

Directional spool valves type SG and SP

Directional spool valves type SG and SP can be supplied in 5 different sizes and are available in two versions, either for pipe connection (SG) with and without pressure-limiting valve, or as a manifold mounting valve (SP). They are used to control the direction of movement of consumers such as hydrostatic motors and hydraulic cylinders.

The sturdy design means that these valves are suitable for a wide range of applications, such as ship building or mobile hydraulics. The different actuations can also be used for this purpose.

Features and benefits:

- Sturdy design
- Suited for maritime applications
- Various actuations

Intended applications:

- Mining machinery
- Cranes and lifting equipment
- Ship building
- Road vehicle construction



Nomenclature:	Directional spool valve
Design:	Individual valve for pipe connection or manifold mounting
Actuation:	Solenoid Manual <ul style="list-style-type: none"> ■ With automatic spring return ■ With detent Mechanical <ul style="list-style-type: none"> ■ Roller head ■ Pin head Pressure (only or combined with manual actuation) <ul style="list-style-type: none"> ■ Hydraulic ■ Pneumatic
p_{max}:	200 ... 400 bar
Q_{max}:	12 ... 100 lpm

Design and order coding example

SP 1	D	- A	
SG 3	E	3E	- MD 3/24 - 120

Pressure setting pressure limiting valve [bar]

Actuation mode

Pressure limiting valve

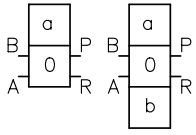
- Function**
- Parallel- or series connection
 - Directional spool valves either with positive (blocked between switching positions) or negative (slightly floating position) overlap
 - SP 1 with/without check valve insert

Basic type and size Directional spool valve SG 0 to 5, SP 1, SP 3, SP 5
 Directional spool valves type SP for manifold mounting, sizes 1, 3, 5

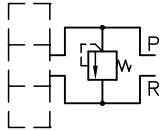
Function

Basic symbol

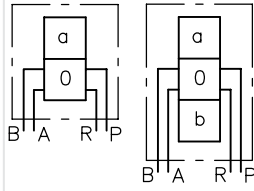
SG
Individual valve for pipe connection



With pressure limiting valve



SP
Individual valve for manifold mounting



Symbol

SG	SP	G	C	D	E	N	W	R	V	Z	U
		L	F	H	Y	S	X				

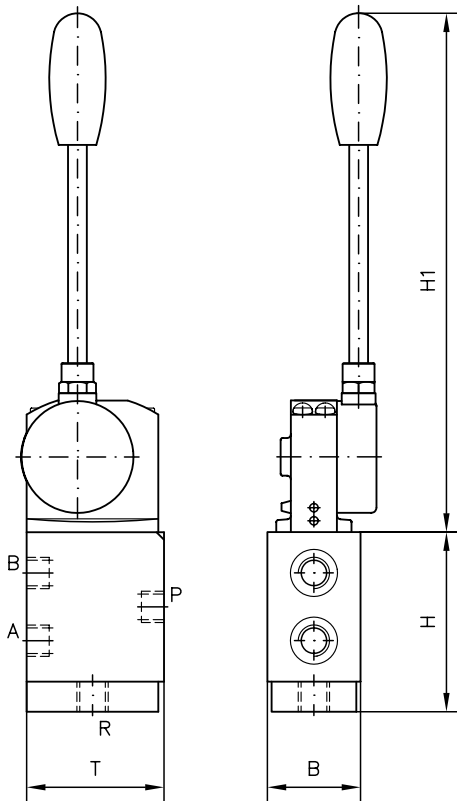
- Symbols Z, U, X: Only size 2, 3, and 5

Actuations:

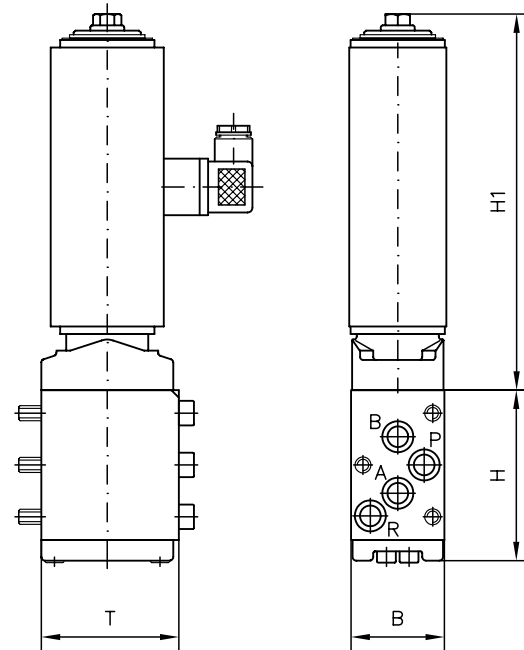
Manual		Solenoid		Mechanical		Pressure		Double acting		
A, AK	C, CK	ME, MD	MU	RE, RD	BE, BD	NE, ND	NU	NM	KD	KM
Spring return	Detent			Roller head	Pin head	Pneumatic		Hydraulic	Pneumatic / manual	Hydraulic / manual
		Solenoid voltage: 12V DC, 24V DC, 230V AC other voltage on request		Actuation force: 90 ... 280 N depending on size		Control pressure: Pneumatic 5 ... 10 bar Hydraulic 12 ... 20 bar				

General parameters and dimensions

SG with manual actuation



SP with solenoid actuation



	Q _{max} [lpm]	Operating pressure p _{max} [bar] for actuation			Ports (BSPP)	Dimensions [mm]				m _{max} [kg]
		Solenoid	Mechanical	Manual/ pressure		H	H1	B	T	
SG 0	12	200	400	400	G 1/4, G 3/8	59.5	151	39.5	51	0.8 ... 1.0
SG 1	20	200	400	400	G 3/8	59.5	151	39.5	51	0.8 ... 1.0
SG 2	30	315	400	400	G 3/8	max. 100.5	342	49.5	73	2.5 ... 5.7
SG 3	50	315	400	400	G 1/2	max. 100.5	342	49.5	73	2.5 ... 5.7
SG 5	100	200	315	400	G 1	110	342	50	80	2.9 ... 6.1
SP 1	20	200	400	400	-	59.5	151	40	51	0.8 ... 1.0
SP 3	50	315	400	400	-	94.5	342	49.5	73	2.5 ... 5.7

Associated technical data sheets:

- Directional spool valves type SG, SP: [D 5650/1](#)
- Actuators:
 - Manual: [D 6511/1](#)
 - Solenoid: [D 7055](#)
 - Mechanical: [D 5870](#)
 - Pressure: [D 6250](#)

Similar products:

- Directional spool valve connected in parallel and in series type SKP, SKH: [D 7230](#)

Plugs:

- With LEDs etc.: [D 7163](#)
- With economy circuit: [D 7813](#), [D 7833](#)