

Hydraulic Valves

Directional Control Valves



- Rugged spools with four control lands; up to 21 spool styles available depending on operator
- Solenoid, lever, cam, air or oil pilot operated
- Soft-shift available on D1 and D3 solenoid operated valves
- Low pressure drop
- 8 Watt for D1 available
- Several solenoid connections available

Valve Series	D1	D3	D31	D41	D81	D111
Maximum Flow* (l/min)	80	150	150	300	700	2000
Max operating pressure (bar)	350	350	350	350	350	350
Valve Size (CETOP)	3	5	5	7	8	10
(NG)	6	10	10	16	25	32

*Depending on spool

Sandwich Valves – Manapak



- Mounted between directional control valves and their mounting surface
- Steel bodies and internal hardened steel components for strength and durability

Valve Size (CETOP)	3	5	7	8
Check	X	X	X	X
Pilot Operated Check	X	X	X	X
Flow Control	X	X	X	X
Direct Op Pressure Reducing	X	X		
Pilot Op Pressure Reducing		X	X	X
Pressure Relief	X	X	X	X
Counter Balance	X	X		

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Pressure Valves



- Manifold, inline, SAE flange or DIN cartridge
- 350 bar operating pressure
- Functions include relief, pressure reducing and sequence, and unloading

Colorflow Valves




- Inline mounted flow, check, needle, gauge isolator and snubber valves
- Flow controls available in pressure compensated models
- Sizes 1/4" to 2"
- Choice of NPTF, SAE, BSPP and ISO 6149 metric ports
- Maximum operating pressures up to 350 bar
- Flows up to 250 l/min
- Steel bodies; some models also available with brass or stainless steel

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Proportional Control Valves



- Maximum operating pressures to 350 bar
- On-board and remote electronics available
- Zero lap servo spools offered for closed loop applications
- Explosion proof models available (ATEX CE  II 2 G)

Proportional Directional Control	Series	Direct Operated		Pilot Operated				Spool Feedback	Integrated Electronics
		06	10	10	16	25	32		
Size: NG				10	16	25	32		
Size: ISO/CETOP		3	5	5	7	8	10		
Std. Performance	D*FB	X	X						optional
	D*1FB			X	X	X			
High reproducibility	D*1FH			X	X	X	X	X	X
VCD performance / Servo Performance	D1FP	X						X	X
	D3FP		X					X	X
	D*1FP			X	X	X	X	X	X

Proportional Directional Control	Series	Direct Operated		Pilot Operated			Integrated Electronics
		06	06	10	25	32	
Size: NG			06	10	25	32	
Size: ISO/CETOP		3	3	5	8	10	
Proportional Relief	RE06*T	X					X
	RE06*W	X					
	RE*T			X	X	X	X
	RE*W			X	X	X	
	VBY*L		X	X			
Proportional Reducing	PC			X	X	X	X
	DWE			X	X	X	
	PE			X	X	X	X
3-Way Proportional Reducing	VMY		X	X			

DIN Cartridge Proportional Control	Series	Pilot Operated								Spool Feedback	Integrated Electronics
		16	25	32	40	50	63	80	100		
Size: NG											
Std. Performance	TDA	X	X	X	X	X	X	X	X		
Servo Performance	TDL				X	X	X	X	X	X	X
2-Way Servo Performance	TDP			X	X	X	X	X	X	X	X
3-Way Servo Performance	TPQ			X	X	X	X	X	X	X	X