

Directional spool valves type SWR and SWS

These directional spool valves are designed as valve bank. Actuation is via directly acting pressure resistant single stroke solenoids (wet armature); type SWS may be controlled also via twin solenoids enabling two speed rates or via prop. solenoids optionally with a stroke limitation. Versions with ATEX-approval are available as well. The valve sections consist of an end plate and a connection block (for pipe connection) or an adapter plate (for direct mounting to the hydraulic power packs), held together by a tension rod.

With type SWS, the valve sections can be fitted with additional functions, such as double check valves, load-holding valves or precharge valves etc., in ancillary blocks on the consumer side. It is also possible to integrate a check valve, throttle, orifice or pressure compensator on the pump side. The directional spool valves are primarily used in mobile hydraulics.

Features and benefits:

- Combination with lifting modules available (for fork lifts)
- Proportional movements can be controlled independently from the load
- Wide range of ancillary blocks
- Compact

Intended applications:

- Material handling (industrial trucks etc.)
- Wind turbines
- Construction and construction materials machinery
- Handling and assembly technology (industrial robots etc.)



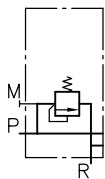
Nomenclature:	Directional spool valve
Design:	Valve bank Combination with hydraulic power packs
Actuation:	Solenoid
p_{max}:	315 bar
Q_{max}:	12 ... 25 lpm

Design and order coding example

SWR1	A-6/230	- GG	- 1	- G24	
				Solenoid voltage	12V DC, 24V DC, 110V AC, 230V AC
					■ Solenoids with various plug versions
				End plate	■ Additional ports P and/or R (P can be blocked)
				■ Idle circulation valve (ON/OFF, proportional)	
				■ End spool valve	
				Valve sections	■ Directional spool valve
				■ Additional options for the valve sections:	
				■ Options upstream (orifice, flow controller)	
				■ Consumer-side additional functions in ancillary block, e.g. double check valves, shock valves (load-holding valves etc.)	
				Connection block/adaptor plate	■ Pressure limiting valve (for pipe connection)
	■ For direct mounting at compact hydraulic power packs (type HK, HC, MP)				
	■ For direct mounting at hydraulic power packs type R				
	■ Idle circulation valve				
	■ 3-way flow controller				
	■ Adapter plates with optional connection of a pressure switch type DG3.. for gallery P				
Basic type, size	Type SWR 1 and SWS 2 Type SWC 1 for direct mounting at compact hydraulic power packs type KA, HC, MP, HK				

Function

Connection blocks:

A 6


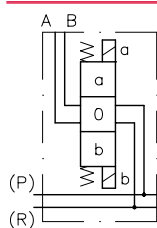
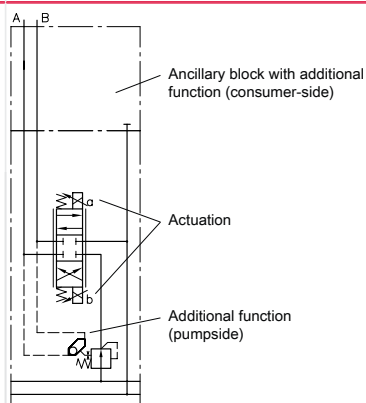
With tool adjustable pressure limiting valve
(for pipe connection)

F/D


For direct mounting onto hydraulic power
packs (type KA, HC, MP, HK)

Valve sections:

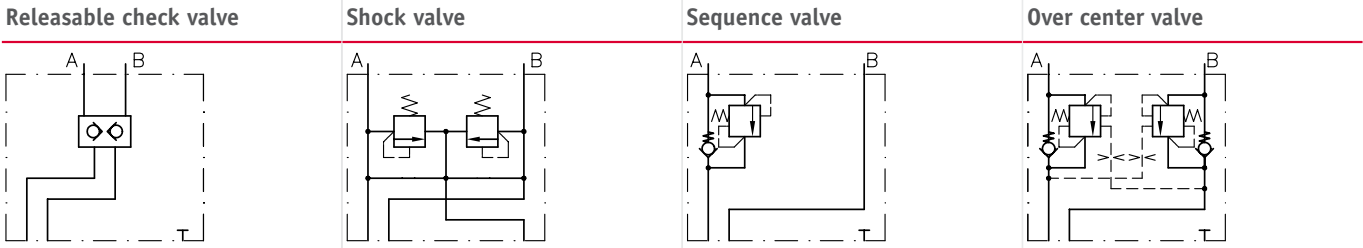
Basic symbol

SWR 1

SWS 2


Symbol

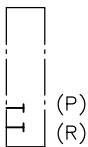
G	D	E	O	C	N	B	W	K	Q	R	U
Only connected in series within a valve bank						Spool valves suited for prop. actuation					
L	F	H	S	Y	G			D			

Ancillary block type SWS 2 with additional functions (consumer side):



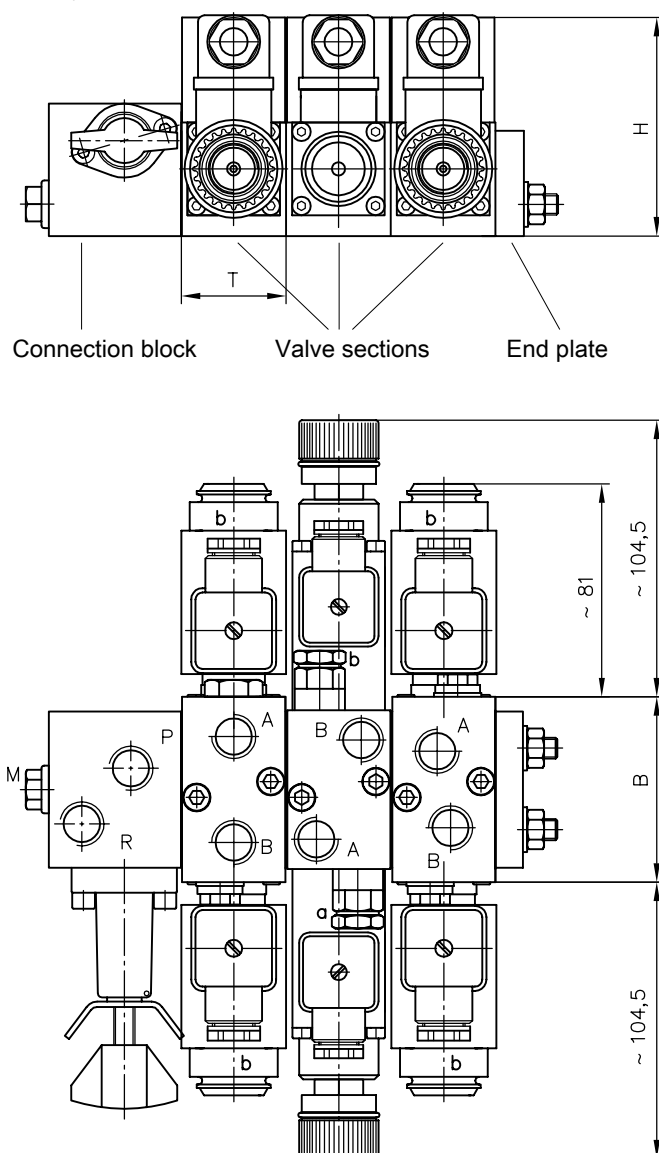
End plates:

SWR 1/SWS 2



General parameters and dimensions

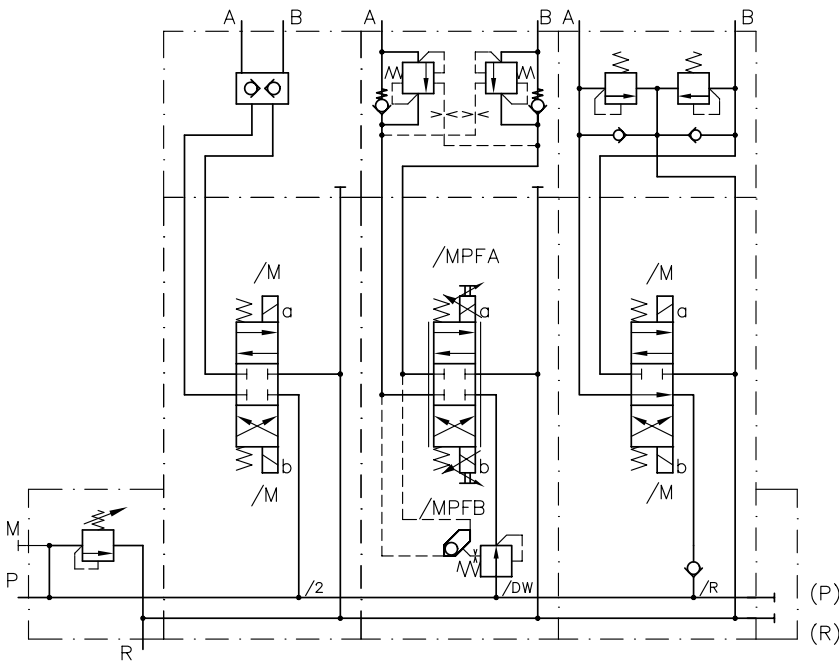
SWR 1, SWS 2



	Q_{\max} [lpm]	p_{\max} [bar]	Ports	Dimensions [mm]			m_{\max} [kg]	
				H	B	T	Individual section	Connection block
SWR 1	12	315	G 1/4	77 - 90	40	40	1.1 - 1.5	0.6 - 0.7
SWS 2	25	315	G 3/8, G 1/4	78 - 82.5	60	40	1.1 - 2.4	approx. 0.8

Circuit example:

SWS 2 A 7/200	- G/M/2/2 RH	- G 10/MPF/DW/2 AL B 7/180 BLC 4/140	- E/M/R/2 AN100 BN 100-1-G 24
Valve bank type SWS, size 2, connection block with pressure limiting valve (manually adjustable, factory set to 200 bar)	1. Valve section flow pattern G with solenoid actuation, no additional function in gallery P, with ancillary block featuring releasable check valves for ports A and B	2. Valve section flow pattern G with prop. solenoid actuation (MP) and stroke limitation for A and B (FAB), max. flow for ports A and B is 10 lpm, flow control in gallery P of the basic valve body (DW), ancillary block with over center valves (factory set to A = 180 bar and B = 140 bar)	3. Valve section flow pattern E with solenoid actuation, check valve in gallery P, ancillary block featuring shock and suction valves for ports A and B (both factory set to 100 bar), standard end plate. All solenoids 24V DC



Associated technical data sheets:

- Directional spool valve banks type SWR: [D 7451 R](#)
- Directional spool valve banks type SWS: [D 7951](#)

Suited products for combination:

- Pressure switches type DG3..., DG5.E: [D 5440](#), [D 5440 E/1](#)

Suitable plugs:

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