

5/2 directional control valves

Nominal sizes 6–22
Solenoid pilot operated
Port size G 1/4 to G 1
Operating pressure 2 to 16 bar



Sales range Pneumatics
P 413 EI-WFM/EI-SFM
Series 25500

Publication 7501056.06.10.85

**OBSOLETE
DOCUMENT**
Technical
Reference
Only

Description

Solenoid valves for filtered, lubricated¹⁾ or dry air

Flow direction determined

Standard manual override

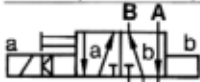
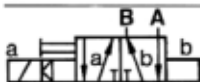
Temperature range –10 to +60 °C

Features

- Interface to DIN 24341 Form AZ
- High flow rate
- Easily interchangeable solenoid system
- Flanged valves for battery assembly
- Modular design
- External pressure supply possible
- Standard manual override
- External control possible



Parameters/Valves with rest position

Nom. size	Port size	Operating pressure [bar]		K _v -value (c _v (US) ≈ K _v × 1.2)	Switching time approx. (ms)	Engineering version	Weight [kg]	Dimensional drawing No.	Cat. No. unit with subplate	Cat. No. unit without subplate	Weight [kg]	Dimensional drawing No.
		min.	max.									
												
P 413 EI-WFM												
6	G 1/4	2	16	1,2	25	W	1,0	01	2550608.0201	2555608.0201	0,8	01
12	G 1/2	2	16	2,8	35	W	1,6	01	2551108.0201	2556108.0201	1,2	01
18	G 3/4	2	16	5,0	45	W	2,8	01	2551608.0201	2556608.0201	1,8	01
												
P 413 EI-SFM												
6	G 1/4	2	16	0,95	25	S	1,0	01	2550605.0201	2555605.0201	0,8	01
12	G 1/2	2	16	2,2	35	S	1,6	01	2551105.0201	2556105.0201	1,2	01
18	G 3/4	2	16	3,8	45	S	2,8	01	2551605.0201	2556605.0201	1,8	01
22	G 1	2	16	7,5	60	S	4,1	02	2552101.0201	—	—	02

¹⁾ For engineering version W (spool with pressure energized soft seals)

S = Seat valve W = Spool with pressure energized soft seal

Solenoids

Standard voltages	DC	AC		Other voltages available on request
		50 Hz	60 Hz	
		220 V	220 V	
		110 V	115 V	
		42 V	—	
	24 V	24 V	—	

Current draw

Solenoid DC		Solenoid AC		Holding
		Inrush		
0201	12 W	0201	22 VA	15 VA

Design to VDE 0580

100 % duty cycle

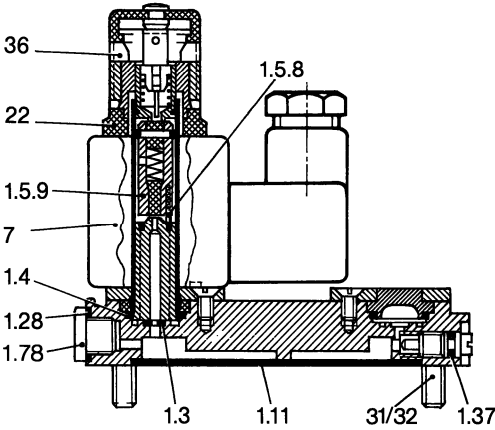
Thread symbol G to ISO 228/1 replaces former symbol R to DIN 259.

The valves are suitable for dry operation. Shell Hydrol DO 32, Shell Voltol 46, Esso Febis K 32 or lubricants of similar quality are recommended for the system lubrication.

Protection to DIN 40050 IP 65

Connector to DIN 43650

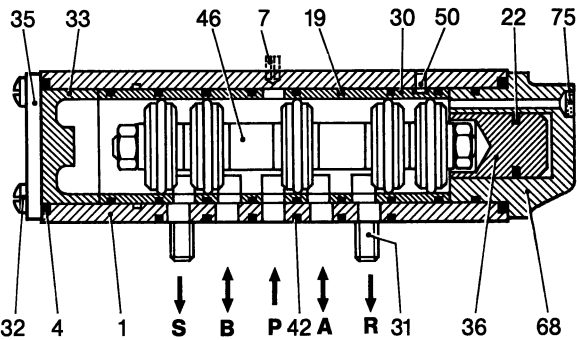
Sectional drawings



Component No. **8080731.0201**

- 1.3 O-ring
- 1.4 O-ring
- 1.5.8 Spring assly.
- 1.5.9 Plunger
- 1.11 Gasket
- 1.28 Gasket
- 1.37 O-ring
- 1.78 Screw plug
- 7 Solenoid
- 22 Disk
- 31 Screw (nominal sizes 12/18)
- 32 Screw (nominal size 6)
- 36 Manual override

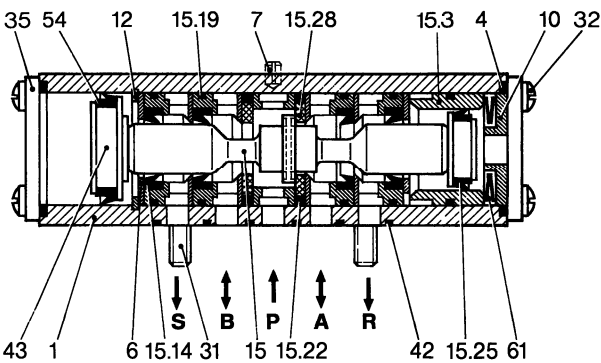
Engineering design: Soft seal spool valve



Nominal size	Part. No.
6	2580123
12	2581123
18	2581323

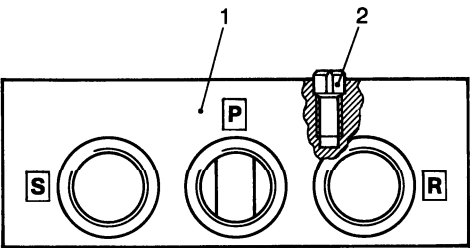
- 1 Body
- 4 O-ring
- 7 Safety pin
- 19 O-ring
- 22 Gasket
- 30 Tube
- 31 Screw (nominal sizes 12/18)
- 32 Screw
- 33 Disk
- 35 Plate
- 36 Bolt
- 42 Gasket
- 46 Piston assly.
- 50 Pin
- 68 Flange
- 75 Disk

Engineering design: Poppet valve



Nominal size	Part. No.
6	2580120
12	2581120
18	2581320

- 1 Body
- 4 O-ring
- 6 Disk
- 7 Safety pin
- 10 Disk
- 12 Snap ring
- 15 Valve assly.
- 15.3 Bushing
- 15.14 Lip-ring
- 15.19 O-ring
- 15.22 O-ring
- 15.25 Lip-ring
- 15.28 Gasket
- 31 Screw (nominal sizes 12/18)
- 32 Screw
- 35 Plate
- 42 Gasket
- 43 Piston
- 54 Lip-ring
- 61 Plate spring



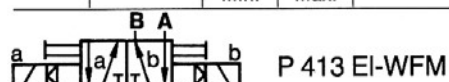
Nominal size	Part. No.
6	2558100
12	2558200
18	2558300

- 1 Plate
- 2 Safety pin



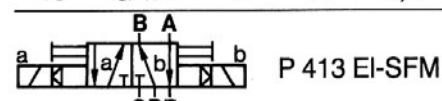
Parameters/Double solenoid valves

Nom. size	Port size	Operating pressure [bar]		k_v -value (C_v (US) $\approx$ $k_v \times 1.2$)	Switching time approx. [ms]	Engineering version	Weight [kg]	Dimensional drawing No.	Cat. No. unit with subplate	Cat. No. unit without subplate	Weight [kg]	Dimensional drawing No.
		min.	max.									



P 413 EI-WFM

6	G 1/4	2	16	1,2	20	W	1,1	01	2550708.0201	2555708.0201	0,9	01
12	G 1/2	2	16	2,8	30	W	1,7	01	2551208.0201	2556208.0201	1,3	01
18	G 3/4	2	16	5,0	40	W	2,9	01	2551708.0201	2556708.0201	1,9	01

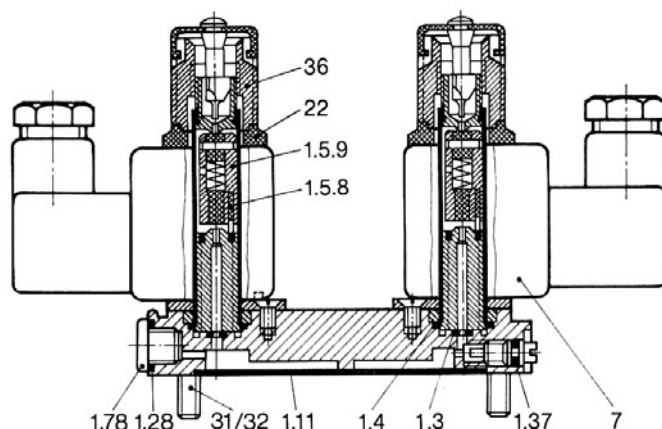


P 413 EI-SFM

6	G 1/4	2	16	0,95	20	S	1,1	01	2550705.0201	2555705.0201	0,9	01
12	G 1/2	2	16	2,2	30	S	1,7	01	2551205.0201	2556205.0201	1,3	01
18	G 3/4	2	16	3,8	40	S	2,9	01	2551705.0201	2556705.0201	1,9	01
22	G 1	2	16	7,5	50	S	4,2	02	2552201.0201	—	—	02

S = Seat valve W = Spool with pressure energized soft seal

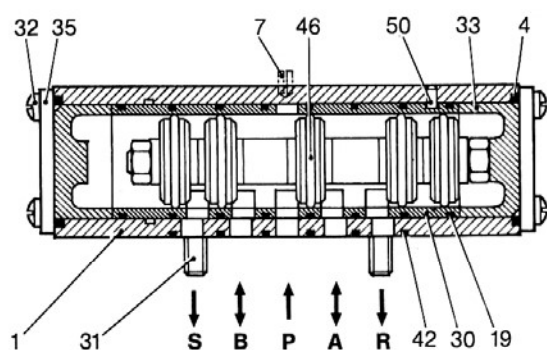
Sectional drawings



Component No. 2580829.0201

- 1.3 O-ring
- 1.4 O-ring
- 1.5.8 Spring assly.
- 1.5.9 Plunger
- 1.11 Gasket
- 1.28 Gasket
- 1.37 O-ring
- 1.78 Screw plug
- 7 Solenoid
- 22 Disk
- 31 Screw (nominal sizes 12/18)
- 32 Screw (nominal size 6)
- 36 Manual override

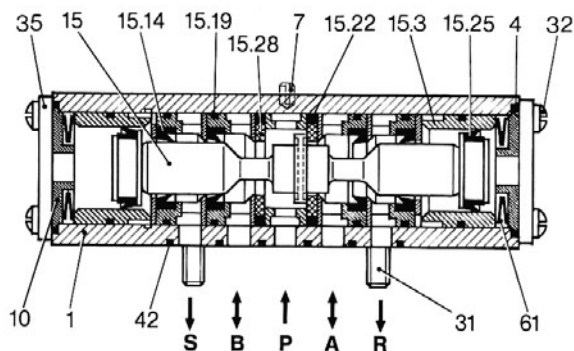
Engineering design: Soft seal spool valve



Nominal size	Part. No.
6	2580523
12	2580323
18	2581223

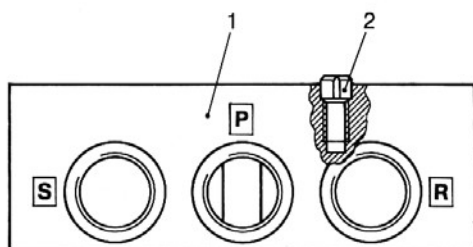
- 1 Body
- 4 O-ring
- 7 Safety pin
- 19 O-ring
- 30 Tube
- 31 Screw (nominal sizes 12/18)
- 32 Screw
- 33 Disk
- 35 Plate
- 42 Gasket
- 46 Piston assly.
- 50 Pin

Engineering design: Poppet valve



Nominal size	Part. No.
6	2580520
12	2580320
18	2581220

- 1 Body
- 4 O-ring
- 7 Safety pin
- 10 Disk
- 15 Valve assembly
- 15.3 Bushing
- 15.14 Lip-ring
- 15.19 O-ring
- 15.22 O-ring
- 15.25 Lip-ring
- 15.28 Gasket
- 31 Screw (nominal sizes 12/18)
- 32 Screw
- 35 Plate
- 42 Gasket
- 61 Plate spring



Nominal size	Part. No.
6	2558100
12	2558200
18	2558300

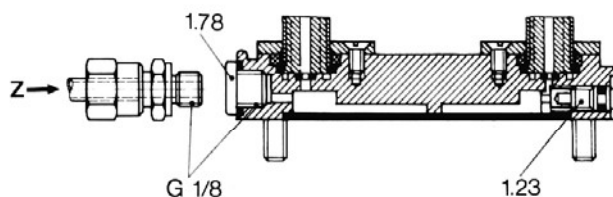
- 1 Plate
- 2 Safety pin

Wearing parts marked * are enclosed in spare parts kit.
When ordering, please state valve catalog number.

Additional elements Manual overrides

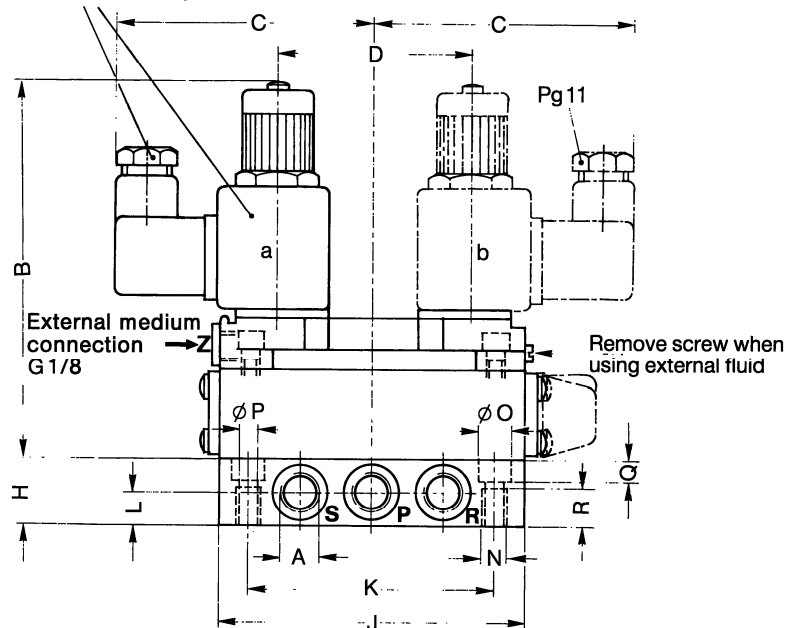
Cat. No.	0565847	0565849	0565916	0565851	0565855
	Manual override without detent shown left. Detented version after removal of cap shown right.	Manual override without detent	Manual override without detent (push button concealed)	Mock-up	Disk for manual override for valves equipped with solenoids 02XX and 07XX

Pressure actuated version (external medium) with solenoid pilot valve by driving in screw item 1.23 and removing screw plug item 1.78



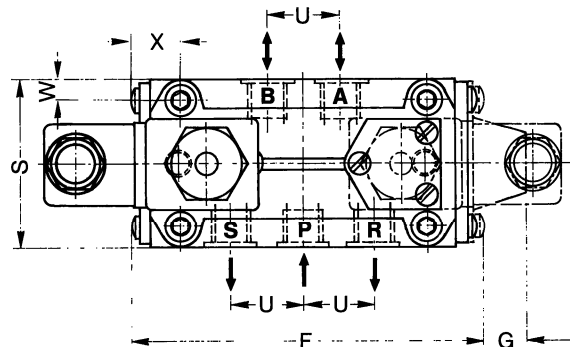
Dimensional drawing 01

Solenoid and connector can be oriented 90° to position shown



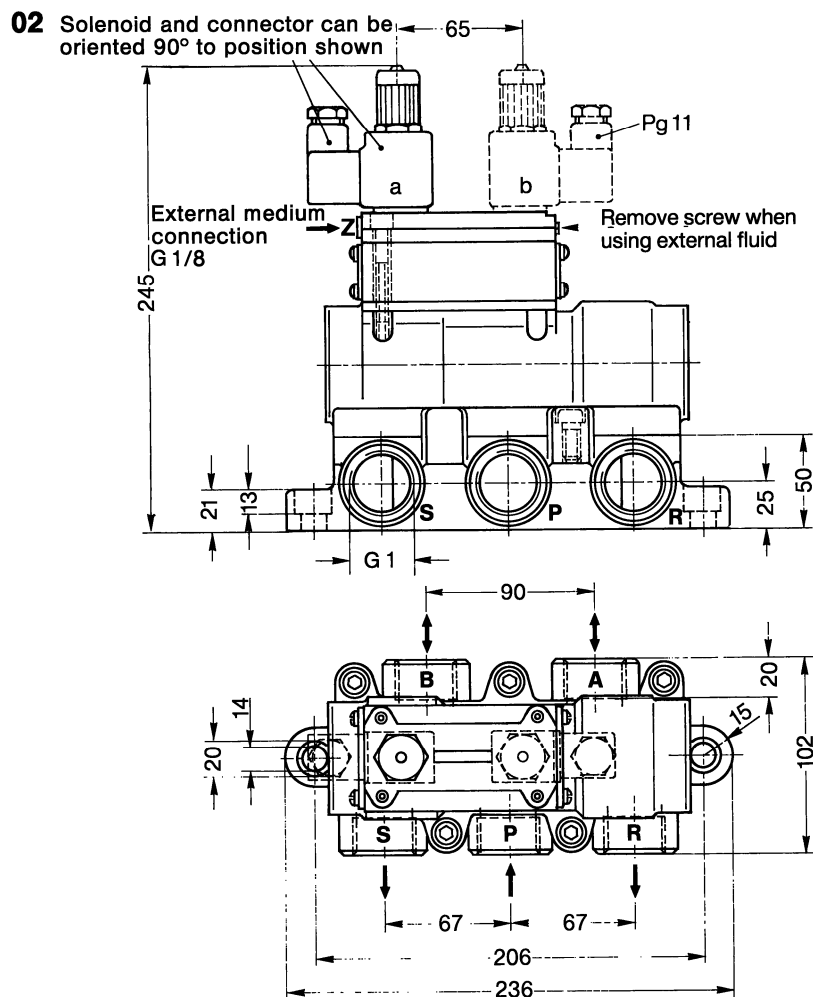
Dimensional table for valves without subplate

Cat. No.	Nominal size	≈B	≈C	D	F	G	S	W	X
2555605.0201	6	123	—	—	114	—	55	6,5	16
2555608.0201	6	123	—	—	114	18	55	6,5	16
2555705.0201	6	123	89	65	114	—	55	6,5	16
2555708.0201	6	123	89	65	114	—	55	6,5	16
2556105.0201	12	133	—	—	138	—	66	8	44
2556108.0201	12	133	—	—	138	9	66	8	44
2556205.0201	12	133	87	65	138	—	66	8	44
2556208.0201	12	133	87	65	138	—	66	8	44
2556605.0201	18	155	—	—	181	—	84	10	57
2556608.0201	18	133	—	—	157	9	84	10	48,5
2556705.0201	18	155	89	65	181	—	83	9,5	57
2556708.0201	18	133	87	65	157	—	84	10	48,5

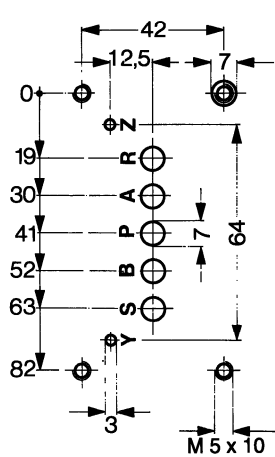


Dimensional table for valves with subplate

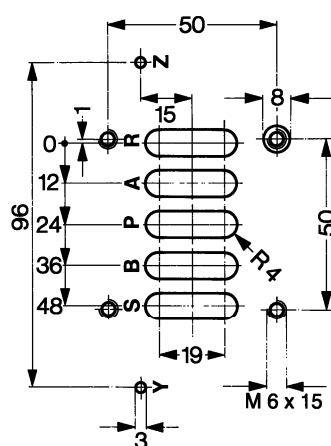
Cat. No.	Nominal size	A	≈B	≈C	D	F	G	H	J	K	L	N	Ø O	Ø P	Q	R	S	U
2550605.0201	6	G 1/4	123	89	—	114	—	22	102	82	11	M8	11	6,5	7	15	55	24
2550608.0201	6	G 1/4	123	89	—	114	18	22	102	82	11	M8	11	6,5	7	15	55	24
2550705.0201	6	G 1/4	123	89	65	114	—	22	102	82	11	M8	11	6,5	7	15	55	24
2550708.0201	6	G 1/4	123	89	65	114	—	22	102	82	11	M8	11	6,5	7	15	55	24
2551105.0201	12	G 1/2	133	89	—	138	—	45	124	100	16	M8	11	6,5	7	15	69	34
2551108.0201	12	G 1/2	133	89	—	138	9	45	124	100	16	M8	11	6,5	7	15	69	34
2551205.0201	12	G 1/2	133	89	65	138	—	45	124	100	16	M8	11	6,5	7	15	69	34
2551208.0201	12	G 1/2	133	89	65	138	—	45	124	100	16	M8	11	6,5	7	15	69	34
2551605.0201	18	G 3/4	155	89	—	181	—	58	130	100	21	M10	14,5	8,4	9	15	89	42
2551608.0201	18	G 3/4	133	89	—	157	9	58	130	100	21	M10	14,5	8,4	9	15	89	42
2551705.0201	18	G 3/4	155	89	65	181	—	58	130	100	21	M10	14,5	8,4	9	15	89	42
2551708.0201	18	G 3/4	133	89	65	157	—	58	130	100	21	M10	14,5	8,4	9	15	89	42



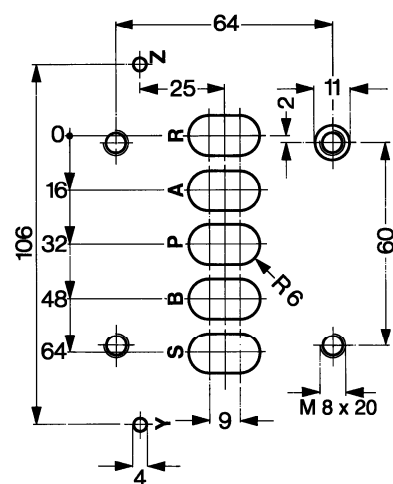
Interface to DIN 24341 Form AZ



NG 6



NG 12



NG 18

Manifold systems for 5/2 directional valves are listed in Publication 7501076 (Reg. 13 of Pneumatics catalog).