

Product Catalogue 2023 Standard Cartridges & ISO Valves (CETOP)

With metric and imperial units



Cartridge Valves Catalogue 2023

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For directional, pressure, flow-control and check valves

Cartridge Valves

Market

Applications are demanding:

- Higher system pressures and flow rates
- Lower power losses
- More favorable cost/performance ratios

Our solution:

The Bucher Hydraulics cartridge valve program

Cartridge valves

Our cartridge valve line covers a large area of valve functions and cavities for both ANSI (SAE) and DIN (EN) standards.

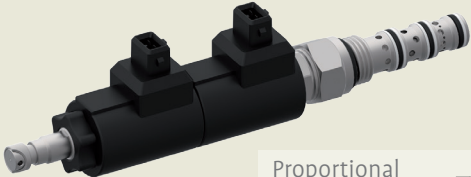
The high level of functional reliability and the great stability of our components are used in different applications:


- Mobile hydraulics with vast experience in construction, agricultural and municipal machinery
- Industrial hydraulics with its stringent safety requirements
- Equipment for wind power generation

Your benefits


- Maximum flow rate and pressure, low pressure loss
- Save space and weight with compact design
- Long life at maximum performance levels
- High functional stability throughout the entire pressure and flow rate range
- Flexibility, availability and good cost/performance ratio
- Safety: All valves are tested before leaving the factory

Actuators:



Proportional solenoid 




Manual adjustment 




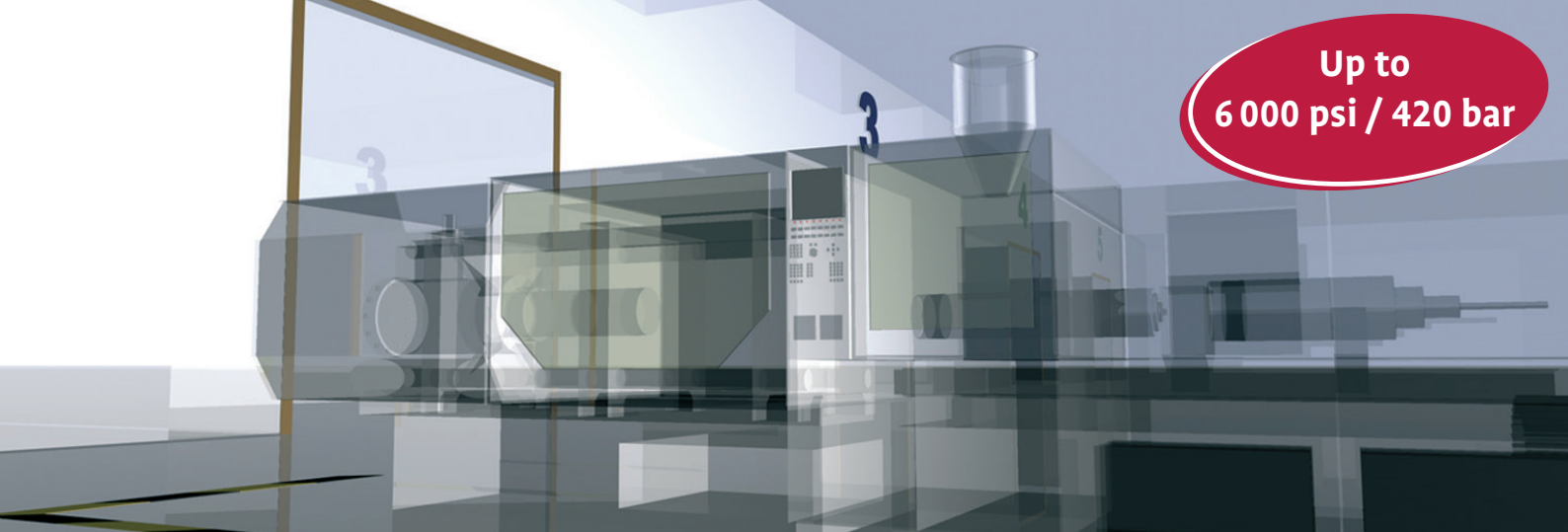
Manual operation 



Solenoid and manual override 



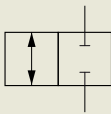
Hydraulic pilot operated 



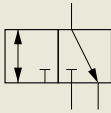
**Up to
6 000 psi / 420 bar**

Functions

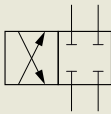
Directional Valve



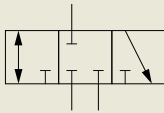
2/2 way valve



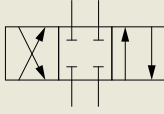
3/2 way valve



4/2 way valve

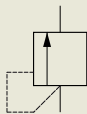


3/3 way valve

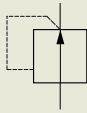


4/3 way valve

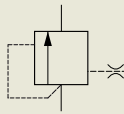
Pressure Valve



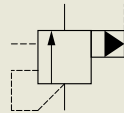
pressure relief



pressure reducing



pressure compensator

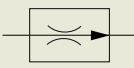


pressure controlled

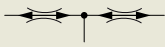
Flow Valve



throttle valve



flow control valve



flow divider / combiner



shut-off

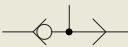
Check Valve



spring loaded check valve

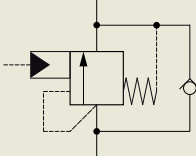


pilot operated check valve

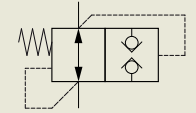


shuttle valve

Safety Valve



load control valve



pipe rupture valve

Sizes

Nominal flow	< 2.5 gpm < 10 l/min	< 5 gpm < 20 l/min	< 11 gpm < 40 l/min	< 19 gpm < 70 l/min	< 37 gpm < 140 l/min	< 50 gpm < 190 l/min	< 90 gpm < 350 l/min
Size SAE	AN 04	AN 08	AN 10	AN 12	AN 16	SAE	
Thread SAE	7/16" - 20 UNF	3/4" - 16 UNF	7/8" - 14 UNF	1 1/16" - 12 UN	1 5/16" - 12 UN	-	
Size ISO	NG 1...4	NG 5	NG 6	NG 10	NG 16	ISO	
Thread ISO	M20 x 1.5	M20 x 1.5	M20 x 1.5	M24 x 1.5	M42 x 2	-	

Flow Preventing Valves

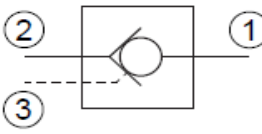
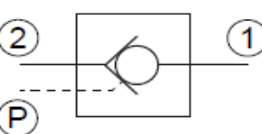
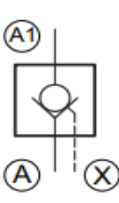
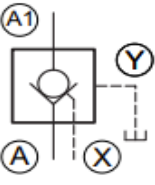
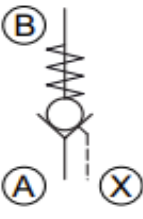
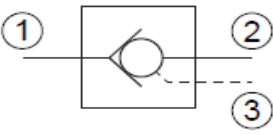
Chapter 1



Check Valves

Symbol	Description	Type	Flow Q_{max} [gpm]		Flow Q_{max} [l/min]		Pressure P_{max} [psi]		Pressure P_{max} [bar]		Cavity	Part#	Datasheet
	This unit is a screw in, cartridge type, forward guided poppet, hydraulic check valve, for use as a blocking or load holding device.	CVPF-08	10	b)	37	b)	3600	**)	250	**)	C0820 3/4-16 UNF	520...	CVPF-08_520-P-010410-en
		CVFP-10	18	b)	68	b)	3600	**)	250	**)	C1020 7/8-14 UNF	520...	CVFP-10_520-P-010120-en
		CVFP-12	36	b)	135	b)	3600	**)	250	**)	C1220 1 1/16-12 UN	520...	CVFP-12_520-P-010130-en
		CVFP-16	60	b)	228	b)	3600	**)	250	**)	C1620 1 5/16-12 UN	520...	CVFP-16_520-P-010140-en
	This unit is a screw in, cartridge type, reverse guided poppet, hydraulic check valve, for use as a blocking or load holding device.	CVRP-08	10	b)	37	b)	3600	**)	250	**)	C0820 3/4-16 UNF	520...	CVRP-08_520-P-010210-en
		CVRP-10	18	b)	68	b)	3600	**)	250	**)	C1020 7/8-14 UNF	520...	CVRP-10_520-P-010220-en
		CVRP-12	36	b)	135	b)	3600	**)	250	**)	C1220 1 1/16-12 UN	520...	CVRP-12_520-P-010230-en
		CVRP-16	50	b)	185	b)	3600	**)	250	**)	C1620 1 5/16-12 UN	520...	CVRP-16_520-P-010240-en
	This unit is a screw in, cartridge type, forward guided ball, hydraulic check valve, for use as a blocking or load holding device.	CVFB-04	2.5	b)	9.4	b)	3600	**)	250	**)	C0820 3/4-16 UNF	520...	CVFB-04_520-P-010300-en
		CVFB-08	10	b)	37	b)	3600	**)	250	**)	C0820 3/4-16 UNF	520...	CVFB-08_520-P-010310-en
		CVFB-10	18	b)	68	b)	3600	**)	250	**)	C1020 7/8-14 UNF	520...	CVFB-10_520-P-010320-en
	This unit is a screw in, cartridge type, guided poppet, hydraulic check valve, for use as a blocking or load holding device.	RVPA-10	31	c)	120	c)	5000	*)	350	*)	DC M24 x 1.5	400...	RVP-10_400-P-455101-en
		RVP 16	42	d)	160	d)	7100	*)	500	*)	see Data sheet	300...	RVP-16_300-P-9050063-en
		RVP 22	66	d)	250	d)	7100	*)	500	*)	see Data sheet	300...	RVP-22_300-P-9050091-en

Pilot Actuated Check Valves

Symbol	Description	Type	Flow Q_{max} [gpm]		Flow Q_{max} [l/min]		Pressure P_{max} [psi]		Pressure P_{max} [bar]		Cavity	Part#	Datasheet
	This unit is a screw in, cartridge type, guided poppet, hydraulic actuated check valve, for use as a blocking or load holding device.	POCI-08	10	b)	37	b)	3600	**)	250	**)	C0825 3/4-16 UNF	520...	POCI-08_520-P-011010-en
		POCI-10	18	b)	68	b)	3600	**)	250	**)	C1025 7/8-14 UNF	520...	POCI-10_520-P-011020-en
		POCI-12	35	b)	132.5	b)	3600	**)	250	**)	C1225 1 1/16-12 UN	520...	POCI-12_520-P-011030-en
	This unit is a screw in, cartridge type, guided poppet, external hydraulic actuated check valve, for use as a blocking or load holding device.	POCX-08	10	b)	37	b)	3600	**)	250	**)	C0820 3/4-16 UNF	520...	POCX-08_520-P-011110-en
		POCX-10	18	b)	68	b)	3600	**)	250	**)	C1020 7/8-14 UNF	520...	POCX-10_520-P-011120-en
		POCX-12	35	b)	132.5	b)	3600	**)	250	**)	C1220 1 1/16-12 UN	520...	POCX-12_520-P-011130-en
	This unit is a screw in, cartridge type, guided poppet, hydraulic actuated check valve, for use as a blocking or load holding device for very pressure applications.	REPB-10	31	c)	120	c)	5000	*)	350	*)	RC M32 x 1.5	400...	REP-10_400-P-456101-en
		REPNB-16	79	c)	300	c)	5000	*)	350	*)	EC M42 x 2	400...	REP,N,Y-16_400-P-457101-en
	This unit is a screw in, cartridge type, guided poppet, hydraulic actuated check valve with separate drain port, for use as a blocking or load holding device for applications with back-pressure.	REPYB-10	31	c)	120	c)	5000	*)	350	*)	RCY M32 x 1.5	400...	REPY-10_400-P-456501-en
		REPYB-16	79	c)	300	c)	5000	*)	350	*)	ECY M42 x 2	400...	REP,N,Y-16_400-P-457101-en
	pilot operated, load pressure closing cone poppet valve, two-stage principle (decompression / main opening), these screw-in cartridges are predominantly used in certain mobile and industrial applications to maintain the position of loaded actuators (e.g. outrigger cylinders)	ERV 8	21	d)	80	d)	6500	*)	450	*)	see Data sheet	300...	ERV-8_300-P-9050014-en
		ERV 8-600	21	d)	80	d)	8700	*)	600	*)	see Data sheet	300...	ERV-8-600_300-P-9050092-en
	This unit is a screw in cartridge type, guided poppet, hydraulic pilot operated check valve, for use as a blocking or load holding device.	PTCC-10	10	b)	37	b)	3600	**)	250	**)	C1025 1 1/16-12 UN	520...	PTCC-10_520-P-012020-en

Pilot Actuated Dual Check Valves

Symbol	Description	Type	Flow Q_{max} [gpm]	Flow Q_{max} [l/min]	Pressure P_{max} [psi]	Pressure P_{max} [bar]	Cavity	Part#	Datasheet				
	<p>This unit is a screw in, cartridge type, guided poppet, hydraulic actuated dual check valve, for use as a blocking or load holding device. Option thermal relief.</p>	PDCV-08	5	b)	18	b)	3600	**)	250	**)	C0840 3/4-16 UNF	520...	PDCV-08_520-P-011510-en
		POCD-10	10	b)	37	b)	3600	**)	250	**)	C1040 7/8-14 UNF	520...	POCD-10_520-P-011320-en
	<p>This unit is a screw in, cartridge type, guided ball, hydraulic check valve, for use as a blocking or load holding device.</p>	DPOC-08	10	b)	37	b)	3600	**)	250	**)	C0840 3/4-16 UNF	520...	DPOC-08_520-P-011410-en
		DPOC-10	18	b)	68	b)	3600	**)	250	**)	C1040 7/8-14 UNF	520...	DPOC-10_520-P-011420-en
		DPOC-12	36	b)	135	b)	3600	**)	250	**)	C1240 1 1/16-12 UNF	520...	DPOC-12_520-P-011430-en
	<p>This unit is a screw in, cartridge type, guided poppet, hydraulic actuated dual check valve including pipe rupture protection, for use as a blocking or load holding for high pressure applications. Excellent for stabilizers on mobile machines.</p>	DERV 8	18	d)	70	d)	5000 (load: 7000)	*)	350 (load: 500)	*)	see Data sheet	300...	DERV-8_300-P-9050061-en
		DERV 10	26	d)	100	d)	5000 (load: 7000)	*)	350 (load: 500)	*)	see Data sheet	300...	DERV-10_300-P-9050112-en

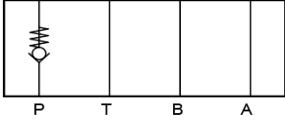
Shuttle Valves

Symbol	Description	Type	Flow Q_{max} [gpm]	Flow Q_{max} [l/min]	Pressure P_{max} [psi]	Pressure P_{max} [bar]	Cavity	Part#	Datasheet				
	<p>This unit is a screw in, cartridge type, two ported with external third outlet port, two position, hydraulic shuttle valve.</p>	BDSV-10-X-2	6	b)	22	b)	5000	**)	350	**)	C1020 7/8-14 UNF	520...	BDSV-10_520-P-040120-en
		BDSV-04-X-3	1.5	b)	5.6	b)	5000	**)	350	**)	C0430 7/16-20 UNF	520...	BDSV-04_520-P-040200-en
	<p>This unit is a screw in, cartridge type, three ported, two position, hydraulic shuttle valve.</p>	BDSV-08-X-3	3	b)	11	b)	5000	**)	350	**)	C0830 3/4-16 UNF	520...	BDSV-08_520-P-040210-en
		BDSV-10-X-3	6	b)	22	b)	5000	**)	350	**)	C1030 7/8-14 UNF	520...	BDSV-10_520-P-040220-en

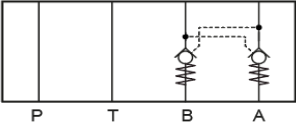
Check Valve Inserts

Symbol	Description	Type	Flow Q_{max} [gpm]	Flow Q_{max} [l/min]	Pressure P_{max} [psi]	Pressure P_{max} [bar]	Cavity	Part#	Datasheet				
	<p>The valve shuts off whichever one of the two inlet ports A and B is at the lower pressure. Port C is therefore connected with whichever one is at the higher pressure.</p>	RWA	2	c)	8	c)	3600	*)	250	*)	AE G1/8"	400...	RWA-2_400-P-470101-en
		RWZ	2	c)	8	c)	3600	*)	250	*)	AEZ G1/8"	400...	RW-2_400-P-470501-en

Stack Mounting Check Valves

Symbol	Description	Type	Flow Q _{max} [gpm]	Flow Q _{max} [l/min]	Pressure P _{max} [psi]	Pressure P _{max} [bar]	Interface	Part#	Datasheet
	<p>This unit is a stack-mounting check valve, designed on the poppet/seat principle. The valve prevents any flow in one direction. In the opposite direction, free flow with minimal pressure drop is possible.</p>	SRV-4	6.5	25	3600	250	ISO 4401-02-01	400...	SRV-4 400-P-465501-en
		SRV-6	15	60	5000	350	ISO 4401-03-02	400...	SRV-6 400-P-466501-en
		SRV-10	31	120	5000	350	ISO 4401-05-04	400...	SRV-10 400-P-467501-en

Stack Mounting Check Valves (pilot operated)

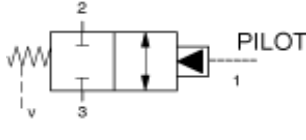
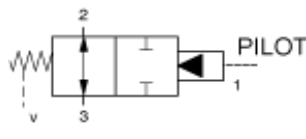

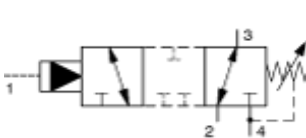

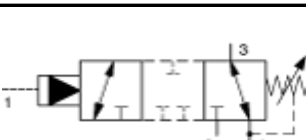
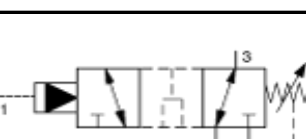
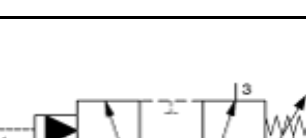

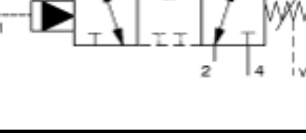
Symbol	Description	Type	Flow Q _{max} [gpm]	Flow Q _{max} [l/min]	Pressure P _{max} [psi]	Pressure P _{max} [bar]	Interface	Part#	Datasheet
	<p>This unit is a pilot operated stack-mounting valve. The valve prevents any flow in one direction. In the opposite direction, free flow with minimal pressure drop is possible. By applying a defined pilot pressure at X, the checked flow direction is held open as long as the pilot pressure is maintained.</p>	SRE-4	6.5	25	3600	250	ISO 4401-02-01	400...	SRE-4 400-P-465101-en
		SRE-6	15	60	5000	350	ISO 4401-03-02	400...	SRE-6 400-P-466101-en
		SRE-10	31	120	5000	350	ISO 4401-05-04	400...	SRE-10 400-P-467101-en
		SRE-16	79	300	5000	350	ISO 4401-07-07	400...	SRE-16 400-P-468101-en

Directional Control Valves

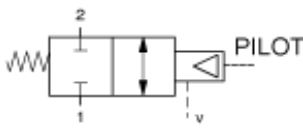
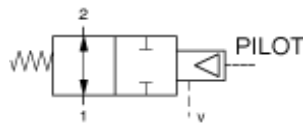
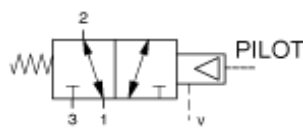
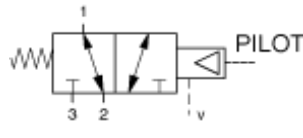
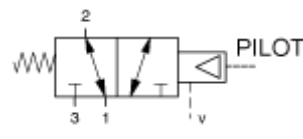
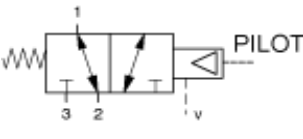
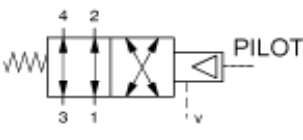
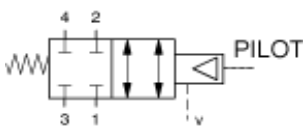
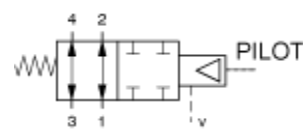
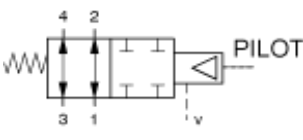
Chapter 2



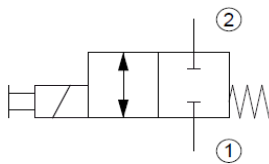
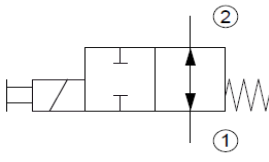
Directional Spool Valves (hydraulic actuated)

Symbol	Description	Type	Flow Q _{max} [gpm]	Flow Q _{max} [l/min]	Pressure P _{max} [psi]	Pressure P _{max} [bar]	Cavity	Part#	Datasheet		
	This unit is a direct acting, screw in cartridge style, spool type, hydraulic 2-way directional control element, requiring remote pilot actuation.	DCPV-10_C	10	b)	37	b)	5000 **)	350 **)	C1030 7/8-14 UNF	520...	DCPV-10-C_520-P-091820-en
	This unit is a direct acting, screw in cartridge style, spool type, hydraulic 2-way directional control element, requiring remote pilot actuation.	DCPV-10_O	10	b)	37	b)	5000 **)	350 **)	C1030 7/8-14 UNF	520...	DCPV-10-O_520-P-091920-en
	This unit is a direct acting, screw in cartridge style, spool type, hydraulic 3-way directional control element, requiring remote pilot actuation.	DCPS-10_A	12	b)	45	b)	5000 **)	350 **)	C1040 7/8-14 UNF	520...	DCPS-10-A_520-P-090120-en
		DCPS-16_A	36	b)	135	b)	5000 **)	350 **)	C1640 1 5/16-12 UN	520...	DCPS-16-A_520-P-090140-en
	This unit is a direct acting, screw in cartridge style, spool type, hydraulic 3-way directional control element, requiring remote pilot actuation.	DCPS-10_B	12	b)	45	b)	5000 **)	350 **)	C1040 7/8-14 UNF	520...	DCPS-10-B_520-P-090220-en
		DCPS-16_B	36	b)	135	b)	5000 **)	350 **)	C1640 1 5/16-12 UN	520...	DCPS-16-B_520-P-090240-en
	This unit is a direct acting, screw in cartridge style, spool type, hydraulic 3-way directional control element, requiring remote pilot actuation.	DCPS-10_C	12	b)	45	b)	5000 **)	350 **)	C1040 7/8-14 UNF	520...	DCPS-10-C_520-P-090320-en
		DCPS-16_C	36	b)	135	b)	5000 **)	350 **)	C1640 1 5/16-12 UN	520...	DCPS-16-C_520-P-090340-en
	This unit is a direct acting, screw in cartridge style, spool type, hydraulic 3-way directional control element, requiring remote pilot actuation.	DCPS-10_D	12	b)	45	b)	5000 **)	350 **)	C1040 7/8-14 UNF	520...	DCPS-10-D_520-P-090420-en
		DCPS-16_D	36	b)	135	b)	5000 **)	350 **)	C1640 1 5/16-12 UN	520...	DCPS-16-D_520-P-090440-en
	This unit is a direct acting, screw in cartridge style, spool type, hydraulic 3-way directional control element, requiring remote pilot actuation.	DCPS-10_E	12	b)	45	b)	5000 **)	350 **)	C1040 7/8-14 UNF	520...	DCPS-10-E_520-P-091120-en
		DCPS-16_E	36	b)	135	b)	5000 **)	350 **)	C1640 1 5/16-12 UN	520...	DCPS-16-E_520-P-091140-en
	This unit is a direct acting, screw in cartridge style, spool type, hydraulic 3-way directional control element, requiring remote pilot actuation.	DCPS-10_F	12	b)	45	b)	5000 **)	350 **)	C1040 7/8-14 UNF	520...	DCPS-10-F_520-P-091220-en
		DCPS-12_F	24	b)	90	b)	5000 **)	350 **)	C1240 1 1/16-12 UN	520...	DCPS-12-F_520-P-091230-en
		DCPS-16_F	36	b)	135	b)	5000 **)	350 **)	C1640 1 5/16-12 UN	520...	DCPS-16-F_520-P-091240-en
	This unit is a direct acting, screw in cartridge style, spool type, hydraulic 3-way directional control element, requiring remote pilot actuation.	DCPS-10_G	12	b)	45	b)	5000 **)	350 **)	C1040 7/8-14 UNF	520...	DCPS-10-G_520-P-091320-en
		DCPS-16_G	36	b)	135	b)	5000 **)	350 **)	C1640 1 5/16-12 UN	520...	DCPS-16-G_520-P-091340-en
	This unit is a direct acting, screw in cartridge style, spool type, hydraulic 3-way directional control element, requiring remote pilot actuation.	DCPS-10_H	12	b)	45	b)	5000 **)	350 **)	C1040 7/8-14 UNF	520...	DCPS-10-H_520-P-091420-en
		DCPS-16_H	36	b)	135	b)	5000 **)	350 **)	C1640 1 5/16-12 UN	520...	DCPS-16-H_520-P-091440-en

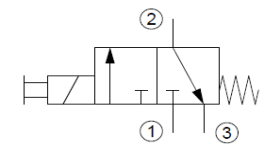
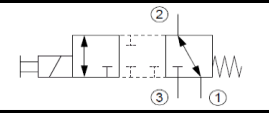
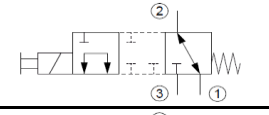
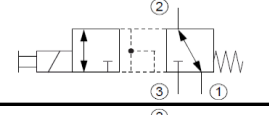
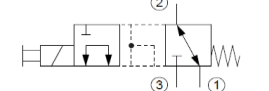
Directional Spool Valves (pneumatic actuated)

Symbol	Description	Type	Flow Q_{max} [gpm]		Flow Q_{max} [l/min]		Pressure P_{max} [psi]		Pressure P_{max} [bar]		Cavity	Part#	Datasheet
	This unit is a normally closed, two position, screw-in cartridge style, direct acting spool type, air or hydraulic operated, spring return, hydraulic directional control valve.	AODV-10_C1	8	b)	30	b)	5000	**)	350	**)	C1020 7/8-14 UNF	520...	AODV-10-C1 520-P-092120-en
		AODV-12_C1	16	b)	60	b)	5000	**)	350	**)	C1220 1 1/16-12 UN	520...	AODV-12-C1 520-P-092130-en
	This unit is a normally open, two position, screw-in cartridge style, direct acting spool type, air or hydraulic operated, spring return, hydraulic directional control valve.	AODV-10_O1	8	b)	30	b)	5000	**)	350	**)	C1020 7/8-14 UNF	520...	AODV-10-O1 520-P-092520-en
		AODV-12_O1	16	b)	60	b)	5000	**)	350	**)	C1220 1 1/16-12 UN	520...	AODV-12-O1 520-P-092530-en
	This unit is a three-way, two position, screw-in cartridge style, direct acting spool type, air or hydraulic operated, spring return, hydraulic directional control valve.	AODV-10_3A	8	b)	30	b)	5000	**)	350	**)	C1030 7/8-14 UNF	520...	AODV-10-3A 520-P-093020-en
		AODV-12_3A	16	b)	60	b)	5000	**)	350	**)	C1230 1 1/16-12 UN	520...	AODV-12-3A 520-P-093030-en
	This unit is a three-way, two position, screw-in cartridge style, direct acting spool type, air or hydraulic operated, spring return, hydraulic directional control valve.	AODV-10_3B	8	b)	30	b)	5000	**)	350	**)	C1030 7/8-14 UNF	520...	AODV-10-3B 520-P-093120-en
		AODV-12_3B	16	b)	60	b)	5000	**)	350	**)	C1230 1 1/16-12 UN	520...	AODV-12-3B 520-P-093130-en
	This unit is a three-way, two position, screw-in cartridge style, direct acting spool type, air or hydraulic operated, spring return, hydraulic directional control valve.	AODV-10_3C	8	b)	30	b)	5000	**)	350	**)	C1030 7/8-14 UNF	520...	AODV-10-3C 520-P-093220-en
		AODV-12_3C	16	b)	60	b)	5000	**)	350	**)	C1230 1 1/16-12 UN	520...	AODV-12-3C 520-P-093230-en
	This unit is a three-way, two position, screw-in cartridge style, direct acting spool type, air or hydraulic operated, spring return, hydraulic directional control valve.	AODV-10_3D	8	b)	30	b)	5000	**)	350	**)	C1030 7/8-14 UNF	520...	AODV-10-3D 520-P-093320-en
		AODV-12_3D	16	b)	60	b)	5000	**)	350	**)	C1230 1 1/16-12 UN	520...	AODV-12-3D 520-P-093330-en
	This unit is a four-way, two position, screw-in cartridge style, direct acting spool type, air or hydraulic operated, spring return, hydraulic directional control valve.	AODV-10_4A	8	b)	30	b)	5000	**)	350	**)	C1040 7/8-14 UNF	520...	AODV-10-4A 520-P-093520-en
		AODV-12_4A	16	b)	60	b)	5000	**)	350	**)	C1240 1 1/16-12 UN	520...	AODV-12-4A 520-P-093530-en
	This unit is a four-way, two position, screw-in cartridge style, direct acting spool type, air or hydraulic operated, spring return, hydraulic directional control valve.	AODV-10_4B	8	b)	30	b)	5000	**)	350	**)	C1040 7/8-14 UNF	520...	AODV-10-4B 520-P-093620-en
		AODV-12_4B	16	b)	60	b)	5000	**)	350	**)	C1240 1 1/16-12 UN	520...	AODV-12-4B 520-P-093630-en
	This unit is a four-way, two position, screw-in cartridge style, direct acting spool type, air or hydraulic operated, spring return, hydraulic directional control valve.	AODV-10_4C	8	b)	30	b)	5000	**)	350	**)	C1040 7/8-14 UNF	520...	AODV-10-4C 520-P-093720-en
		AODV-12_4C	16	b)	60	b)	5000	**)	350	**)	C1240 1 1/16-12 UN	520...	AODV-12-4C 520-P-093730-en
	This unit is a four-way, two position, screw-in cartridge style, direct acting spool type, air or hydraulic operated, spring return, hydraulic directional control valve.	AODV-10_4D	8	b)	30	b)	5000	**)	350	**)	C1040 7/8-14 UNF	520...	AODV-10-4D 520-P-093820-en
		AODV-12_4D	16	b)	60	b)	5000	**)	350	**)	C1240 1 1/16-12 UN	520...	AODV-12-4D 520-P-093830-en

2-way / 2-position Directional Spool Valves (solenoid actuated)

Symbol	Description	Type	Flow Q _{max} [gpm]	Flow Q _{max} [l/min]	Pressure P _{max} [psi]	Pressure P _{max} [bar]	Cavity	Part#	Datasheet				
	This unit is a normally closed, two position, cartridge type, spool type, direct acting, screw in type, solenoid actuated, directional control valve.	WK22G...	7.5	c)	30	c)	3600	*)	250	*)	AL 3/4-16 UNF	400...	WK22-5 400-P-121160-en
	This unit is a normally open, two position, cartridge type, spool type, direct acting, screw in type, solenoid actuated, directional control valve.	WK22O...	7.5	c)	30	c)	3600	*)	250	*)	AL 3/4-16 UNF	400...	WK22O-5 400-P-121161-en

3-way / 2-position Directional Spool Valves (solenoid actuated)

Symbol	Description	Type	Flow Q _{max} [gpm]	Flow Q _{max} [l/min]	Pressure P _{max} [psi]	Pressure P _{max} [bar]	Cavity	Part#	Datasheet				
	This unit is a three-way, two position, cartridge type, spool type, direct acting, screw in type, solenoid actuated, directional control valve.	WKP32G / OLA1	1.25	c)	5	c)	6000	*)	420	*)	AM/C0830 3/4-16 UNF	400...	WKP32-1 400-P-120621-en
		WKP32G / ONA3	3.75	c)	15	c)	6000	*)	420	*)	AM/C0830 3/4-16 UNF	400...	WKP32-3 400-P-120821-en
		WK32G / O	7.5	c)	30	c)	3600	*)	250	*)	AM/C0830 3/4-16 UNF	400...	WK32-5 400-P-121180-en
	This unit is a three-way, two position, cartridge type, spool type, direct acting, screw in type, solenoid actuated, directional control valve.	ESDV-12-3A	16	b)	60	b)	5000	**)	350	**)	C1230 1 1/16-12 UN	520...	ESDV-12 520-P-106030-en
		ESDV-12-3B	16	b)	60	b)	5000	**)	350	**)	C1230 1 1/16-12 UN	520...	ESDV-12 520-P-106030-en
		ESDV-12-3C	16	b)	60	b)	5000	**)	350	**)	C1230 1 1/16-12 UN	520...	ESDV-12 520-P-106030-en
		ESDV-12-3D	16	b)	60	b)	5000	**)	350	**)	C1230 1 1/16-12 UN	520...	ESDV-12 520-P-106030-en

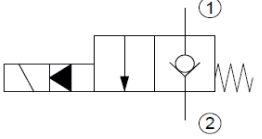
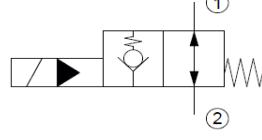
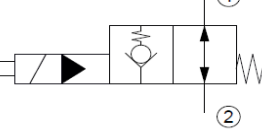
4-way / 2-position Directional Spool Valves (solenoid actuated)

Symbol	Description	Type	Flow Q _{max} [gpm]	Flow Q _{max} [l/min]	Pressure P _{max} [psi]	Pressure P _{max} [bar]	Cavity	Part#	Datasheet		
		ESDV-12-4A	20	b) 75	b) 5000	**)	350	**)	C1240 1 1/16-12 UN	520...	ESDV-12-4 520-P-107030-en
		ESDV-12-4B	16	b) 60	b) 5000	**)	350	**)	C1240 1 1/16-12 UN	520...	ESDV-12 520-P-107031
	This unit is a four-way, two position, cartridge type, spool type, direct acting, screw in type, solenoid actuated, directional control valve.	ESDV-12-4C	16	b) 60	b) 5000	**)	350	**)	C1240 1 1/16-12 UN	520...	ESDV-12 520-P-107031
		ESDV-12-4D	16	b) 60	b) 5000	**)	350	**)	C1240 1 1/16-12 UN	520...	ESDV-12 520-P-107031
		ESDV-12-4F	20	b) 75	b) 5000	**)	350	**)	C1240 1 1/16-12 UN	520...	ESDV-12-4 520-P-107030-en
		WK42AD...	7.5	c) 30	c) 3600	*)	250	*)	AN 3/4-16 UNF	400...	WK42-5 400-P-121220-en
		WKP42ALA1	1.25	c) 5	c) 6000	*)	420	*)	AN 3/4-16 UNF	400...	WKP42-1 400-P-120641-en
	WKP42ANA3	3.75	c) 15	c) 6000	*)	420	*)	AN 3/4-16 UNF	400...	WKP42-3 400-P-120841-en	
	WKP42ANA5	7.5	c) 30	c) 3600	*)	250	*)	AN 3/4-16 UNF	400...	WK42-5 400-P-121220-en	

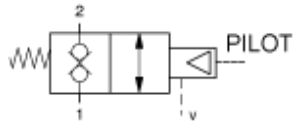
4-way / 3-position Directional Spool Valves (solenoid actuated)

Symbol	Description	Type	Flow Q _{max} [gpm]	Flow Q _{max} [l/min]	Pressure P _{max} [psi]	Pressure P _{max} [bar]	Cavity	Part#	Datasheet		
	This unit is a four-way, three position, cartridge type, spool type, direct acting, screw in type, solenoid actuated, directional control valve.	WK43D	7.5	c) 30	c) 3600	*)	250	*)	AN 3/4-16 UNF	400...	WK43-5 400-P-121240-en
	This unit is a four-way, three position, cartridge type, spool type, direct acting, screw in type, solenoid actuated, directional control valve.	WK43G	7.5	c) 30	c) 3600	*)	250	*)	AN 3/4-16 UNF	400...	WK43G-5 400-P-121241-en

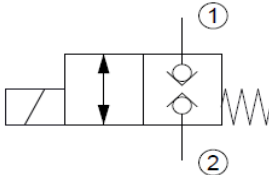
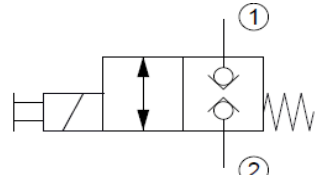
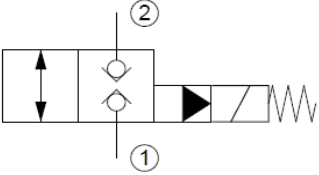
2-way / 2-position Directional Poppet Valves (free reverse flow, solenoid actuated)

Symbol	Description	Type	Flow Q _{max} [gpm]	Flow Q _{max} [l/min]	Pressure P _{max} [psi]	Pressure P _{max} [bar]	Cavity	Part#	Datasheet				
		WR22GA5...	10	c)	40	c)	5000	*)	350	*)	AL 3/4-16 UNF	400...	WR22GA5 400-P-121120-en
		WRP22G5...	10	c)	40	c)	6000	*)	420	*)	AL 3/4-16 UNF	400...	WRP22G5 400-P-121121-en
		WR22GZ5...	10	c)	40	c)	5000	*)	350	*)	ALM M20 x 1,5	400...	WR22GZ5 400-P-121125-en
		WR22LA5...	10	c)	40	c)	5000	*)	350	*)	AL 3/4-16 UNF	400...	WR22LA5 400-P-121142-en
		WR22LZ5...	10	c)	40	c)	5000	*)	350	*)	ALM M20 x 1,5	400...	WR22LZ5 400-P-121143-en
	<p>This unit is a two-way, two position, normally closed, cartridge type, single blocking poppet type (free reverse flow), screw in type, solenoid actuated, directional control valve with high flow rates, low headloss, reliable switching, even after long well times.</p>	WRVP22G-8X	21	c)	80	c)	5000	*)	350	*)	AX/C1020 7/8-14 UNF	400...	WRVP22G-8X 400-P-122120-en
		WR22GC-10...	36	c)	140	c)	5000	*)	350	*)	DC M24 x 1,5	400...	WR22GC-10 400-P-131110-en
		WR22GD-10...	36	c)	140	c)	5000	*)	350	*)	DD M24 x 1,5	400...	WR22GD-10 400-P-131111-en
		WRV_22G-10F	36	c)	140	c)	5000	*)	350	*)	HF/C1220A 1 1/16-12 UN	400...	WRV22G-10F 400-P-131210-en
		WRA22GC-10...	36	c)	140	c)	5000	*)	350	*)	DC M24 x 1,5	400...	WRA22GC-10 400-P-131120-en
		WRA22GD-10...	36	c)	140	c)	5000	*)	350	*)	DD M24 x 1,5	400...	WRA22GD-10 400-P-131121-en
		WRV_22G_10F	36	c)	140	c)	5000	*)	350	*)	HF/C1220A 1 1/16-12 UN	400...	WRV 22G 10F 400-P-131210
		WRV_22G_10A	36	c)	140	c)	5000	*)	350	*)	HA/C1220 1 1/16-12 UN	400...	WRV 22G 10A 400-P-131220
		WRVP22G-12A	47	c)	180	c)	5000	*)	350	*)	LA/C1620 1 5/16-12 UN	400...	WRVP22G 12A 400-P-145130
		WR22G-16...	92	c)	350	c)	6000	*)	420	*)	EB M42 x 2	400...	WR22G-16 400-P-150121-en
	<p>This unit is a two-way, two position, normally open, cartridge type, single blocking poppet type (coil force needs to be overcome with reverse flow), screw in type, solenoid actuated, directional control valve with high flow rates, low headloss, reliable switching, even after long dwell times.</p>	WR22OA5...	10	c)	40	c)	5000	*)	350	*)	AL 3/4-16 UNF	400...	WR22OA5 400-P-121126-en
		WRP22O5...	10	c)	40	c)	6000	*)	420	*)	AL 3/4-16 UNF	400...	WRP22O5 400-P-121122-en
		WR22OZ5...	10	c)	40	c)	5000	*)	350	*)	ALM M20 x 1,5	400...	WR22OZ5 400-P-121127-en
		WR22KA5...	10	c)	40	c)	5000	*)	350	*)	AL 3/4-16 UNF	400...	WR22KA5 400-P-121141-en
		WR22KZ5...	10	c)	40	c)	5000	*)	350	*)	ALM M20 x 1,5	400...	WR22KZ5 400-P-121140-en
		WRVP22O-8X	21	c)	80	c)	5000	*)	350	*)	AX/C1020 7/8-14 UNF	400...	WRVP22O-8X 400-P-122121-en
		WR22OC-10...	140	c)	140	c)	5000	*)	350	*)	DC M24 x 1,5	400...	WR22OC-10 400-P-131112-en
		WR22OD-10...	140	c)	140	c)	5000	*)	350	*)	DD M24 x 1,5	400...	WR22OD-10 400-P-131113-en
		WRV_22O-10F	36	c)	140	c)	5000	*)	350	*)	HF/C1220A 1 1/16-12 UN	400...	WRV22O-10F 400-P-131211-en
		WRA22OC-10...	36	c)	140	c)	5000	*)	350	*)	DC M24 x 1,5	400...	WRA22OC-10 400-P-131122-en
		WRA22OD-10...	36	c)	140	c)	5000	*)	350	*)	DD M24 x 1,5	400...	WRA22OD-10 400-P-131123-en
		WRV_22O_10A...	36	c)	140	c)	5000	*)	350	*)	HA/C1220 1 1/16-12 UN	400...	WRV 22O-10A 400-P-131221-en
		WRVP22O-12A...	47	c)	180	c)	5000	*)	350	*)	LA/C1620 1 5/16-12 UN	400...	WRVP22O-12A 400-P-145131-en
		WR22O-16...	92	c)	350	c)	6000	*)	420	*)	EB M42 x 2	400...	WR22O-16 400-P-150122-en

2-way / 2-position Directional Poppet Valves (double blocking, pneumatic actuated)

Symbol	Description	Type	Flow Q _{max} [gpm]	Flow Q _{max} [l/min]	Pressure P _{max} [psi]	Pressure P _{max} [bar]	Cavity	Part#	Datasheet				
	This unit is a normally closed, two position, screw-in cartridge style, direct acting balanced poppet, air or hydraulic operated, spring return, hydraulic directional control valve.	AODV-10_C3	6	b)	22	b)	5000	**)	350	**)	C1020 7/8-14 UNF	520...	AODV-10-C3 520-P-092320-en

2-way / 2-position Directional Seat Valves (double blocking, solenoid actuated)

Symbol	Description	Type	Flow Q _{max} [gpm]	Flow Q _{max} [l/min]	Pressure P _{max} [psi]	Pressure P _{max} [bar]	Cavity	Part#	Datasheet				
	This unit is a normally closed, two position, push-in cartridge style, direct acting, bidirectional seat-valve shut-off, solenoid actuated directional seat valve.	W1C...	10	c)	40	c)	4500	*)	315	*)	AA push-in	400...	W1C-6 400-P-110111-en
		WSP22G...	1.25	c)	5	c)	6000	*)	420	*)	AL 3/4-16 UNF	400...	WSP22-1 400-P-120601-en
	This unit is a normally closed, two position, screw-in cartridge style, direct acting balanced poppet, solenoid actuated directional control valve.	WSP22G...	3.75	c)	15	c)	6000	*)	420	*)	AL 3/4-16 UNF	400...	WSP22-3 400-P-120801-en
		WSDI22G-8X...	16	c)	60	c)	4500	*)	315	*)	AX/C1020 7/8-14 UNF	400...	WSDI22G-8X 400-P-122150-en
		WS22G...	7.5	c)	30	c)	3600	*)	250	*)	AL 3/4-16 UNF	400...	WS22-5 400-P-121100-en
	This unit is a normally closed, two position, screw-in cartridge style, direct acting balanced poppet, solenoid actuated directional control valve with manual override.	WS22G...	7.5	c)	30	c)	3600	*)	250	*)	ALM M20 x 1,5	400...	WS22-5 400-P-121100-en
		WS22G.D...	7.5	c)	30	c)	5000	*)	350	*)	ALM M20 x 1,5	400...	WS22-D-5 400-P-121110-en
		WS22G.D/O.D.	36	c)	140	c)	5000	*)	350	*)	DD M24 x 1,5	400...	WS22-10 400-P-131101-en
	This unit is a normally closed, two position, screw-in cartridge style, pilot operated poppet, double blocking solenoid actuated directional control valve.	WS22G.H...	36	c)	140	c)	5000	*)	350	*)	DH M27 x 2	400...	WS22-H-10 400-P-131102-en
		WSVN22G-10F	36	c)	140	c)	5000	*)	350	*)	HF/C1220A 1 1/16-12 UN	400...	WSVN22G-10F 400-P-131310-en
		WS22G...	92	c)	350	c)	6000	*)	420	*)	EB M42 x 2	400...	WS22-16 400-P-150101-en

2-way / 2-position Directional Seat Valves (double blocking, solenoid actuated)

Symbol	Description	Type	Flow Q_{max} [gpm]	Flow Q_{max} [l/min]	Pressure P_{max} [psi]	Pressure P_{max} [bar]	Cavity	Part#	Datasheet	
	This unit is a normally open , two position, screw-in cartridge style, direct acting balanced poppet, solenoid actuated directional control valve.	WSP220...	1.25	c) 5	c) 6000	*) 420	*)	AL 3/4-16 UNF	400...	WSP22-1 400-P-120601-en
		WSP220...	3.75	c) 15	c) 6000	*) 420	*)	AL 3/4-16 UNF	400...	WSP22-3 400-P-120801-en
	This unit is a normally open , two position, screw-in cartridge style, direct acting balanced poppet, solenoid actuated directional control valve with manual override.	WS220...	7.5	c) 30	c) 3600	*) 250	*)	AL 3/4-16 UNF	400...	WS220-5 400-P-121102-en
		WSVN220-10F...	36	c) 140	c) 5000	*) 350	*)	HF/C1220A 1 1/16-12 UN	400...	WSVN220-10F 400-P-131311-en
		WS220...	7.5	c) 30	c) 3600	*) 250	*)	ALM M20 x 1,5	400...	WS22-5 400-P-121103-en
	This unit is a normally open, two position, screw-in cartridge style, pilot operated, solenoid actuated directional control valve.	WS220.D.	36	c) 140	c) 5000	*) 350	*)	DD M24 x 1,5	400...	WS22-10 400-P-131101-en
		WS22G.H / O.H...	36	c) 140	c) 5000	*) 350	*)	DH M27 x 2	400...	WS22-H-10 400-P-131102-en
		WS22G / O...	36	c) 350	c) 6000	*) 420	*)	EB M42 x 2	400...	WS22-16 400-P-150101-en

2-way / 2-position Directional Seat Valves (EX-solenoid actuated)

Symbol	Description	Type	Flow Q_{max} [gpm]	Flow Q_{max} [l/min]	Pressure P_{max} [psi]	Pressure P_{max} [bar]	Cavity	Part#	Datasheet	
	This unit is a bidirectional leak-proof shut-off, direct acting, with EX-safety solenoid equipped valve. De-energized closed. An EX-protected solenoid for explosive gas atmospheres (II 2 G) is used to provide electrical operation of the cartridge.	EEx-W1C...	5	c) 20	c) 4500	*) 315	*)	AA push-in	400...	EExW1C-6 400-P-110210-en

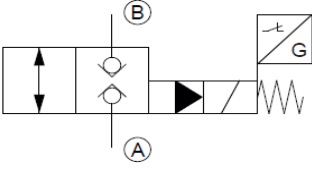
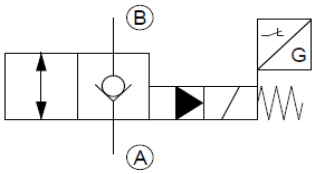
2-way / 2-position Directional Seat Valves (manually operated)

Symbol	Description	Type	Flow Q_{max} [gpm]	Flow Q_{max} [l/min]	Pressure P_{max} [psi]	Pressure P_{max} [bar]	Cavity	Part#	Datasheet	
	This unit is a bidirectional seat-valve shut-off, direct acting, hand lever-operated valve. Closed in the non-operated condition. The core element operates on the tried and tested principle of the guided poppet, and the guide spool has a seal.	W1T / W...	10	c) 40	c) 4500	*) 315	*)	AA push-in	400...	W1T,W-6 400-P-110310-en

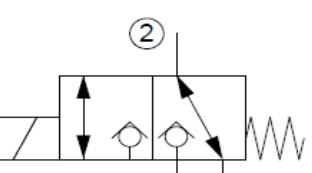
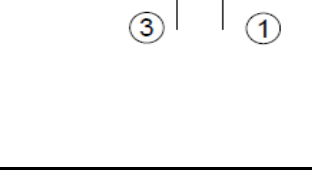
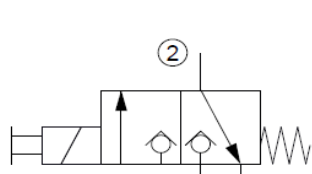
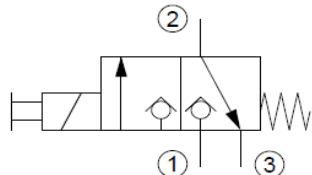
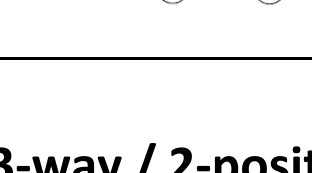
2-way / 2-position Directional Seat Valves (pneumatic operation)

Symbol	Description	Type	Flow Q_{max} [gpm]	Flow Q_{max} [l/min]	Pressure P_{max} [psi]	Pressure P_{max} [bar]	Cavity	Part#	Datasheet	
	This unit is a bidirectional seat-valve shut-off, direct acting, push-in cartridge. Closed in the non-operated condition. Guided valve spool and poppet.	W1Q...	10	c) 40	c) 4500	*) 315	*)	AA push-in	400...	W1Q-6 400-P-110410-en

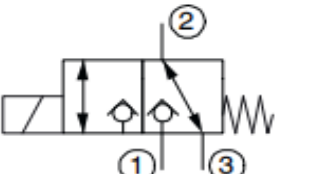
2-way / 2-position Directional Seat Valves (with position monitoring)

Symbol	Description	Type	Flow Q_{max} [gpm]	Flow Q_{max} [l/min]	Pressure P_{max} [psi]	Pressure P_{max} [bar]	Cavity	Part#	Datasheet	
	This unit is a normally closed, two position, screw-in cartridge style, pilot operated, double blocking solenoid actuated directional control valve with position monitoring.	WS22GNDS...	21	c) 80	c) 5000	*) 350	*)	DD M24 x 1,5	400...	WS22-S-10 400-P-131105-en
	This unit is a normally closed, two position, screw-in cartridge style, pilot operated poppet, free reverse flow, solenoid actuated directional control valve with position monitoring.	WR22G.DS...	21	c) 80	c) 5000	*) 350	*)	DD M24 x 1,5	400...	WR22-S-10 400-P-131115-en

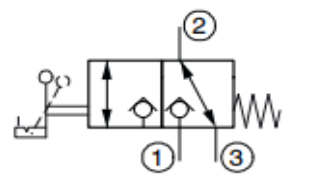
3-way / 2-position Directional Seat Valves (solenoid actuated)

Symbol	Description	Type	Flow Q_{max} [gpm]	Flow Q_{max} [l/min]	Pressure P_{max} [psi]	Pressure P_{max} [bar]	Cavity	Part#	Datasheet	
	This unit is a three-way, two position, cartridge type, seat-valve shut-off, direct acting, push-in type, solenoid actuated, directional control valve.	W1D / F...	10	c) 40	c) 4500	*) 315	*)	AC push-in	400...	W1D,F-6 400-P-110116-en
	This unit is a three-way, two position, cartridge type, seat-valve shut-off, direct acting, push-in type, solenoid actuated, directional control valve.	W1N32G...8	10	c) 40	c) 4500	*) 315	*)	AU/C1030 7/8-14 UNF	400...	W1N32G-8 400-P-112115-en
	This unit is a three-way, two position, cartridge type, seat-valve shut-off, direct acting, push-in type, solenoid actuated, directional control valve.	W1P32G...8	10	c) 40	c) 4500	*) 315	*)	AU/C1030 7/8-14 UNF	400...	W1P32G-8 400-P-112116-en
	This unit is a three-way, two position, cartridge type, poppet type, direct acting, screw-in type, solenoid actuated, directional control valve.	WS32GNA5	5.5	c) 22	c) 3600	*) 250	*)	AM 3/4-16 UNF	400...	WS32-5 400-P-121200-en
	This unit is a three-way, two position, cartridge type, poppet type, direct acting, screw-in type, solenoid actuated, directional control valve.	WSP32GA10...	15	c) 60	c) 3600	*) 250	*)	DN M33 x 2	400...	WSP32-10 400-P-131152-en

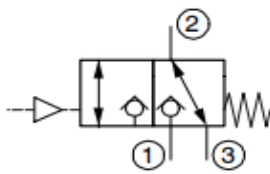
3-way / 2-position Directional Seat Valves (EX-solenoid actuated)

Symbol	Description	Type	Flow Q_{max} [gpm]	Flow Q_{max} [l/min]	Pressure P_{max} [psi]	Pressure P_{max} [bar]	Cavity	Part#	Datasheet	
	This unit is a bidirectional leak-proof shut-off, direct acting valve. An EX-protected solenoid for explosive gas atmospheres (II 2 G) is used to provide electrical operation of the cartridge. In the normal condition (de-energized), flow in port 1 is shut off without leakage.	EEx-W1D...	5	c) 20	c) 4500	*) 315	*)	AC push-in	400...	EExW1D,F-6 400-P-110215-en

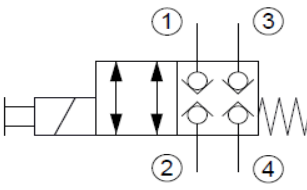
3-way / 2-position Directional Seat Valves (manually operated)

Symbol	Description	Type	Flow Q_{max} [gpm]	Flow Q_{max} [l/min]	Pressure P_{max} [psi]	Pressure P_{max} [bar]	Cavity	Part#	Datasheet	
	This unit is a bidirectional seat-valve shut-off, direct acting, hand lever-operated valve. Port 1 closed virtually leak-free in the non-operated condition. Guided valve spool and poppet.	W1U / X / V / Y...	10	c) 40	c) 4500	*) 315	*)	AC push-in	400...	W1U,X,V,Y-6 400-P-110315-en

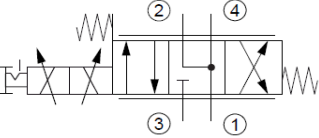
3-way / 2-position Directional Seat Valves (pneumatic operation)

Symbol	Description	Type	Flow Q_{max} [gpm]	Flow Q_{max} [l/min]	Pressure P_{max} [psi]	Pressure P_{max} [bar]	Cavity	Part#	Datasheet	
	This unit is a bidirectional seat-valve shut-off, direct acting, pressure balanced valve. Port 1 closed virtually leak-free in the non-operated condition. Guided valve spool and poppet.	W1R / S...	10	c) 40	c) 4500	*) 315	*)	AC push-in	400...	W1R,S-6 400-P-110415-en

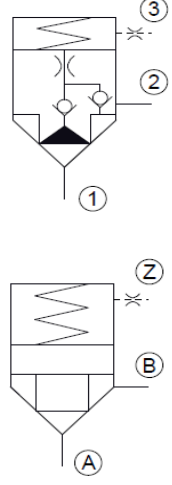
4-way / 2-position Directional Seat Valves (double locking)

Symbol	Description	Type	Flow Q_{max} [gpm]	Flow Q_{max} [l/min]	Pressure P_{max} [psi]	Pressure P_{max} [bar]	Cavity	Part#	Datasheet	
	all ports seat-valve shut-off, direct acting, the functions of two 2/2 directional seat valves are integrated in one cartridge, but requires only one electrical connection	WS42GNA-8...	7.5	c) 30	c) 4500	*) 315	*)	AT 7/8-14 UNF	400...	WS42GN-8 400-P-126210-en

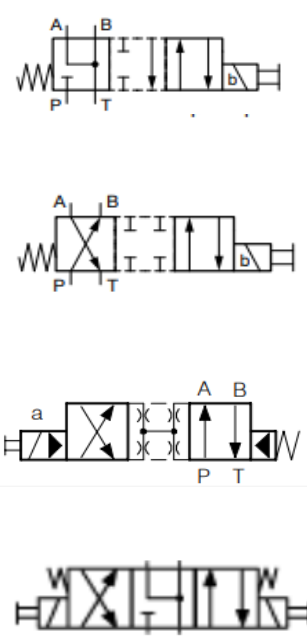
Special Directional Valves

Symbol	Description	Type	Flow Q_{max} [gpm]	Flow Q_{max} [l/min]	Pressure P_{max} [psi]	Pressure P_{max} [bar]	Cavity	Part#	Datasheet	
	Direct acting, sliding-spool design, with solenoid operation, minimum current threshold/ dead band is factory set for better consistency	PDFC	8	b) 30	b) 4000	**) 280	**)	C1040 7/8-14 UNF	520...	PDFC-10 520-P-113020-en

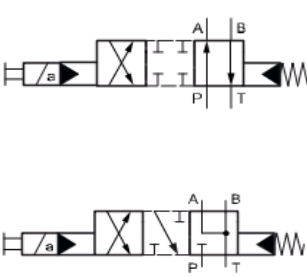
Logic Cartridge Valves (active or passive)

	WL22SD...	39	c)	150	c)	6000	*)	420	*)	DJ M27 x 2	400...	WL22SD-10 400-P-140101-en
	WL22SDU / S1...	39	c)	150	c)	6000	*)	420	*)	DJ M27 x 2	400...	WL22SDU-10 400-P-140111-en
	WL22SDL / R / P...	39	c)	150	c)	6000	*)	420	*)	DJ M27 x 2	400...	WL22SDL,R,P-10 400-P-140121-en
	WL22SD...	92	c)	350	c)	6000	*)	420	*)	EB M42 x 2	400...	WL22SD-16 400-P-160101-en
	WL22SDL...	92	c)	350	c)	6000	*)	420	*)	EB M42 x 2	400...	WL22SDL-16 400-P-160121-en
	WL22SDUR...	92	c)	350	c)	6000	*)	420	*)	EB M42 x 2	400...	WL22SDU-16 400-P-160151-en

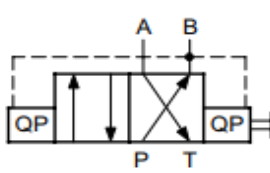
Manifold Mounting Directional Spool Valves (solenoid actuated)

Symbol	Description	Type	Flow Q_{max} [gpm]	Flow Q_{max} [l/min]	Pressure P_{max} [psi]	Pressure P_{max} [bar]	Interface	Part#	Datasheet
	<p>This unit is a direct acting, solenoid operated, manifold mounted spool valve. In the non-operated state, the return springs hold the control spool in the middle position or initial position. The control spool is operated by the DC or AC solenoids, which are of the oil-immersed type.</p>	WEDC...	6.5	25	3600	250	ISO 4401-02-01	400...	WED-4_400-P-180120-en
		WEDO...	21	80	5000	350	ISO 4401-03-02	400...	WEDO-6_400-P-181110-en
		WEDOU...	10	40	5000	350	ISO 4401-03-02	400...	WEDOU-6_400-P-181210-en
		WEDL...	10	40	2300	160	ISO 4401-03-02	400...	WEDL-6_400-P-181260-en
		WEVDK...	26	100	5000	350	ISO 4401-03-02	400...	WEVDK-6_400-P-181410-en
		WEVDE...	42	160	4500	315	ISO 4401-05-04	400...	WEVDE-10_400-P-185110-en
		WEDE...	31	120	4500	315	ISO 4401-05-04	400...	WEDE-10_400-P-185210-en
WEDEU...	26	100	4500	315	ISO 4401-05-04	400...	WEDEU-10_400-P-185310-en		

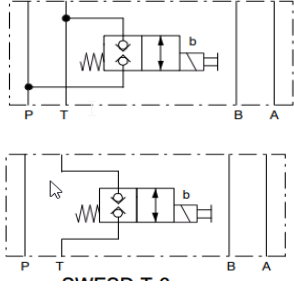
Manifold Mounting Directional Spool Valves (EX-solenoid actuated)

Symbol	Description	Type	Flow Q_{max} [gpm]	Flow Q_{max} [l/min]	Pressure P_{max} [psi]	Pressure P_{max} [bar]	Interface	Part#	Datasheet
	<p>This unit is a high performance, two-stage, spool valve with an EX-safety solenoid coil equipped. Slip-on coil design, coils can be changed without opening hydraulic envelope.</p> <p>This unit is a high performance, direct acting, spool valve with an EX-safety solenoid coil equipped. Slip-on coil design, coils can be changed without opening hydraulic envelope.</p>	EEx-WEV...	15	60	4500	315	ISO 4401-03-02	400...	EExWEV-6_400-P-190110-en
		EExd-WEV...	15	60	4500	315	ISO 4401-03-02	400...	EExdWEV-6_400-P-190210-en
		EEx-WEV...	23	90	4500	315	ISO 4401-05-04	400...	EExWEV-10_400-P-191110-en
		EExd-WEV...	23	90	4500	315	ISO 4401-05-04	400...	EExdWEV-10_400-P-191210-en
		EEx-WED...	4.75	18	2300	160	ISO 4401-03-02	400...	EExWED-6_400-P-190310-en
		EExd-WED...	4.75	18	2300	160	ISO 4401-03-02	400...	EExdWED-6_400-P-190410-en

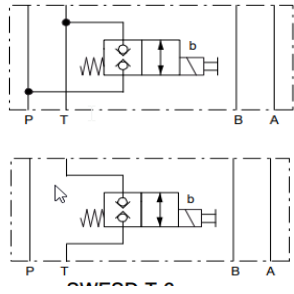
Manifold Mounting Directional Spool Valves (flow dependent auto-reversing)

Symbol	Description	Type	Flow Q_{max} [gpm]	Flow Q_{max} [l/min]	Pressure P_{max} [psi]	Pressure P_{max} [bar]	Interface	Part#	Datasheet
	<p>This unit is a flow controlled, self-reversing directional spool valve with automatic, load-independent reversal and a predefined actuator direction at start-up.</p>	WOFA...	7.5	30	3000	210	ISO 4401-03-02	400...	WOF-6_400-P-220110-en
		WOFB...	21	80	3000	210	ISO 4401-05-04	400...	WOF-10_400-P-221110-en

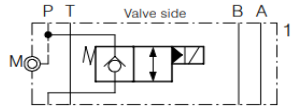
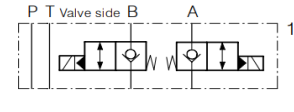
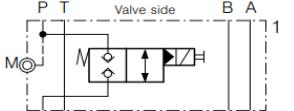
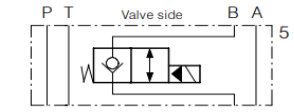
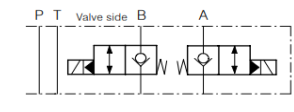
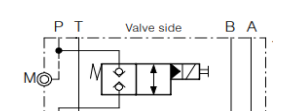
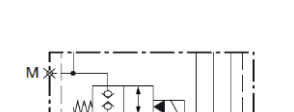
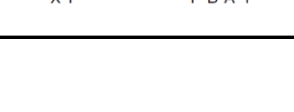

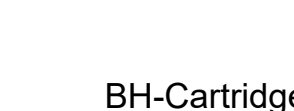
Stack Mounting Directional Valves (solenoid actuated, direct acting)

Symbol	Description	Type	Flow Q_{max} [gpm]	Flow Q_{max} [l/min]	Pressure P_{max} [psi]	Pressure P_{max} [bar]	Interface	Part#	Datasheet
	This unit is a high performance, bidirectional leak-proof shut-off, direct acting , electrically operated stack valve. The 2/2 solenoid operated cartridge seat valve is designed on the poppet/seat principle, and is therefore virtually leak-free in both flow directions.	SWESD...	10	c) 40	c) 4500	*) 315	*)	ISO 4401-03-02 400...	SWES-6_400-P-116110-en

Stack Mounting Directional Valves (EX-solenoid actuated)

Symbol	Description	Type	Flow Q_{max} [gpm]	Flow Q_{max} [l/min]	Pressure P_{max} [psi]	Pressure P_{max} [bar]	Interface	Part#	Datasheet
	This unit is a high performance, bidirectional leak-proof shut-off, direct acting, with EX-Safety solenoid operated stack valve. The 2/2 solenoid operated cartridge seat valve is designed on the poppet/seat principle, and is therefore virtually leak-free in both flow directions.	EEx-SWESB-PT...	5	c) 20	c) 4500	*) 315	*)	ISO 4401-03-02 400...	EExSWES-6_400-P-116210-en

Stack Mounting Directional Valves (solenoid actuated, two-stage)

Symbol	Description	Type	Flow Q_{max} [gpm]	Flow Q_{max} [l/min]	Pressure P_{max} [psi]	Pressure P_{max} [bar]	Interface	Part#	Datasheet
		SWR22..EDA	15	c) 60	c) 4500	*) 315	*)	ISO 4401-03-02 400...	SWR,A22-EDA-6_400-P-230120-en
		SWR22..EA	10	c) 40	c) 4500	*) 315	*)	ISO 4401-03-02 400...	SWR22-EA-6_400-P-230125-en
		SWRA22..ECA		c) 80	c) 4500	*) 315	*)	ISO 4401-03-02 400...	SWRA22-ECA-6_400-P-230130-en
		SWS22..NDA	15	c) 60	c) 4500	*) 315	*)	ISO 4401-03-02 400...	SWS22_ND-6_400-P-230501-en
	This unit is a bidirectional seat-valve shut-off, electrically operated, two stage, screw-in stack valve. The 2/2 solenoid operated cartridge seat valve is designed on the poppet/seat principle, and is therefore virtually leak-free in both flow directions.	SWR22..EDA	36	c) 140	c) 4500	*) 315	*)	ISO 4401-05-04 400...	SWR22-EDA-10_400-P-235120-en
		SWR22..ECA	36	c) 140	c) 4500	*) 315	*)	ISO 4401-05-04 400...	SWR22-ECA-10_400-P-235125-en
		SWRA22..ECA	36	c) 140	c) 4500	*) 315	*)	ISO 4401-05-04 400...	SWRA22-ECA-10_400-P-235130-en
		SWS22..NDA	36	c) 140	c) 4500	*) 315	*)	ISO 4401-05-04 400...	SWS22-NDA-10_400-P-235510-en
		SWS22..NCB	36	c) 140	c) 5000	*) 350	*)	ISO 4401-05-04 400...	SWS22-NCB-10_400-P-235520-en
		SWS22...	79	c) 300	c) 5000	*) 350	*)	ISO 4401-05-04 400...	SWS22-16_400-P-240101-en

Flow Control Valves

Chapter 3



Throttle Valves

Symbol	Description	Type	Flow Q _{max} [gpm]	Flow Q _{max} [l/min]	Pressure P _{max} [psi]	Pressure P _{max} [bar]	Cavity	Part#	Datasheet		
	This unit is a screw in, cartridge type, non-compensated, adjustable, bi-directional needle flow control valve.	NFCV-08	10	b)	37	b)	5000 **)	350 **)	C0820 3/4-16 UNF	520...	NFCV-08_520-P-020110-en
		NFCV-10	18	b)	68	b)	5000 **)	350 **)	C1020 7/8-14 UNF	520...	NFCV-10_520-P-020120-en
	This unit is a screw in, cartridge type, non-compensated, adjustable, bi-directional fine adjustment needle flow control valve.	NFFC-10	8	b)	30	b)	5000 **)	350 **)	C1020 7/8-14 UNF	520...	NFFC-10_520-P-020020-en
	This unit is a screw in, cartridge type, non-compensated, adjustable, bi-directional rotary flow control valve.	MRFC-10	18	b)	68	b)	5000 **)	350 **)	C1020 7/8-14 UNF	520...	MRFC-10_520-P-022020-en
	Throttle and shut-off function in both directions, leak-free shut-off function, available with adjusting screw or hand-knob.	MDPWA...	13	c)	50	c)	5000 *)	350 *)	AW M20 x 1,5	400...	MDP-5_400-P-405071-en
		MDPAA...	36	c)	140	c)	5000 *)	350 *)	CA M18 x 1,5	400...	MDP-10_400-P-405101-en
		MDPCA...	36	c)	140	c)	5000 *)	350 *)	DC M24 x 1,5	400...	MDP-10_400-P-405101-en

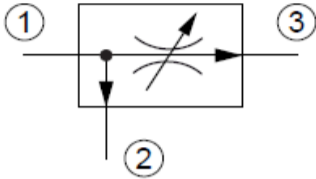
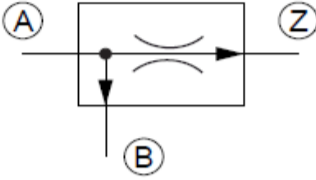
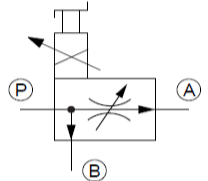
Throttle Check Valves

Symbol	Description	Type	Flow Q _{max} [gpm]	Flow Q _{max} [l/min]	Pressure P _{max} [psi]	Pressure P _{max} [bar]	Cavity	Part#	Datasheet		
	This unit is a screw in, cartridge type, adjustable, poppet type, hydraulic flow control valve with or without free reverse flow check.	FCVL-08	10	b)	37	b)	5000 **)	350 **)	C0820 3/4-16 UNF	520...	FCVL-08_520-P-020210-en
		FCVL-10	18	b)	68	b)	5000 **)	350 **)	C1020 7/8-14 UNF	520...	FCVL-10_520-P-020220-en
		FCVL-12	36	b)	135	b)	5000 **)	350 **)	C1220 1 1/16-12 UN	520...	FCVL-12_520-P-020230-en
	Low cost model for use in manifold blocks, self-cleaning metering areas, self-locking adjusting screw and locknut.	RDB...	21	c)	80	c)	5000 *)	350 *)	DF M20 x 1,5	400...	RD-6,10_400-P-407101-en
		RDB...	42	c)	160	c)	5000 *)	350 *)	DF M20 x 1,5	400...	RD-6,10_400-P-407101-en

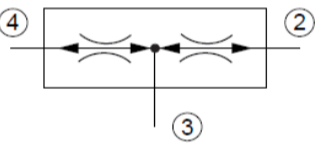
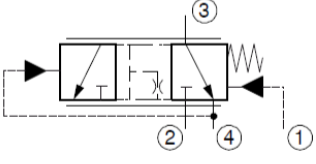
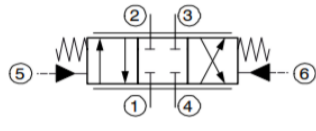
Flow Control Valves

Symbol	Description	Type	Flow Q _{max} [gpm]	Flow Q _{max} [l/min]	Pressure P _{max} [psi]	Pressure P _{max} [bar]	Cavity	Part#	Datasheet			
	This unit is a screw in, cartridge type, pressure compensated, fixed orifice, restrictive hydraulic flow control valve.	PCFC-08	6	b)	22.0	b)	5000 *)	350 *)	C0820 3/4-16 UNF	520...	PCFC-08_520-P-020310-en	
		PCFC-10	12	b)	45	b)	5000 *)	350 *)	C1020 7/8-14 UNF	520...	PCFC-10_520-P-020320-en	
		PCFC-12	24	b)	90	b)	5000 *)	350 *)	C1220 1 1/16-12 UN	520...	PCFC-12_520-P-020330-en	
	Load-independent flow rate, exceptionally constant flow rate over the entire pressure range, very good reproducibility, optimum integration in system thanks to adjustable pressure-compensator spring, minimal wear and long service life.	MRPA-2-1...	1.25	c)	5	c)	3600 *)	250 *)	GB G 1/4"	400...	MRP-2-1_400-P-408101-en	
		MRPA-2-10...	31	c)	120	c)	5000 *)	350 *)	ER M33 x 2	400...	MRP-2-10_400-P-410201-en	
		MRP-2D...									400...	under review
		MRPB-2-16...	52	c)	200	c)	5000 *)	350 *)	EF M42 x 2	400...	MRP-2-16_400-P-411101-en	

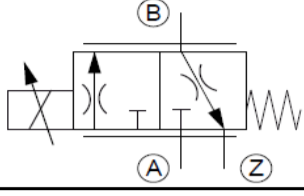
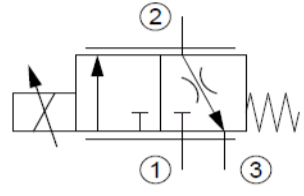
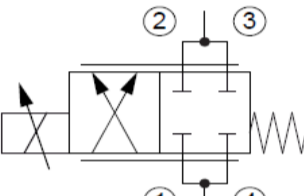
Flow Control Valves with separate drain (3-way)

Symbol	Description	Type	Flow Q _{max} [gpm]	Flow Q _{max} [l/min]	Pressure P _{max} [psi]	Pressure P _{max} [bar]	Cavity	Part#	Datasheet
		BFCV-08	6 b)	22.0 b)	5000 **)	350 **)	C0830 3/4-16 UNF	520...	BFCV-08_520-P-020510-en
	This unit is a screw in, cartridge type, pressure compensated, fixed orifice, priority type hydraulic flow control valve.	BFCV-10	12 b)	45 b)	5000 **)	350 **)	C1030 7/8-14 UNF	520...	BFCV-10_520-P-020520-en
		BFCV-12	20 b)	75 b)	5000 **)	350 **)	C1230 1 1/16-12 UN	520...	BFCV-12_520-P-020530-en
		BFCV-16	30 b)	110 b)	5000 **)	350 **)	C1630 1 5/16-12 UN	520...	BFCV-16_520-P-020540-en
	Flow control cartridge for HTF cavity type MDD, priority flow control in 7 standard settings.	MVR-3D...	15 c)	60 c)	4500 *)	315 *)	MDD M24 x 1,5	400...	MVR-3_400-P-412101-en
	plug-in coil for easy coil change, flow rates are unaffected by temperature change or when the higher load pressure alternates between the outlet ports.	SRCA	15 a)	60 a)	3600 *)	250 *)	GB3WM33	100...	SRCA_100-P-000144-en
		SRCB	26 a)	100 a)	4500 *)	315 *)	CSRCB3	100...	SRCB_100-P-000091-en

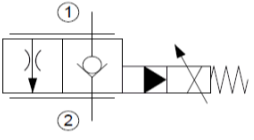
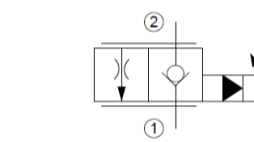

Flow Divider/Combiner Valves

Symbol	Description	Type	Flow Q _{max} [gpm]	Flow Q _{max} [l/min]	Pressure P _{max} [psi]	Pressure P _{max} [bar]	Cavity	Part#	Datasheet
		FDCV-08	8 b)	30 b)	5000 **)	350 **)	C0840 3/4-16 UNF	520...	FDCV-08_520-P-021010-en
	This unit is a spool type, screw in cartridge style, flow divider/combiner valve.	FDCV-10	16 b)	60 b)	5000 **)	350 **)	C1040 7/8-14 UNF	520...	FDCV-10_520-P-021020-en
		FDCV-12	32 b)	120 b)	5000 **)	350 **)	C1240 1 1/16-12 UN	520...	FDCV-12_520-P-021030-en
		FDCT-08	8 b)	30 b)	5000 **)	350 **)	C0840 3/4-16 UNF	520...	FDCT-08_520-P-021110-en
	This unit is a direct acting, screw in cartridge style, spool type, priority on demand pressure compensated flow control element. This unit is used to provide a load sense steering first with the priority flow when the steering demands the flow and the amount it requires before any other function in the system. When the steering or any other priority functions are satisfied, only then the excess flow is diverted to the auxiliary port for other functions.	PODS-08	8 b)	30 b)	5000 **)	350 **)	C0840 3/4-16 UNF	520...	PODS-08_520-P-071610-en
		PODS-10	16 b)	60 b)	5000 **)	350 **)	C1040 7/8-14 UNF	520...	PODS-10_520-P-071620-en
		PODS-12	24 b)	90 b)	5000 **)	350 **)	C1240 1 1/16-12 UN	520...	PODS-12_520-P-071630-en
		PODS-16	36 b)	135 b)	5000 **)	350 **)	C1640 1 5/16-12 UN	520...	PODS-16_520-P-071640-en
		PODS-20	60 b)	225 b)	3000 **)	210 **)	C2040 1 5/8-12 UN	520...	PODS-20_520-P-071650-en
	This unit is a direct acting, screw in cartridge style, spool type, flow control element. As soon as the pilot pressure of around 5 bar is reached, the spool starts to open the connection from port 1 to the actuator (port 2 or 3).	MDHP43...	39 c)	150 c)	6000 *)	420 *)	DZ M36 x 2	520...	MDHP43-10_400-P-630101-en

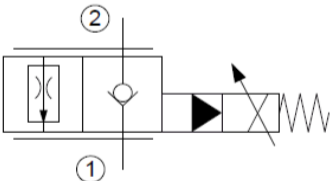
El. Proportional Throttle Valves

Symbol	Description	Type	Flow Q _{max} [gpm]	Flow Q _{max} [l/min]	Pressure P _{max} [psi]	Pressure P _{max} [bar]	Cavity	Part#	Datasheet
	Sliding-spool design, Model with port Z for secondary unloading, 4 nominal flow ranges, high pressure wet-armature solenoids.	MDRPA...	11 c)	45 c)	3600 *)	250 *)	DD M24 x 1,5	400...	MDRP-G-10 400-P-610101-en
	De-energised closed 1->2, Reliable operation over the whole pressure and flow range, with optional manual flow setting.	MDR32GN...	7.5 c)	30 c)	3600 *)	250 *)	AM 3/4-16 UNF	400...	MDR32G-5 400-P-618101-en
	Dual flow paths for higher flow rate, for use with inline or bypass pressure-compensator cartridges, reliable operation over the whole pressure and flow range.	MDR42A...	7.5 c)	30 c)	3600 *)	250 *)	AN 3/4-16 UNF	400...	MDR42AD-5 400-P-618201-en

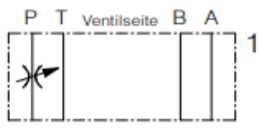
El. Proportional Throttle Valve Poppet Style

Symbol	Description	Type	Flow Q _{max} [gpm]	Flow Q _{max} [l/min]	Pressure P _{max} [psi]	Pressure P _{max} [bar]	Cavity	Part#	Datasheet
	Normally closed, seat-valve shut-off from 2->1, more reliable operation over the whole pressure and flow range, the slip-on coil can be rotated, and it can be replaced without opening the hydraulic envelope are available.	MVRPSB...	13 c)	50 c)	3600 *)	250 *)	AL 3/4-16 UNF	400...	MVRPSB-G-5 400-P-605101-en
		MVRPSB...	36 c)	140 c)	3600 *)	250 *)	DH M27 x 2	400...	MVRPSB-G-10 400-P-615101-en
		MVRPSB...	66 c)	250 c)	3600 *)	250 *)	ER M33 x 2	400...	MVRPSB-G-16 400-P-616101-en

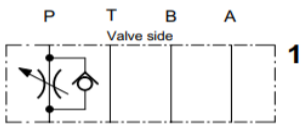
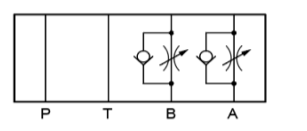
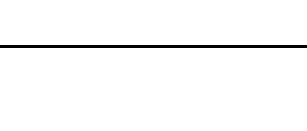

El. Proportional Flow-control Poppet Style

Symbol	Description	Type	Flow Q _{max} [gpm]	Flow Q _{max} [l/min]	Pressure P _{max} [psi]	Pressure P _{max} [bar]	Cavity	Part#	Datasheet
	Normally closed, seat-valve shut-off from 2->1, load-independent flow rate, Reliable operation over the whole pressure and flow range.	MVRPLSA	5.5 c)	22 c)	3600 *)	250 *)	AY M22 x 1,5	400...	MVRPLS-5 400-P-625101-en

Stack Mounting Flow Regulator / Throttle Valve (manual adjuster)

Symbol	Description	Type	Flow Q _{max} [gpm]	Flow Q _{max} [l/min]	Pressure P _{max} [psi]	Pressure P _{max} [bar]	Interface	Part#	Datasheet
	Sliding-spool design, final OPEN/CLOSED positions determined by positive end-stops. The valve throttles or completely stops flow for either direction.	SD...	15 c)	60 c)	4500 *)	315 *)	ISO 4401-03-02	400...	SD-6 400-P-427101-en

Stack Mounting Throttle / Check Valve (manual adjuster)

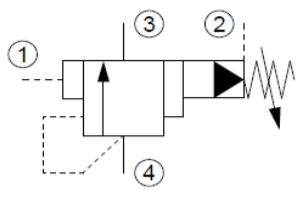
Symbol	Description	Type	Flow Q _{max} [gpm]	Flow Q _{max} [l/min]	Pressure P _{max} [psi]	Pressure P _{max} [bar]	Interface	Part#	Datasheet
	This unit is a throttle check valve, direct acting stack valve, designed on the proven sliding-spool principle. The integral check function allows free flow in one direction and the set, throttled flow in the opposite direction. The setting is made at the self-locking adjusting screw and can be additionally secured with the lock nut. T	SRDA-P...	6.5 c)	25 c)	3600 *)	250 *)	ISO 4401-02-01	400...	SRD-4 400-P-425101-en
		SMDR-6...	21 c)	80 c)	5000 *)	350 *)	ISO 4401-03-02	400...	SRD-6 400-P-430101-en
		SMDR-10...	42 c)	160 c)	5000 *)	350 *)	ISO 4401-05-04	400...	SRD-10 400-P-431101-en
		SRDB-AA...	68 c)	260 c)	5000 *)	350 *)	ISO 4401-07-07	400...	SRD-16 400-P-436101-en

Pressure Valves

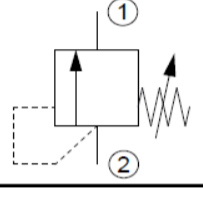
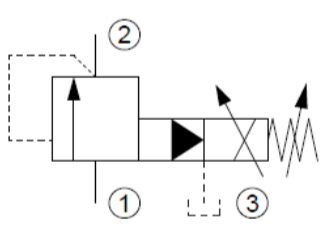
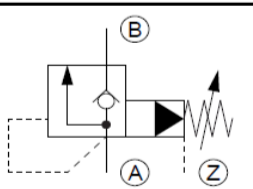
Chapter 4



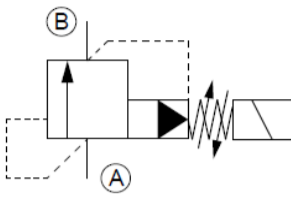
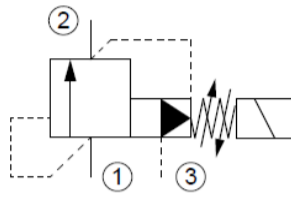
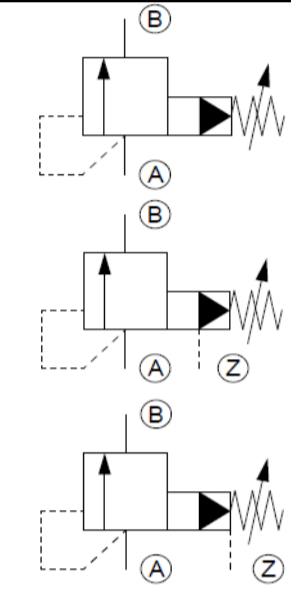
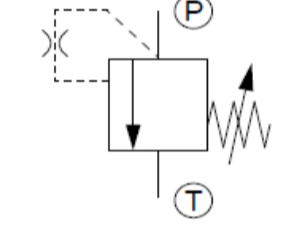
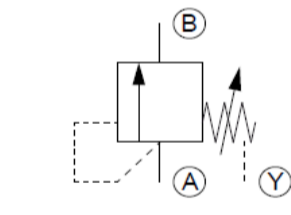
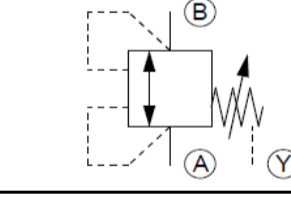
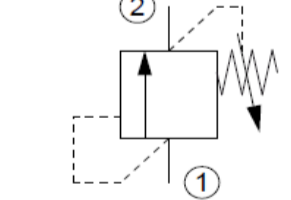
Unloading Valves

Symbol	Description	Type	Flow Q_{max} [gpm]	Flow Q_{max} [l/min]	Pressure P_{max} [psi]	Pressure P_{max} [bar]	Cavity	Part#	Datasheet				
	Two-stage, on-off differential independent of tank line pressure, with manual adjustment, optional soft-switching version, with integral pressure-relief function	DWPB-4N...	7.5	c)	30	c)	3600	*)	250	*)	AN 3/4-16 UNF	400...	DWP-4-4 400-P-379101-en
		DWPA...	15	c)	60	c)	4500	*)	315	*)	DD M24x1.5	400...	DWP-2-10 400-P-380101-en
		DWPBU...	15	c)	60	c)	4500	*)	315	*)	DD M24x1.5	400...	DWP-2-10 400-P-380101-en

Pressure Relief Valves

Symbol	Description	Type	Flow Q_{max} [gpm]	Flow Q_{max} [l/min]	Pressure P_{max} [psi]	Pressure P_{max} [bar]	Cavity	Part#	Datasheet				
	Pilot valve, seated design, direct acting, can be used as a pilot valve, operated by a proportional solenoid	DVSA-1L...	0.35	c)	1.5	c)	6000	*)	420	*)	AL 3/4-16 UNF	400...	DVS-1-1 400-P-580101-en
		DVSA-1LG...	0.35	c)	1.5	c)	6000	*)	420	*)	AL 3/4-16 UNF	400...	DVS-1G-1 400-P-580201-en
	Seated design, direct acting, all exposed parts with zinc-nickel plating, electrically operated	WUVB-1LO...	0.35	c)	1.5	c)	6000	*)	420	*)	AL 3/4-16 UNF	400...	WUV-1-1 400-P-287101-en
		DDPC-1L...	7.5	c)	30	c)	6000	*)	420	*)	AL 3/4-16 UNF	400...	DDP-1-4 400-P-260111-en
	Direct acting, proportional, electrically operated, all exposed parts with zinc-nickel plating	DBDSB-1L...	6	c)	24	c)	3600	*)	250	*)	AL 3/4-16 UNF	400...	DBDS-1-4 400-P-585301-en
		DBDSB-1LG...	6	c)	24	c)	3600	*)	250	*)	AL 3/4-16 UNF	400...	DBDS-1G-4 400-P-585401-en
		DBDRB-1L...	6	c)	24	c)	5000	*)	350	*)	AL 3/4-16 UNF	400...	DBDR-1-4 400-P-585101-en
		DBDRB-1LG...	6	c)	24	c)	5000	*)	350	*)	AL 3/4-16 UNF	400...	DBDR-1G-4 400-P-585201-en
		DBDTC-1L...	6	c)	24	c)	5700	*)	400	*)	AL 3/4-16 UNF	400...	DBDT-1-4 400-P-585111-en
		DBDTC-1LG...	6	c)	24	c)	5700	*)	400	*)	AL 3/4-16 UNF	400...	DBDT-1G-4 400-P-585211-en
	Seated pilot, spool-type main stage, nominal pressure when solenoid de-energised (fail-safe function), optional with damped design	DBVSA-1LG...	15	c)	60	c)	4300	*)	300	*)	AL 3/4-16 UNF	400...	DBVS-1G-5 400-P-586101-en
		DBVSA-1CG...	31	c)	120	c)	4300	*)	300	*)	DC M24x1.5	400...	DBVS-1G-10 400-P-587101-en
		DVPSA-3BG...	92	c)	350	c)	5000	*)	350	*)	EB M42x2	400...	DVPS-3G-16 400-P-581651-en
		DVPSA-3D...	31	c)	120	c)	4500	*)	315	*)	DD M24x1.5	400...	DVPS-3-10 400-P-581401-en
	Poppet pilot stage, spool-type main stage with integral bypass check valve, improved pressure-setting resolution, very stable in operation	DVPA-RV-1...	26	c)	100	c)	5000	*)	350	*)	DC M24x1.5	400...	DVP-RV-1-10 400-P-280131-en
		DVPA-RV-3...	26	c)	100	c)	5000	*)	350	*)	DC M24x1.5	400...	DVP-RV-3-10 400-P-280141-en

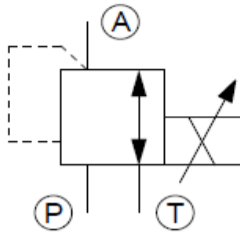
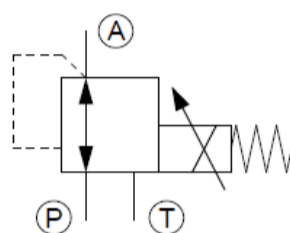
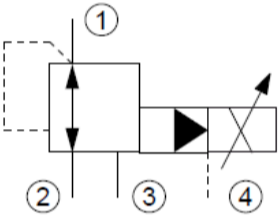
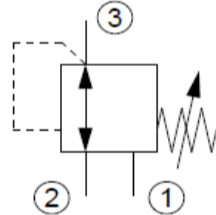
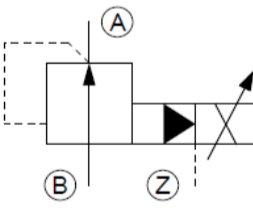
Pressure Relief Valves

Symbol	Description	Type	Flow Q _{max} [gpm]	Flow Q _{max} [l/min]	Pressure P _{max} [psi]	Pressure P _{max} [bar]	Cavity	Part#	Datasheet				
	seated pilot stage, spool-type design, electrically operated, Bypass circuit ON / OFF, damped opening (on request), bypass circuit ON / OFF, 2-pressure switching HI / LO	WUVPO/LC-1...	36	c)	140	c)	5000	*)	350	*)	DC M24x1,5	400...	WUVP-1-10 400-P-290101-en
		WUVPO/LC-2...	36	c)	140	c)	5000	*)	350	*)	DD M24x1,5	400...	WUVP-2-10 400-P-290111-en
		WUVPO/LC-3...	36	c)	140	c)	5000	*)	350	*)	DD M24x1,5	400...	WUVP-3-10 400-P-290121-en
	seated pilot stage, spool-type design, electrically operated, Bypass circuit ON / OFF, damped opening (on request), bypass circuit ON / OFF, 2-pressure switching HI / LO	WUVPA-1...	92	c)	350	c)	6000	*)	420	*)	EB M42x2	400...	WUVP-1-16 400-P-295301-en
		WUVPA-2...	92	c)	350	c)	6000	*)	420	*)	EB M42x2	400...	WUVP-2-16 400-P-295311-en
		WUVPA-3...	92	c)	350	c)	6000	*)	420	*)	EB M42x2	400...	WUVP-3-16 400-P-295321-en
	Poppet pilot stage, spool-type main stage, improved pressure-setting resolution, excellent stability over the whole pressure and flow range, responsive pressure adjustment	DVPA-1...	36	c)	140	c)	5000	*)	350	*)	DC M24x1,5	400...	DVP-1-10 400-P-280101-en
		DVPA-2...	36	c)	140	c)	5000	*)	350	*)	DD M24x1,5	400...	DVP-2-10 400-P-280111-en
		DVPA-3...	36	c)	140	c)	5000	*)	350	*)	DD M24x1,5	400...	DVP-3-10 400-P-280121-en
		DVPB-1...	92	c)	350	c)	6000	*)	420	*)	EB M42x2	400...	DVP-1-16 400-P-285301-en
		DVPB-2...	92	c)	350	c)	6000	*)	420	*)	EB M42x2	400...	DVP-2-16 400-P-285311-en
		DVPB-3...	92	c)	350	c)	6000	*)	420	*)	EB M42x2	400...	DVP-3-16 400-P-285321-en
	UVP: Seated design, direct acting, 6 different nominal pressure ranges available DVP: Seated design, direct acting, low-noise operation thanks to integral damping piston	UVP 4	5	d)	20	d)	7100	*)	500	*)	see Datasheet	300...	UVP-4 300-P-9050065-en
		DVP 20	87	d)	330	d)	6400	*)	450	*)	see Datasheet	300...	DVP-20 300-P-9050068-en
	DDPSVA-1: Leak-proof shut-off, CE type-approved acc. Pressure Equipment Directive 2014/68/EU DDPB...: Direct acting, positive seat design	DDPSVA-1	26	c)	100	c)	4700	*)	330	*)	see Datasheet	400...	DDPSV-1-10 400-P-273101-en
		DDPB-1C...	36	c)	140	c)	6400	*)	450	*)	DC M24x1,5	400...	DDP-1-10 400-P-270101-en
		DDPB-3D...	36	c)	140	c)	6400	*)	450	*)	DD M24x1,5	400...	DDP-3-10 400-P-270201-en
	for cross-line relief function, direct acting, seat valve design	DDPDB-3D...	36	c)	140	c)	6400	*)	450	*)	DD M24x1,5	400...	DDPD-3-10 400-P-271101-en
	This unit is a direct acting, remote control for valves with low pilot flow, cartridge type, steel ball, low leakage, screw in type, adjustable, pressure control valve.	RVPD-08	2	b)	7.5	b)	5000	**)	350	**)	C0820 3/4-16 UNF	520...	RVPD-08 520-P-030110-en
		RVPD-10	2	b)	7.5	b)	5000	**)	350	**)	C1020 7/8-14 UNF	520...	RVPD-10 520-P-030120-en

Pressure Relief Valves

Symbol	Description	Type	Flow Q_{max} [gpm]		Flow Q_{max} [l/min]		Pressure P_{max} [psi]		Pressure P_{max} [bar]		Cavity	Part#	Datasheet
	This unit is a differential area relief valve, cartridge type, direct acting, poppet type, low leakage, screw in type, adjustable, pressure control valve.	RVDA-08	10	b)	37	b)	5000	**)	350	**)	C0820 3/4-16 UNF	520...	RVDA-08_520-P-030210-en
		RVDA-10	20	b)	75	b)	5000	**)	350	**)	C1020 7/8-14 UNF	520...	RVDA-10_520-P-030220-en
	This unit is a pilot operated, balanced sliding spool, pressure relief, cartridge valve for accurate and smooth pressure regulation.	RVPS-08	15	b)	56	b)	5000	**)	350	**)	C0820 3/4-16 UNF	520...	RVPS-08_520-P-030310-en
		RVPS-10	26	b)	98	b)	5000	**)	350	**)	C1020 7/8-14 UNF	520...	RVPS-10_520-P-030320-en
		RVPS-12	60	b)	226	b)	5000	**)	350	**)	C1220 1 1/16-12 UNF	520...	RVPS-12_520-P-030330-en
	This unit is a pilot operated, poppet type, adjustable, hydraulic pressure relief with free reverse flow, screw in cartridge valve.	RVPP-10	26	b)	98	b)	5000	**)	350	**)	C1020 7/8-14 UNF	520...	RVPP-10_520-P-030420-en
		RVPP-12	60	b)	226	b)	5000	**)	350	**)	C1220 1 1/16-12 UNF	520...	RVPP-12_520-P-030430-en
	This unit is a differential area, poppet type, bi-directional, adjustable, hydraulic pressure relief, cartridge valve.	RVBD-08	10	b)	37	b)	5000	**)	350	**)	C0820 3/4-16 UNF	520...	RVBD-08_520-P-030510-en
		RVBD-10	20	b)	75	b)	5000	**)	350	**)	C1020 7/8-14 UNF	520...	RVBD-10_520-P-030520-en
		RVBD-12	40	b)	150	b)	5000	**)	350	**)	C1220 1 1/16-12 UNF	520...	RVBD-12_520-P-030530-en
	This unit is a direct acting relief valve, cartridge type, poppet type, low leakage, screw-in type, adjustable, pressure control valve	RVDI-08	6	b)	22	b)	5000	**)	350	**)	C0820 3/4-16 UNF	520...	RVDI-08_520-P-030610-en
		RVDI-10	10	b)	37	b)	5000	**)	350	**)	C1020 7/8-14 UNF	520...	RVDI-10_520-P-030620-en
	This unit is a pilot operated, sliding spool, pressure breaker relief valve, cartridge style, screw in type valve	RVBS-10	25	b)	94	b)	5000	**)	350	**)	C1020 7/8-14 UNF	520...	RVBS-10_520-P-030720-en
	This unit is a direct acting, screw in cartridge style, hydraulic 3-way, 2 position, unloading relief valve which can be dumped or unloaded via a remote pilot signal	PUVA-10	1	b)	3.7	b)	5000	**)	350	**)	C1030 7/8-14 UNF	520...	PUVA-10_520-P-030820-en
	This unit is a normally open, two position, cartridge type, spool type, pilot operated, screw in type, solenoid actuated, hydraulic relief valve	ESRV-10	26	b)	98	b)	5000	**)	350	**)	C1020 7/8-14 UNF	520...	ESRV-10_520-P-030920-en
	This unit is a differential area relief valve, cartridge type, direct acting, poppet type, low leakage, screw in type, adjustable, pressure control valve	CPRV-10	20	b)	75	b)	5000	**)	350	**)	C1020 7/8-14 UNF	520...	CPRV-10_520-P-031020-en

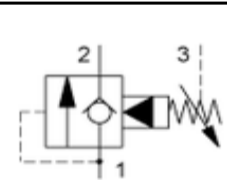
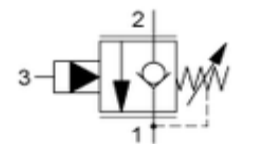
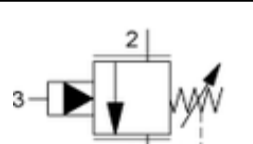
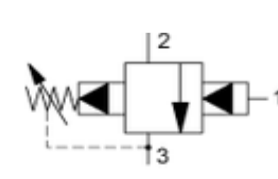
Pressure Reducing Valves

Symbol	Description	Type	Flow Q _{max} [gpm]	Flow Q _{max} [l/min]	Pressure P _{max} [psi]	Pressure P _{max} [bar]	Cavity	Part#	Datasheet				
		DDRRZ-7080...	2.5	c)	10	c)	3000	*)	210	*)	AGS push-in	400...	DDRR-7080-7110-4 400-P-590111-en
		DRDRA-7GG...	3	c)	12	c)	1400	*)	100	*)	AG push-in	400...	DRDR-7-4 400-P-590151-en
		DRDCA-7...	3	c)	12	c)	1000	*)	70	*)	AGA push-in	400...	DRDC-7-4 400-P-590801-en
	<p>electrically operated, All exposed parts with zinc-nickel plating, operated by a proportional solenoid, excellent stability over the whole pressure and flow range, models for various inlet pressure, various plug-connector systems and voltages are available</p>	DRDTA-7MQ...	3.75	c)	15	c)	3600	*)	250	*)	AM 3/4-16 UNF	400...	DRDT-7Q 400-P-591061-en
		DRDTA-7M...	6.5	c)	25	c)	3600	*)	250	*)	AM 3/4-16 UNF	400...	DRDTA-7M 400-P-591065-en
		DDRCZ-7011...	3.75	c)	15	c)	1000	*)	70	*)	AGA push-in	400...	DDRC-7011-7055-5 400-P-590501-en
		DDRRZ-7011...	3.75	c)	15	c)	1400	*)	100	*)	AG push-in	400...	DDRR-7011-7055-5 400-P-590101-en
		DRDSA-7M	3.75	c)	15	c)	3600	*)	250	*)	AM 3/4-16 UNF	400...	DRDS-7 400-P-591051-en
		DDRRY-7020...	5	c)	20	c)	3000	*)	210	*)	AG push-in	400...	DDRR-7020-7100-4 400-P-590121-en
		EPRT-08	7	b)	26	b)	3400	**)	240	**)	C0830 3/4-16 UNF	520...	EPRT-08 520-P-110260-en
		DRVSA-7P...	31	c)	120	c)	5000	*)	350	*)	DP M27x2	400...	DRVS-7-10 400-P-591101-en
		DDRB-7M-2...	2.5	c)	10	c)	3600	*)	250	*)	AM 3/4-16 UNF	400...	DDR-7-2 400-P-260501-en
		DDRB-7M-4...	5	c)	20	c)	3600	*)	250	*)	AM 3/4-16 UNF	400...	DDR-7-4 400-P-260501-en
	<p>Spool-type design, 5 pressure ranges available, full-flow secondary pressure relief, excellent stability over the whole pressure and flow range</p>	DDRA-7L...	18	c)	70	c)	4500	*)	315	*)	DL M27x2	400...	DDR-7-10 400-P-260701-en
		DRPSA-5D...	31	c)	120	c)	4500	*)	315	*)	DD M24x1,5	400...	DRPS-5-10 400-P-581501-en
	<p>Seated pilot, spool-type main stage, operated by a proportional solenoid, external pilot-oil drain, excellent stability over the whole pressure and flow range</p>	DRPSA-5DG...	31	c)	120	c)	4300	*)	300	*)	DD M24x1,5	400...	DRPS-5G 400-P-581551-en
		DRPSB-5B...	66	c)	250	c)	5000	*)	350	*)	EB M42x2	400...	DRPS-5-16 400-P-581701-en

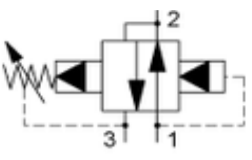
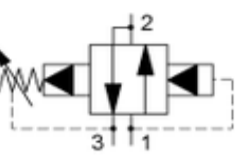
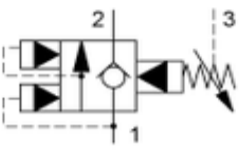
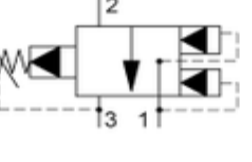
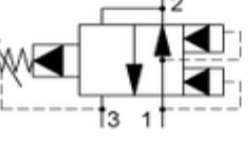
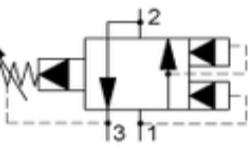
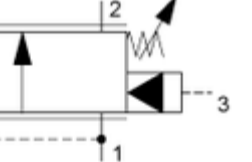
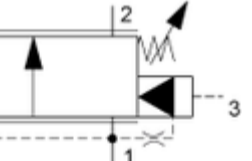
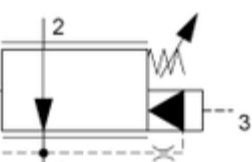
Pressure Reducing Valves

Symbol	Description	Type	Flow Q _{max} [gpm]	Flow Q _{max} [l/min]	Pressure P _{max} [psi]	Pressure P _{max} [bar]	Cavity	Part#	Datasheet				
	<p>Excellent stability over the whole pressure and flow range, Responsive pressure adjustment, with external pilot-oil drain Z</p>	DDRA...	10	c)	40	c)	4500	*)	315	*)	AL 3/4-16 UNF	400...	DDR-5-5 400-P-260301-en
		DRPA-5...	31	c)	120	c)	5000	*)	350	*)	DD M24x1,5	400...	DRP-5-10 400-P-280201-en
		WDRVPC-5...	36	c)	140	c)	5000	*)	350	*)	DD M24x1,5	400...	WDRVP-5-10 400-P-290501-en
		DRPB-5...	66	c)	250	c)	5000	*)	350	*)	EB M42x2	400...	DRP-5-16 400-P-285401-en
		WDRVPA-5...	66	c)	250	c)	5000	*)	350	*)	EB M42x2	400...	WDRVP-5-16 400-P-295401-en
	This unit is a pilot operated, sliding spool, screw in cartridge style, hydraulic pressure reducing valve, designated to act as a pressure-regulating device for secondary circuit.	PRPS-10	12	b)	45	b)	5000	**)	350	**)	C1030 7/8-14 UNF	520...	PRPS-10 520-P-050120-en
	This unit is a pilot operated, sliding spool, screw in cartridge style, hydraulic pressure reducing/relieving valve, designated to act as a pressure-regulating device for secondary circuit.	PRRS-08	6	b)	22	b)	5000	**)	350	**)	C0830 3/4-16 UNF	520...	PRRS-08 520-P-050210-en
		PRRS-10	12	b)	45	b)	5000	**)	350	**)	C1030 7/8-14 UNF	520...	PRRS-10 520-P-050220-en
		PRRS-12	24	b)	90	b)	5000	**)	350	**)	C1230 1 1/16-12 UNF	520...	PRRS-12 520-P-050230-en

Pressure Sequence Valves

Symbol	Description	Type	Flow Q _{max} [gpm]	Flow Q _{max} [l/min]	Pressure P _{max} [psi]	Pressure P _{max} [bar]	Cavity	Part#	Datasheet				
	This unit is a pilot operated, screw in cartridge style, poppet type with built in free reverse flow check, hydraulic pressure sequence valve.	PSVP-10	20	b)	75	b)	5000	**)	350	**)	C1025 7/8-14 UNF	520...	PSVP-10 520-P-060720-en
	This unit is a direct acting, screw in cartridge style, poppet type, adjustable, soft shift (shock free), hydraulic hi-lo pressure sequence valve.	HLSV-10	20	b)	75	b)	5000	**)	350	**)	C1025 7/8-14 UNF	520...	HLSV-10 520-P-060220-en
	This unit is a direct acting, screw in cartridge style, spool type, adjustable, soft shift (shock free), hydraulic hi-lo pressure sequence valve.	HLSS-10	20	b)	75	b)	5000	**)	350	**)	C1025 7/8-14 UNF	520...	HLSS-10 520-P-060120-en
	This unit is a pilot operated, screw in cartridge style, sliding spool type, adjustable, external pilot, hydraulic pressure sequence valve.	PSXS-08	6	b)	22	b)	5000	**)	350	**)	C0830 3/4-16 UNF	520...	PSXS-08 520-P-060310-en
		PSXS-10	12	b)	45	b)	5000	**)	350	**)	C1030 7/8-14 UNF	520...	PSXS-10 520-P-060320-en

Pressure Sequence Valves

Symbol	Description	Type	Flow Q_{max} [gpm]		Flow Q_{max} [l/min]		Pressure P_{max} [psi]		Pressure P_{max} [bar]		Cavity	Part#	Datasheet
	This unit is a pilot operated, screw in cartridge style, sliding spool type, adjustable, internal pilot, hydraulic pressure sequence valve.	PSOS-08	6	b)	22	b)	5000	**)	350	**)	C0830 3/4-16 UNF	520...	PSOS-08 520-P-060410-en
		PSOS-10	12	b)	45	b)	5000	**)	350	**)	C1030 7/8-14 UNF	520...	PSOS-10 520-P-060420-en
	This unit is a pilot operated, screw in cartridge style, sliding spool type, adjustable, internal pilot, hydraulic pressure sequence valve.	PSCS-08	6	b)	22	b)	5000	**)	350	**)	C0830 3/4-16 UNF	520...	PSCS-08 520-P-060510-en
		PSCS-10	12	b)	45	b)	5000	**)	350	**)	C1030 7/8-14 UNF	520...	PSCS-10 520-P-060520-en
	This unit is a pilot operated, screw in cartridge style, poppet type with built in free reverse flow check, hydraulic pressure breaker/sequence valve.	PBVP-10	20	b)	75	b)	5000	**)	350	**)	C1025 7/8-14 UNF	520...	PBVP-10 520-P-061120-en
	This unit is a pilot operated, screw in cartridge style, sliding spool type, adjustable, external pilot, hydraulic pressure breaker/sequence valve.	BSXS-08	6	b)	22	b)	5000	**)	350	**)	C0830 3/4-16 UNF	520...	BSXS-08 520-P-061310-en
		BSXS-10	12	b)	45	b)	5000	**)	350	**)	C1030 7/8-14 UNF	520...	BSXS-10 520-P-061320-en
	This unit is a pilot operated, screw in cartridge style, sliding spool type, adjustable, internal pilot, hydraulic pressure breaker/sequence valve.	BSOS-08	6	b)	22	b)	5000	**)	350	**)	C0830 3/4-16 UNF	520...	BSOS-08 520-P-061410-en
		BSOS-10	12	b)	45	b)	5000	**)	350	**)	C1030 7/8-14 UNF	520...	BSOS-10 520-P-061420-en
	This unit is a pilot operated, screw in cartridge style, sliding spool type, adjustable, internal pilot, hydraulic pressure breaker/sequence valve.	BSCS-08	6	b)	22	b)	5000	**)	350	**)	C0830 3/4-16 UNF	520...	BSCS-08 520-P-061510-en
		BSCS-10	12	b)	45	b)	5000	**)	350	**)	C1030 7/8-14 UNF	520...	BSCS-10 520-P-061520-en
	This unit is a direct acting, screw in cartridge style, spool type, hydraulic directional logic element, with multi-functional potential when used with other directional, pressure or flow control devices.	LCEF-08-A	10	b)	37	b)	5000	**)	350	**)	C0825 3/4-16 UNF	520...	LCEF-08-A 520-P-070110-en
		LCEF-10-A	20	b)	75	b)	5000	**)	350	**)	C1025 7/8-14 UNF	520...	LCEF-10-A 520-P-070120-en
		LCEF-12-A	36	b)	135	b)	5000	**)	350	**)	C1225 1 1/16-12 UN	520...	LCEF-12-A 520-P-070130-en
	This unit is a direct acting, screw in cartridge style, spool type, hydraulic directional logic element, with multi-functional potential when used with other directional, pressure or flow control devices.	LCEF-08-C	10	b)	37	b)	5000	**)	350	**)	C0825 3/4-16 UNF	520...	LCEF-08-C 520-P-070310-en
		LCEF-10-C	20	b)	75	b)	5000	**)	350	**)	C1025 7/8-14 UNF	520...	LCEF-10-C 520-P-070320-en
		LCEF-12-C	36	b)	135	b)	5000	**)	350	**)	C1225 1 1/16-12 UN	520...	LCEF-12-C 520-P-070330-en
	This unit is a direct acting, screw in cartridge style, spool type, hydraulic directional logic element, with multi-functional potential when used with other directional, pressure or flow control devices.	LCEF-08-D	10	b)	37	b)	5000	**)	350	**)	C0825 3/4-16 UNF	520...	LCEF-08-D 520-P-070410-en
		LCEF-10-D	20	b)	75	b)	5000	**)	350	**)	C1025 7/8-14 UNF	520...	LCEF-10-D 520-P-070420-en
		LCEF-12-D	36	b)	135	b)	5000	**)	350	**)	C1225 1 1/16-12 UN	520...	LCEF-12-D 520-P-070430-en

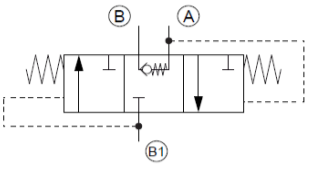
Pressure Sequence Valves

Symbol	Description	Type	Flow Q _{max} [gpm]	Flow Q _{max} [l/min]	Pressure P _{max} [psi]	Pressure P _{max} [bar]	Cavity	Part#	Datasheet		
	<p>This unit is a direct acting, screw in cartridge style, spool type, hydraulic directional logic element, with multi-functional potential when used with other directional, pressure or flow control devices.</p>	LCEF-08-F	10	b)	37	b)	5000 **)	350 **)	C0825 3/4-16 UNF	520...	LCEF-08-F_520-P-070610-en
		LCEF-10-F	20	b)	75	b)	5000 **)	350 **)	C1025 7/8-14 UNF	520...	LCEF-10-F_520-P-070620-en
		LCEF-12-F	36	b)	135	b)	5000 **)	350 **)	C1225 1 1/16-12 UN	520...	LCEF-12-F_520-P-070630-en

Pressure Compensators / Logic Elements

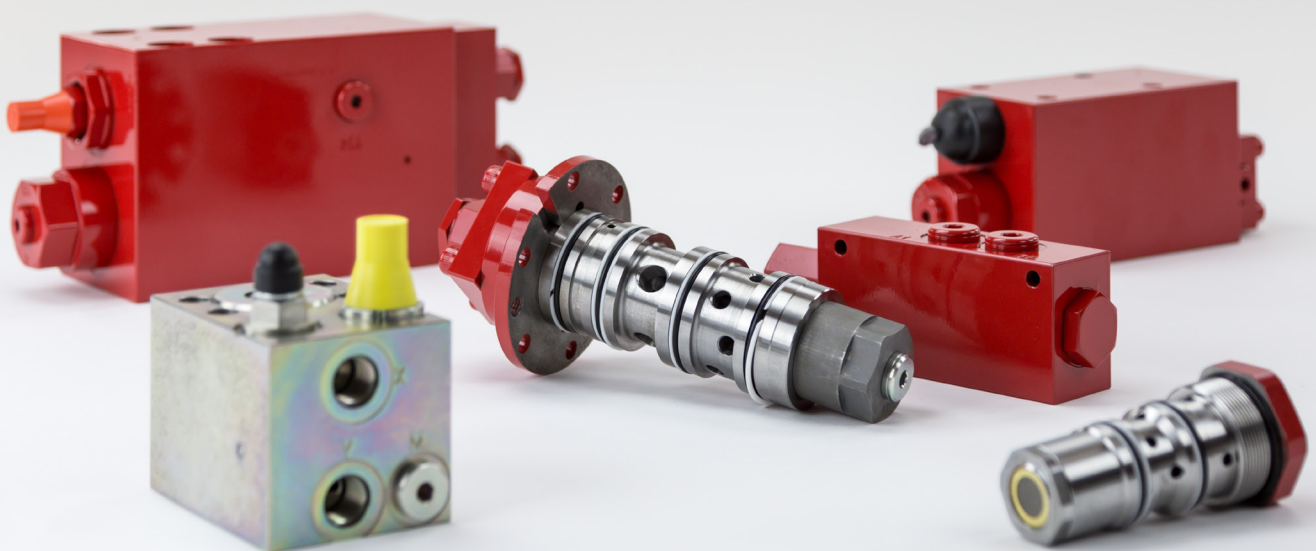
Symbol	Description	Type	Flow Q _{max} [gpm]	Flow Q _{max} [l/min]	Pressure P _{max} [psi]	Pressure P _{max} [bar]	Cavity	Part#	Datasheet		
	<p>Adjustable compensator spring: from 5...15 bar, External remote-control port Z with integral damping orifice, high flow rates</p>	DWDPB-5D...	21	c)	80	c)	5000 *)	350 *)	DD M24x1,5	400...	DWDP-5-10_400-P-330501-en
		DWDPA-5B...	66	c)	250	c)	6000 *)	420 *)	EB M42x2	400...	DWDP-5-16_400-P-330801-en
	<p>Compensator spring adjustable or fixed, excellent stability over the whole pressure and flow range</p>	DWDPB-2D...	36	c)	140	c)	5000 *)	350 *)	DD M24x1,5	400...	DWDP-2-10_400-P-330101-en
		DWDPA-2B...	92	c)	350	c)	6000 *)	420 *)	EB M42x2	400...	DWDP-2-16_400-P-330701-en
	<p>Integral pressure relief function, fixed compensator setting external remote-control port 3 with integral damping orifice</p>	DWVPA / Z-2...	36	c)	140	c)	4500 *)	315 *)	DD M24x1,5	400...	DWVP-2-10_400-P-330201-en
		DWVPA / Y / Z-2B...	92	c)	350	c)	6000 *)	420 *)	EB M42x2	400...	DWVP-2-16_400-P-330711-en
	<p>Electrically controlled, Integral pressure-relief function is available in 3 different pressure ranges, with internal pilot-oil drain to port B</p>	WDWVPB / Z-2...	36	c)	140	c)	5000 *)	350 *)	DD M24x1,5	400...	WDWVP-2-10_400-P-331101-en
	<p>This unit is a direct acting, screw in cartridge style, spool type, pressure-compensating inline flow element, intended for use with a remote fixed or variable orifice to yield a two-port (inline-type), pressure-compensated, flow regulating hydraulic valve.</p>	PCEI-08	6	b)	22	b)	5000 **)	350 **)	C0830 3/4-16 UNF	520...	PCEI-08_520-P-071110-en
		PCEI-10	10	b)	37	b)	5000 **)	350 **)	C1030 7/8-14 UNF	520...	PCEI-10_520-P-071120-en
		PCEI-12	24	b)	90.0	b)	5000 **)	350 **)	C1230 1 1/16-12 UN	520...	PCEI-12_520-P-071130-en
		PCEI-16	36	b)	135	b)	5000 **)	350 **)	C1630 1 5/16-12 UN	520...	PCEI-16_520-P-071140-en
	<p>This unit is a direct acting, screw in cartridge style, spool type, pressure-compensating priority type flow element, intended for use with a remote fixed or variable orifice to yield a three-port (bypass-type), pressure-compensated, flow regulating hydraulic valve.</p>	PCEB-08	8	b)	30	b)	5000 **)	350 **)	C0840 3/4-16 UNF	520...	PCEB-08_520-P-071510-en
		PCEB-10	18	b)	68	b)	5000 **)	350 **)	C1040 7/8-14 UNF	520...	PCEB-10_520-P-071520-en
		PCEB-12	32	b)	120	b)	5000 **)	350 **)	C1240 1 1/16-12 UN	520...	PCEB-12_520-P-071530-en
		PCEB-16	36	b)	135	b)	5000 **)	350 **)	C1640 1 5/16-12 UN	520...	PCEB-16_520-P-071540-en

Rapid Traverse Pressure-Control Cartridge

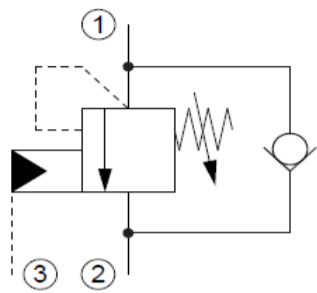
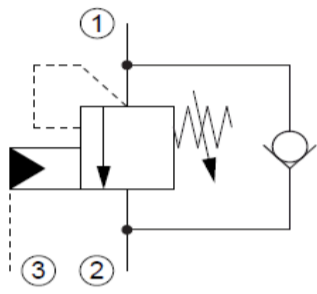
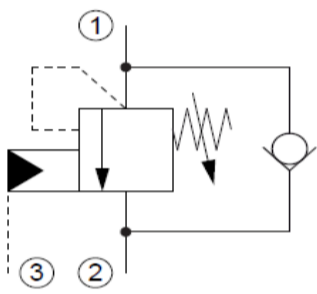
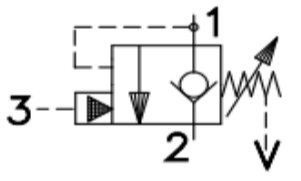
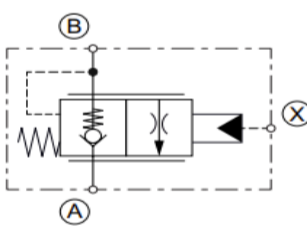
Symbol	Description	Type	Flow Q_{max} [gpm]	Flow Q_{max} [l/min]	Pressure P_{max} [psi]	Pressure P_{max} [bar]	Cavity	Part#	Datasheet
	<p>Compact cartridge valve for creating regenerative circuits right at the cylinder, switching and functionality both highly reliable, no external signal required - switches automatically, hold at standstill, rapid traverse, work speed, and return stroke -> 4 functions in one cartridge.</p>	EGP 20-G...	66	d) 250	d) 5000	*) 350	*)	see Datasheet	300... EGP-20_300-P-9050096-en

Safety Valves

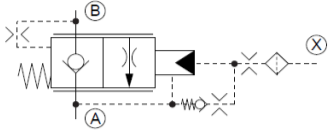
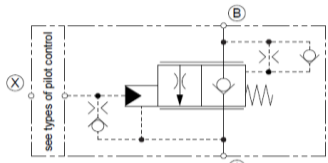
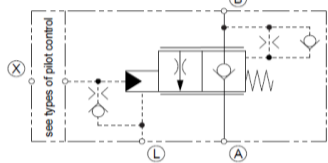

Chapter 5



Counter Balance Valves

Symbol	Description	Type	Flow Q _{max} [gpm]	Flow Q _{max} [l/min]	Pressure P _{max} [psi]	Pressure P _{max} [bar]	Cavity	Part#	Datasheet		
	<p>This unit is a direct acting, screw in cartridge style, poppet type, adjustable, pilot assisted, hydraulic counterbalance valve with free reverse and spring-chamber connected to tank.</p>	CBPA-08	10	b)	37	b)	5000 **)	350 **)	C0825 3/4-16 UNF	520...	CBPA-08_520-P-080510-en
		CBPA-10	20	b)	75	b)	5000 **)	350 **)	C1025 7/8-14 UNF	520...	CBPA-10_520-P-080520-en
		CBPA-12	35	b)	130	b)	4000 **)	280 **)	C1225 1 1/16-12 UN	520...	CBPA-12_520-P-080530-en
		CBPA-20M	20	b)	75	b)	5000 **)	350 **)	SUN # T-11A	520...	CBPA-20M_520-P-081120-en
	<p>This unit is a direct acting, screw in cartridge style, poppet type, adjustable, pilot assisted, hydraulic counterbalance valve with free reverse, hydraulic dampening and spring-chamber connected to tank.</p>	CBPP-10	15	b)	56	b)	5000 **)	350 **)	C1025 7/8-14 UNF	520...	CBPP-10_520-P-081520-en
		CBPP-20M	15	b)	56	b)	5000 **)	350 **)	SUN # T-11A	520...	CBPP-10_520-P-081520-en
	<p>This unit is a direct acting, screw in cartridge style, poppet type, adjustable, pilot assisted, hydraulic counterbalance valve with free reverse, sealed pilot port and spring-chamber connected to tank.</p>	CBPS-08	10	b)	37	b)	5000 **)	350 **)	C0825 3/4-16 UNF	520...	CBPS-08_520-P-080710-en
		CBPS-10	20	b)	75	b)	5000 **)	350 **)	C1025 7/8-14 UNF	520...	CBPS-10_520-P-080720-en
		CBPS-12	35	b)	130	b)	4000 **)	280 **)	C1225 1 1/16-12 UN	520...	CBPS-12_520-P-080730-en
		CBPS-T-11A	20	b)	75	b)	5000 **)	350 **)	SUN # T-11A	520...	CBPS-20M_520-P-081220-en
	<p>This unit is a direct acting, screw in cartridge style, poppet type, adjustable, pilot assisted, hydraulic counterbalance valve with free reverse and vented spring chamber.</p>	CBPG-08	10	b)	37	b)	5000 **)	350 **)	C0825 3/4-16 UNF	520...	CBPG-08_520-P-080910-en
		CBPG-10	20	b)	75	b)	5000 **)	350 **)	C1025 7/8-14 UNF	520...	CBPG-10_520-P-080920-en
		CBPG-12	35	b)	130	b)	4000 **)	280 **)	C1225 1 1/16-12 UN	520...	CBPG-12_520-P-080930-en
		CBPG-T-11A	20	b)	75	b)	5000 **)	350 **)	SUN # T-11A	520...	CBPG-20M_520-P-081320-en
	<p>The proportional, pilot operated check valves are pilot controlled, high performance screw-in cartridges. For the lifting function (A → B) only the pretension force of the check valve has to be overcome.</p>	ERV 08-PH	13	b)	50	b)	6400 **)	450 **)	see Datasheet	300...	ERV-8-PH_300-P-9050115-en

Load Control Valves

Symbol	Description	Type	Flow Q _{max} [gpm]	Flow Q _{max} [l/min]	Pressure P _{max} [psi]	Pressure P _{max} [bar]	Cavity	Part#	Datasheet	
	prevents a hydraulic cylinder from running ahead of the available oil supply when subjected to external driving forces i.e. negative, or over-running, loads.	BBV 6 C	13	d)	50	d)	6000 *)	420 *)	see Datasheet	300... BBV-6-C 300-P-9050008-en
	Two-stage load-control valve and bypass check valve are functionally combined in one coaxial valve assembly, leak-free load holding, Pilot ratio 1:113, guaranteed closing force for the load-control assembly → reliable shut-off even with a broken spring, various pilot-pressure ranges can be chosen, various types of pilot control are available, low-noise operation thanks to specially shaped control grooves.	CINDY 20-C	92	d)	350	d)	6000 *)	420 *)	see Datasheet	300... CINDY-20-C 300-P-9050110-en
		CINDY 25-C	130	d)	500	d)	6000 *)	420 *)	see Datasheet	300... CINDY-25-C 300-P-9050111-en
		CINDY 40-C	345	d)	1300	d)	5000 *)	350 *)	see Datasheet	300... CINDY-40-C 300-P-9050099-en

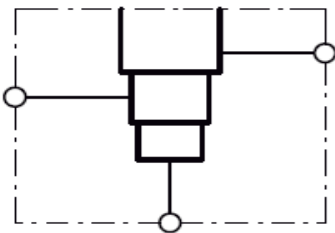
Threaded Port Bodies

Chapter 6



Threaded Port Bodies

Symbol	Description	Type	Pressure P _{max} [bar]	Threaded connection	Cavity type	Datasheet
		GAAA	210	G 1/4"	AG push-in	GAAA_400-P-712101-en
		GAAZ	210	G 1/4"	AGS push-in	GAAZ_400-P-712105-en
		GABA	315	G 3/8"	AB push-in	GABA_400-P-730111-en
		GADA	315	G 3/8"	AD push-in	GADA_400-P-730121-en
		GALA	420	G 3/8"	AL	GALA_400-P-720101-en
		GALMA	350	G 3/8"	ALM	GALMA_400-P-720105-en
		GAMA	420	G 3/8"	AM	GAMA_400-P-720111-en
		GANA	420	G 3/8"	AN	GANA_400-P-720121-en
		GAYA	250	G 3/8"	AY	GAYA_400-P-720231-en
		GBH-38	420	G 3/8"	BH/C0820	GBH-38_400-P-738571-en
		DC-12	450	G 1/2"	DC	DC-12_400-P-740101-en
		DD-12	450	G 1/2"	DD	DD-10_400-P-740111-en
		DDY-12	450	G 1/2"	DD	DDY-10_400-P-740112-en
		GCPA	350	G 1/2"	DP	GCPA_400-P-740171-en
		GCPAA	350	G 1/2"	DP	GCPAA_400-P-740172-en
		RC-12	350	G 1/2"	RC	RC-12_400-P-740201-en
		GCRA	350	G 1/2"	RCY	GCRA_400-P-740211-en
		GAX-12	420	G 1/2"	AX/C1020	GAX-12_400-P-738101-en
		GAU-12	420	G 1/2"	AU/C1030	GAU-12_400-P-738121-en
		GAT-12	420	G 1/2"	AT/C1040	GAT-12_400-P-738131-en
		GBG-12	420	G 1/2"	BG	GBG-12_400-P-738561-en
		GCLA	315	G 3/4"	DL	GCLA_400-P-740121-en
		GCLAA	351	G 3/4"	DL	GCLAA_400-P-740122-en
		GADJA	420	G 3/4"	DJ	GADJA_400-P-740131-en
		GCDHA	350	G 3/4"	DH	GCDHA_400-P-740161-en
		GCUA	210	G 3/4"	DU	GCUA_400-P-740251-en
		GERA	420	G 3/4"	ER	GERA_400-P-750121-en
		GHA-34	420	G 3/4"	HA/C1220	GHA-34_400-P-740501-en
		GHF-34	420	G 3/4"	HF/C1220A	GHF-34_400-P-740551-en
		GCBA	350	G 1"	DN	GCBA_400-P-740141-en
		GEBA	420	G 1"	EB	GEBA_400-P-750115-en
		GEFA	350	G 1"	EF	GEFA_400-P-750131-en
		GEUA	210	G 1"	KTU	GEUA_400-P-750151-en
		GEAA	350	G 1"	ECY	GEAA_400-P-750201-en
		GLA-11	420	G 1"	LA/C1620	GLA-11_400-P-742101-en



Functionless threaded port body.
All external parts with zinc-nickel coating. Optimized Δp values.
Suitable for piping assembly

Further Informations

Chapter 7



Informations for the notes

Flow:

- a) The flow rating of this valve is at 7 bar pressure drop and 35 cSt viscosity
- b) The flow rating of this valve is at 7 bar pressure drop and 28.5 cSt viscosity and may be determined according "NFPA 3.5.14".
- c) The flow rating of this valve is at 10 bar pressure drop and 33 cSt viscosity.
- d) The flow rating of this valve is at 33 bar pressure drop and 33 cSt viscosity.

Pressure:

- *) The operating pressure rating of this valve shall be the same as the working pressure.
- ***) The operating pressure rating of this valve is according "NFPA 2.6.1" and therefore the recommended working pressure is 30% lower.