

2.1 Directional spool valve type SW, SWP and NSWP

Directional spool valves are a type of directional valve. They control the direction of movement and the velocity of single and double-acting hydraulic consumers. The directional spool valve type NSWP and SWP is available as a manifold mounting valve. Type NSWP is available with a nominal size 6 hole pattern (NG 6). Type SW is available as a single valve for pipe connection. The directional spool valve type NSWP can be flexibly adapted to different control tasks by means of additional functions in the pump line and/or on the consumer side (e.g. restrictors, restrictor check valves). Intended applications for the directional spool valve type NSWP, SWP and SW include industrial hydraulics, in particular machine tools.

Features and benefits:

- Compact valve banks possible
- Proportional functions easy to control
- Large range of variants
- Can be combined with NG6 sub-plates (type BA2)

Intended applications:

- Machine tools
- Construction and construction materials machinery
- Offshore and marine technology
- Road vehicles



Nomenclature:	Directional spool valve
Design:	Individual valve for pipe connection Individual manifold mounting valve Valve bank manifold mounting Combination with hydraulic power packs
Actuation:	Solenoid
p_{max}:	315 bar
Q_{max}:	25 l/min

Design and order coding example

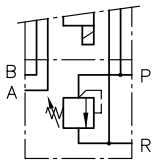
NSWP2 G /M /R / ABR1,0 /50 /G24 - 3/8

<p>Basic type, size</p>	<p>Directional spool valve SW, SWP size 1 and 2 NSWP size 2, connection hole pattern NG 6 (CETOP)</p>
<p>Function</p>	<ul style="list-style-type: none"> ▪ Indiv. valve with check valve or orifice in gallery P and/or check valve in gallery R (type SWP) ▪ Indiv. valve with 6/2-way function
<p>Solenoid version</p>	<ul style="list-style-type: none"> ▪ black/white solenoid or proportional solenoid ▪ Solenoid with detent ▪ Solenoid version conforming ATEX (p_{max} = 210 bar)
<p>Additional elements at P</p>	<p>Check valve or orifice</p>
<p>Additional elements at A and/or B</p>	<p>Restrictor check valve or orifice</p>
<p>Pressure switch or pressure gauge at A or B</p>	<p></p>
<p>Voltage of the actuation solenoids</p>	<p>12V DC, 24V DC, 110V AC, 230V AC</p> <ul style="list-style-type: none"> ▪ Solenoids with various plug versions
<p>Single connection block</p>	<p>for direct installation in the pipe G 3/8 (type NSWP and SWP2)</p>

Function

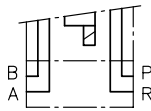
Sub-plate for pipe connection

- 1/4 S(R)



Sub-plate with pressure limiting valve¹⁾

- 3/8



Sub-plate²⁾

1) Only for type SWP 1

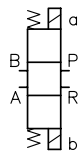
2) Only for type NSWP and SWP 2

Valve sections

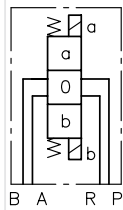
Basic symbol

Individual valve

SW



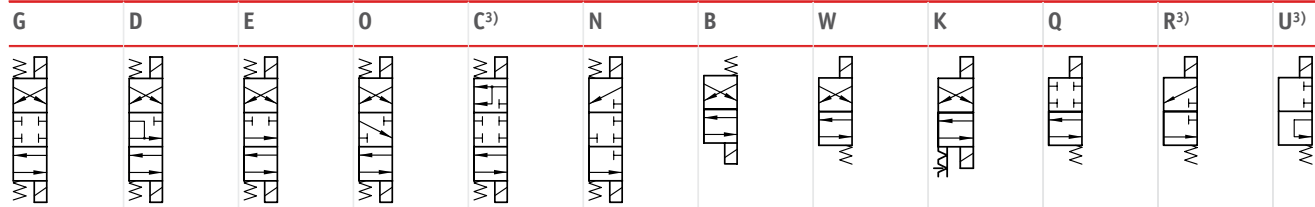
SWP / NSWP



Valve sections

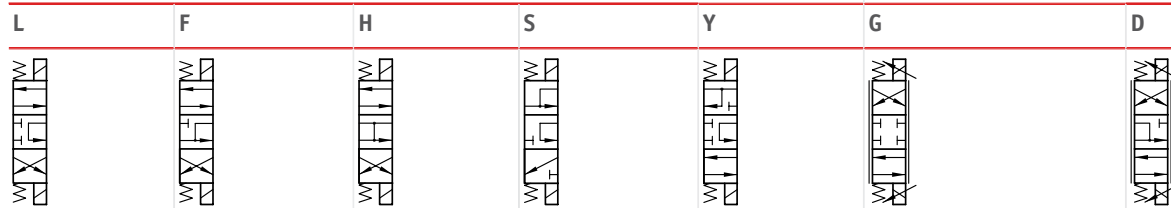
Circuit symbol

May be connected either in parallel or in series within a valve bank



Only connected in series within a valve bank (only type SW1)

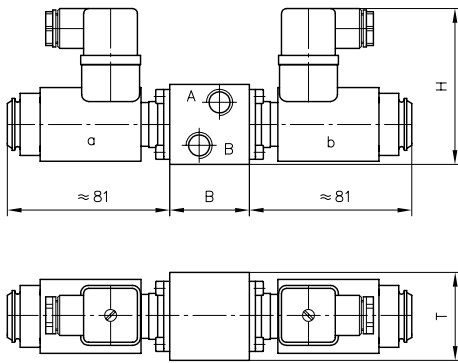
Spool for proportional adjustment



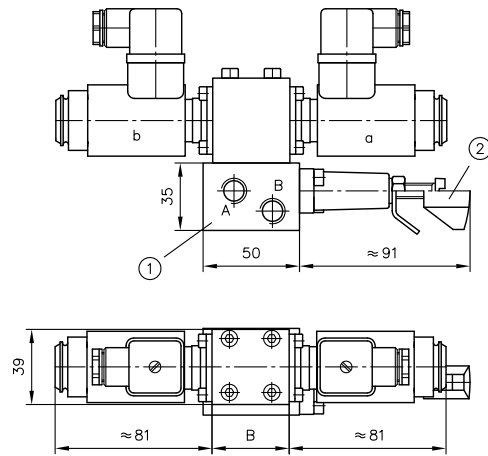
3) Only for type SWR 1

General parameters and dimensions

SW



SWP/NSWP2

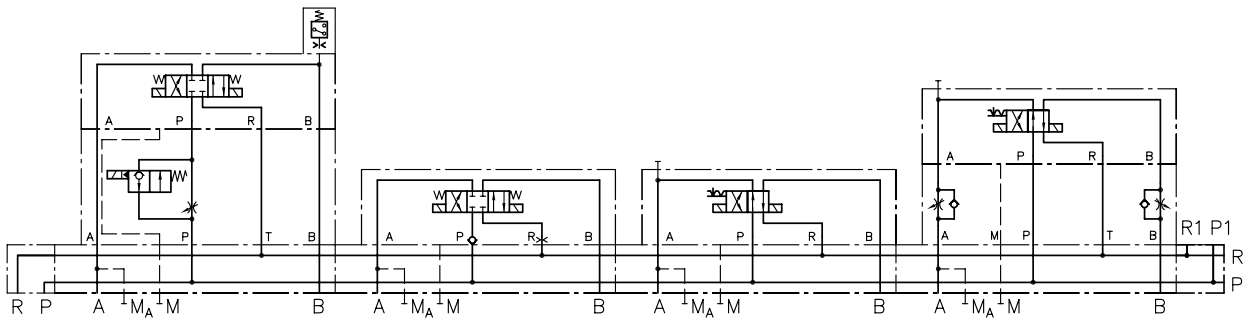


- 1 Single connection block
- 2 Pressure-limiting valve

	Q _{max} [lpm]	p _{max} [bar]	Ports	Dimensions [mm]			m [kg]	
				H	B	T	Individual directional spool valve	Sub-plate
SW/SWP 1	12	315	G 1/4	77 ... 90	40	40 ... 44	1.1 ... 1.5	0.6 ... 0.7
SW/SWP 2	25	315	G 3/8, G 1/4	78 ... 82.5	60 ... 70	40 ... 45	1.1 ... 2.4	0.8
NSWP2			NG 6					

Circuit example 1:

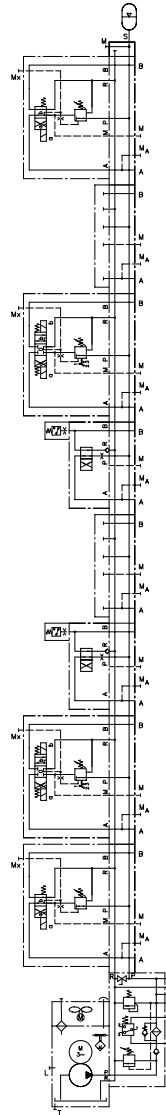
BA2-A5 -NSWP2G/M/03/NZP16V/PQ20/0
 -NSWP2G/M/R/B1,0
 -NSWP2K/M/20/0
 -NSWP2K/M/20/NZP16Q33/0
 -2-L24



Circuit example 2:

HKF44V9LD/1-Z16

- AL21D10V-F60/80-2
- BA2-NSMD2K/G/B2/O
- NSMD2G/GRK/B2/O
- NSWP2W/M/B1.0/06/S/O
- NG6X/O
- NSWP2W/M/B1.0/06/S/O
- NSMD2G/GRK/B2/O
- NG6X/O
- NSMD2K/G/B2/O
- 80-AC2001/40-X24


Combinable products:

- Valve bank type BA: [Page 144](#)
- Intermediate plate type NZP: [D 7788 Z](#)
- 6/2-directional spool valve: **Sk 7951-J-6/2**

Similar products:

- Valve banks type SWR and SWS: [Page 76](#)
- Clamping modules type NSMD: [Page 100](#)

Associated technical data sheets:

- [Directional spool valve type SW: D 7451](#)
- [Directional spool valve type NSWP 2: D 7451 N](#)

Male connectors:

- [Line connector type MSD and others: D 7163](#)
- With economy circuit: [D 7813](#), [D 7833](#)