

# Directional spool valves type SG and SP

The directional spool valves with optional pressure limiting valve type SG and SP are available in 5 sizes either for pipe connection (type SG) or manifold mounting (type SP).

They are widely used to control the direction of movement of hydraulic consumers e.g. motors or cylinders.

The sturdy design and a wide range of different actuations enable utilization of these valves in many applications such as mobile hydraulics or on ships.



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

## Basic types and general parameters

Basic type and size		Flow $Q_{max}$ (lpm)	Oper. pressure $p_{max}$ (bar) for actuation version					Tapped ports <sup>1)</sup> (BSPP)
Individual valve for pipe connection	Manifold mounting valve		Solenoid	Manual	Mechanical	Pressure	Manual/pressure	
SG 0		12	200	400	400	400	400	G 1/4 / G 3/8
SG 1	SP 1	20	200	400	400	400	400	G 3/8
SG 2		30	315	400	400	400	400	G 3/8
SG 3	SP 3	50	315	400	400	400	400	G 1/2
SG 5		100	200	400	315	400	400	G 1

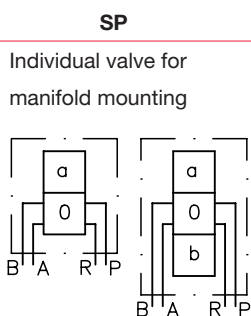
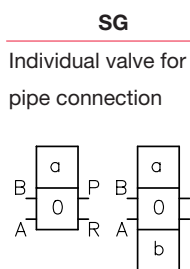
<sup>1)</sup> With type SG

## Additional versions

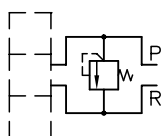
- Integrated pressure limiting valve with type SG
- Directional spool valve with enlarged ports and control grooves for delayed de-pressurization (preventing pressure surges)

**Symbols**

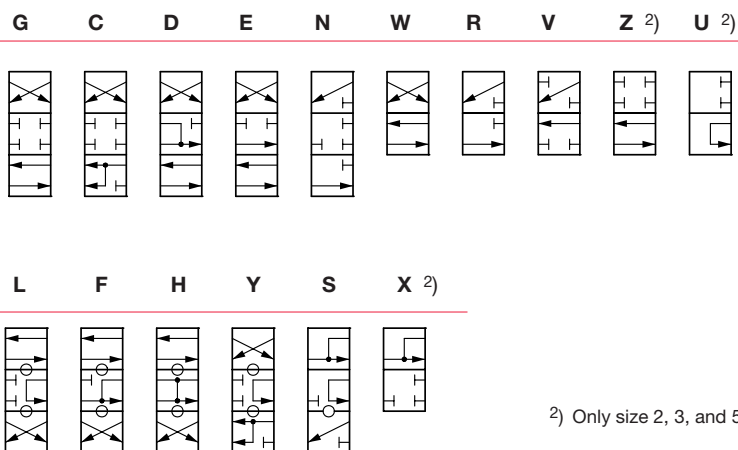
**Basic symbol**



With pressure limiting valve



**Symbol**

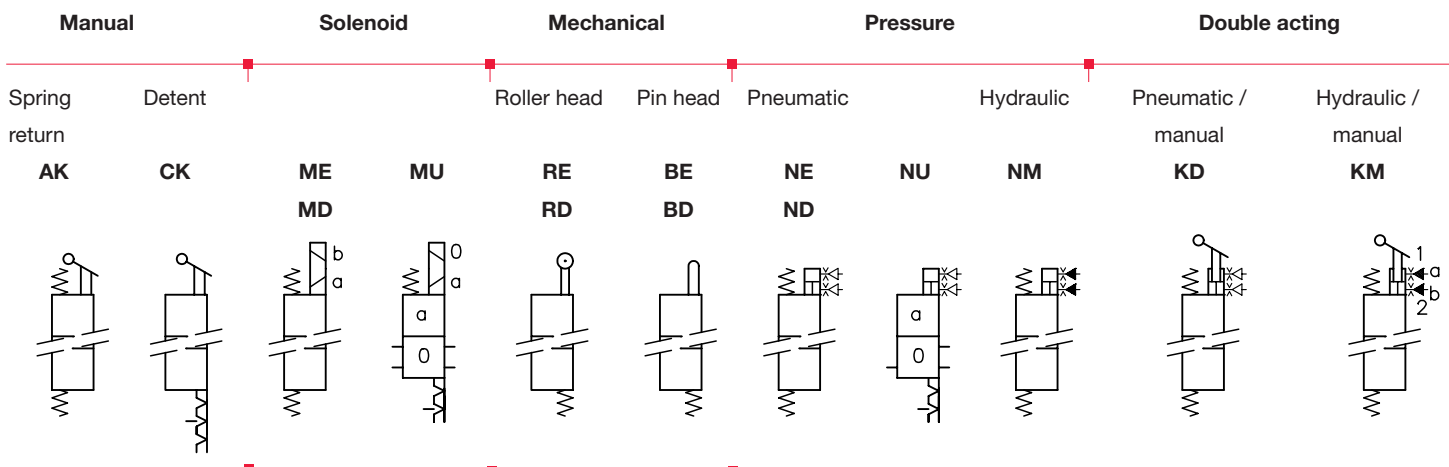


<sup>2)</sup> Only size 2, 3, and 5

**Additional versions (symbols)**

- Selection of positive (blocked in intermediate positions) and negative (slightly) over lapping directional spool valves

**Actuations**



Solenoid voltage  
12V DC, 24V DC,  
230V AC 50/60 Hz  
other voltage on  
request

Actuation force:  
90 ... 280 N  
depending on size

Control pressure:  
Pneumatic 5 ... 10 bar  
Hydraulic 12 ... 20 bar

**Order examples**

**SG 1 G - AK**

Indiv. directional spool valve for pipe connection, size 1, flow pattern G, manual actuation AK

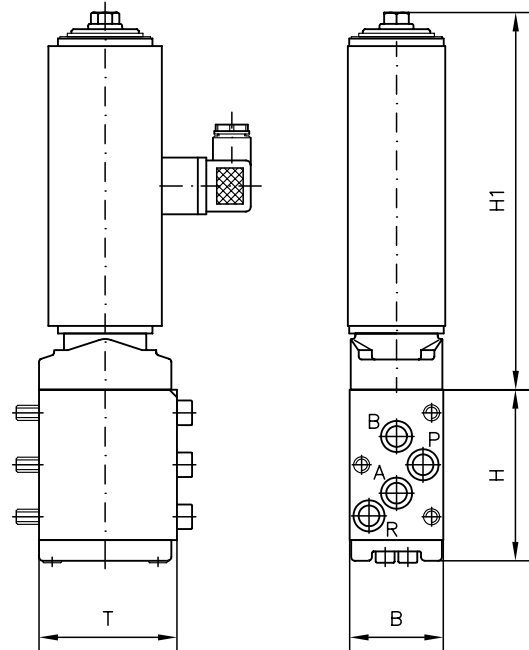
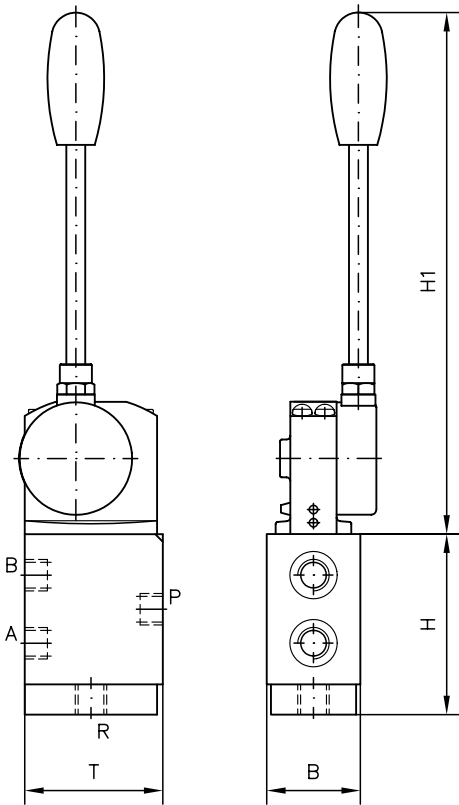
**SP 3 E - MD 3/24**

Indiv. directional spool valve, manifold mounting, size 3, flow pattern E, solenoid actuation coding MD3, solenoid voltage 24V DC

**Dimensions**

**Type SG.-AK** (see order example)

**Type SP.-M.** (see order example)



Basic type	H	H1 <sub>max</sub> <sup>3)</sup>	B	T	m <sub>max</sub> (kg) <sup>3)</sup>
SG 0(1)	59.5	151	39.5	51	0.8 ... 1.0
SG 2(3)	max.100.5	342	49.5	73	2.5 ... 5.7
SG 5	110	342	50	80	2.9 ... 6.1

Basic type	H	H1 <sub>max</sub> <sup>3)</sup>	B	T	m <sub>max</sub> (kg) <sup>3)</sup>
SP 1	59.5	151	40	51	0.8 ... 1.0
SP 3	94.5	342	49.5	73	2.5 ... 5.7

All dimensions in mm, subject to change without notice!

<sup>3)</sup> Depending on actuation

**Additional information**

- Directional spool valve type SG, SP D 5650/1
- Actuations
  - Manual D 6511/1
  - Solenoid D 7055
  - Mechanical D 5870
  - Pressure D 6250

- Directional spool valve connected in series or in parallel type SKP and SKH D 7230
- Plugs with LED etc. D 7163
- Plugs with economy circuit D 7813, D 7833

For page and section of the devices additionally listed, see type index