1,0 [2.2]	
TVTP-P0	•		210 [3 046]	60 to 90 [15.9 to 23.8]	Cartridge	Electric proportional	1,0 [2.2]	3
	•		350 [5 076]	60 to 90 [15.9 to 23.8]	Cartridge	Manual	1,0 [2.2]	
IVIP-B		•	350 [5 076]	90 to 150 [23.8 to 39.6]	Cartridge	Manual	1,0 [2.2]	2
Flow dividers								
DTD	٠		350 [5 076]	20 to 70	in line		1,7 [3.8]	A B
אוע		٠	350 [5 076]	[5.3 to 18.5]	Metric, Gas, UNF		2,7 [5.9]	

# **PHAST PROGRAM**



Visit our dedicated web page www.poclain-hydraulics.com/en/services/phast

Poclain Hydraulics is committed to supplying valves within 5 business days, excluding transport.

Up to 5 pieces for each part number delivery within 5 days max. Up to 50 pieces for each part number delivery up to 4 weeks.

#### Valves type

**Fast delivery** 

Directional control valves	Bankable mounting	Vertical stacking	Chek valves	Pressure control valves	Flow control valves
KV-6K/2-6 KV-6/2-6 KVC-3/2-10	KVM	KVM-VV-6	NOV		DTP
KV-8/3-6 KVH-6/2 KV-4 CETOP KVC	OB-KVM-6 ZB-KVM-6	KVM-NDV-6 KVM-NOV-6	VP-NDV VP-NOV	VP-RT	TVTC TVTP

ast

\*Connecting dimensions: Metric = ISO 9974; Gas = ISO 1179; UNF = ISO 11926-1, CETOP = ISO 4401

#### **Open Loop Valves**

		VP-NV		VP-NOV	NOV-E	
	Size (NG)	Max. operating pressure	Flow rate	Connections*	Weight	Hydraulic schematics
	6 10	bar [PSI]	l/min [GPM]		kg [lb]	
Direct operated	valves					
	٠	350 [5 076]	50 [13.2]	CETOP	0,9 [1.9]	
VF-NV	٠	350 [5 076]	100 [26.4]	CETOP	2,8 [6.1]	$\begin{bmatrix} I \\ -B_{P} \end{bmatrix}_{A_{P}} \begin{bmatrix} I \\ -P_{P} \end{bmatrix}_{P} \begin{bmatrix} I \\ -P_{P} \end{bmatrix}$
VP-NOV	•	350 [5 076]	60 [15.8]	CETOP	1,8 [3,9]	
	٠	350 [5 076]	100 [26.4]	CETOP	3,5 [7.7]	
Pilot operated v	alves					
NOV-6D	٠	350 [5 076]	60 [15.8]	in line Gas, UNF	1,5 [3.3]	$\begin{array}{c} A2 \\ I \\ $
NOV-E	•	350 [5 076]	35 [9.2]	in line	0,5 [1.1]	<b>Z</b>
	•	350 [5 076]	50 [13.2]	Gas, UNF	0.7 [1.4]	
Counterbalance	piloted valve					
VP-BZV	٠	270 [3 916]	60 [15.8]	CETOP	1,8 [4.0]	$ \begin{array}{c} B Y & A V & P Y T Y \\ \hline \begin{array}{c} & & \\$

#### Pressure control valves



	Size	(NG)	Max. operating pressure	Flow rate	Connections*	Oneration	Weight	Hydraulic schematics
	6	10	bar [PSI]	l/min [GPM]		oporation	kg [lb]	
VVD	٠		400 [5 802]	50 [13.2]	Cartridge,	Direct	0,5 [1.1]	;- <u>-</u> -
VVP		•	400 [5 802]	120 [31.7]	in line	Direct	0,6 [1.3]	
VVB2	•		210 [3 046]	60 [15.9]	in line Metric, Gas, UNF	Direct	1,8 [4.1]	
VP-RT	٠		350 [5 076]	50 [13.2]	OFTOD	Dilot	1,7 [3.8]	B <sub>v</sub> A <sub>v</sub> VP-RT-EB P <sub>v</sub> T <sub>v</sub>
	•	350 [5 076]	100 [26.4]	GETUP		2,6 [5.7]	B, A, P, T,	

#### Customized valves and hydraulic blocks

Special combo designs are custom made and bring several benefits to specific requirements of a customer:

- Elementary functions integrated in a compact multifunctional block results in outstanding performance
- Hydraulic ports position and size are adjusted for easy assembly on the machine
- Optimized dimension and weight
- Surface protection adapted to different environmental conditions

Flow divider and diverter



# **FAST DELIVERY PROGRAM** FOR MOTORS, PUMPS AND VALVES





Visit our dedicated web page www.poclain-hydraulics.com/en/services/phast



> The sales of PHast are subject to Poclain Hydraulics' General Terms & Conditions of sales.

#### MS and MI Motors

Poclain Hydraulics is committed to supplying a number of standard motors within 15 business days, excluding transport.

Making their selection from a predetermined list of motors, machine manufacturers can choose from wheel motors (for sizes 02 to 125) or shaft motors (for sizes 11 to 125), in a fixed displacement or double displacement version, with or without a brake. All motors are equipped with a pre-disposition for speed sensor. Pre-configured motors are equipped to guarantee a maximum level of performance.

#### > Order limited to four PHast motors, per motor size.

#### Motor types

MS02-E02	MS05-E05	MS08-E08	MS11-E11	MS18-E18	MS35	MS50	MS83	MS125
•	٠	٠	•	٠	٠	٠	٠	٠

#### PM pumps

Poclain Hydraulics is committed to supplying a number of standard pumps within 10 business days, excluding transport.

Making their selection from a predetermined list of pumps, machine manufacturers can choose from pumps with mechanical servo control (A) or hydraulic servo control (S) or electro proportional servo control (P) or electro proportional servo control with feeback (Q). All pumps are equipped with a high pressure relief valve setting, internal charge pump and charge relief valve setting, SAE A flange for the auxiliary mounting pad and a flushing valve.

#### > Order limited to one pump per part number per customer and per month.



MI250

\* Only available with M and L control





#### **Open Loop Valves**

Poclain Hydraulics is committed to supplying a number of standard valves within 5 business days, excluding transport.

# > Up to 5 pieces for each part number delivery within 5 days max.> Up to 50 pieces for each part number delivery up to 4 weeks.

#### Valves type

Directional	Bankable	Vertical	Chek	Pressure	Flow
control valves	mounting	stacking	valves	control valves	control valves
KV-6K/2-6 KV-6/2-6 KVC-3/2-10 KV-8/3-6 KVH-6/2 KV-4 Cetop KVC	KVM OB-KVM-6 ZB-KVM-6	KVM-VV-6 KVM-NDV-6 KVM-NOV-6	NOV VP-NDV VP-NOV	VP-RT	DTP TVTC TVTP







Poclain Hydraulics is a partner you can rely on to accompany you through the design and sizing of your hydrostatic transmission.

Whatever your expertise in hydrostatics, whatever your application, we offer you our 60 years of experience at all stages of your application's lifetime. From design to after-sales, we guarantee the highest level of quality throughout our collaboration.

Our services include: delivery of systems for a complete transmission, start-up of new transmissions with on-site commisionning, troubleshooting, full testing of vehicles at our proving grounds in France, software customization, wiring services on prototypes, repair, spare parts delivery, trainings.

- > Poclain Hydraulics commits to attaining results.
- > Your transmission will perform at an optimum level.
- > Time to market and technical risks are reduced.
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