

## Directional spool valve bank type SWR and SWS

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 bank type SWS is available with series connection. The consumers can be operated with on-off or proportional control. Versions are available for usage in potentially explosive atmospheres. By means of additional functions in the pump line, in the intermediate plates (longitudinal and sandwich valve combination) and ancillary blocks the directional spool valve bank can be flexibly adapted to different control tasks.

Intended applications include mobile hydraulics, in particular civil engineering, agricultural engineering and material handling.

### Features and benefits:

- Can be combined for forklift trucks with lifting modules
- Proportional movements can also be controlled independently of the load
- Extensive range of ancillary blocks
- Compact and extremely space-saving dimensions

### Intended applications:

- Material handling
- Wind turbines
- Construction and construction materials
- Handling and assembly techn.
- Municipal trucks



|                         |  |
|-------------------------|--|
| <b>Nomenclature:</b>    | Directional spool valve                              |
| <b>Design:</b>          | Valve bank<br>Combination with hydraulic power packs |
| <b>Actuation:</b>       | Solenoid   |
| <b>p<sub>max</sub>:</b> | 315 bar  |
| <b>Q<sub>max</sub>:</b> | 25 l/min   |

### 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**

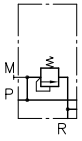
- Pressure limiting valve (for pipe connection)
- Idle circulation valve
- 3-way flow controller

Basic type, size Type SWR 1 and SWS 2

## Function

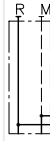
### Connection blocks:

A 6



With tool adjustable pressure limiting valve (for pipe connection)

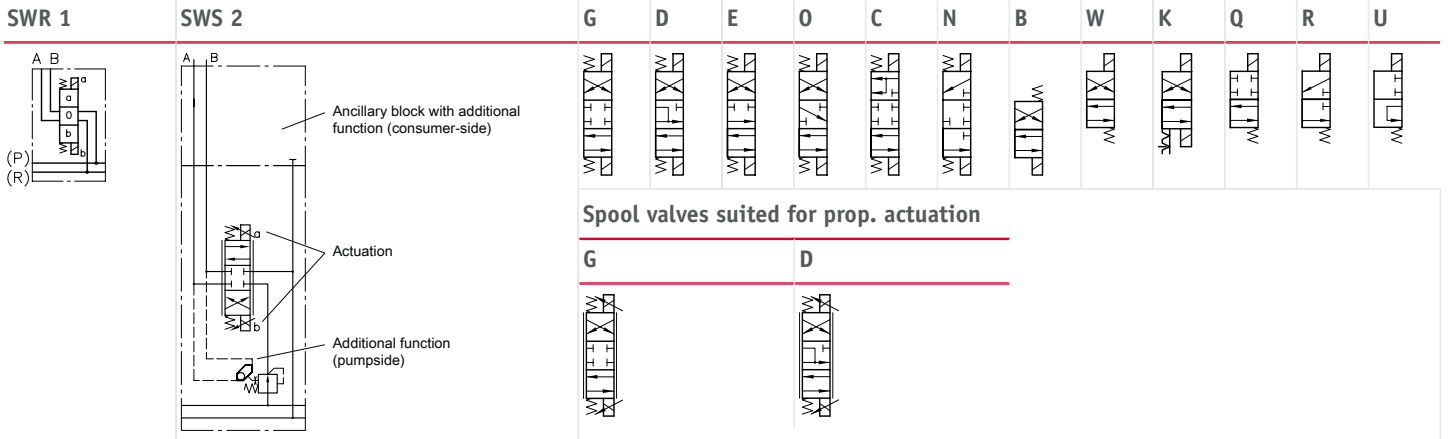
F/D



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

### Valve sections:

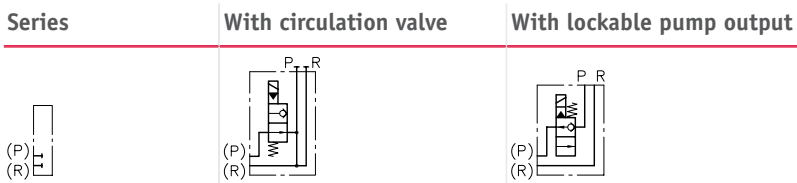
#### Basic symbol



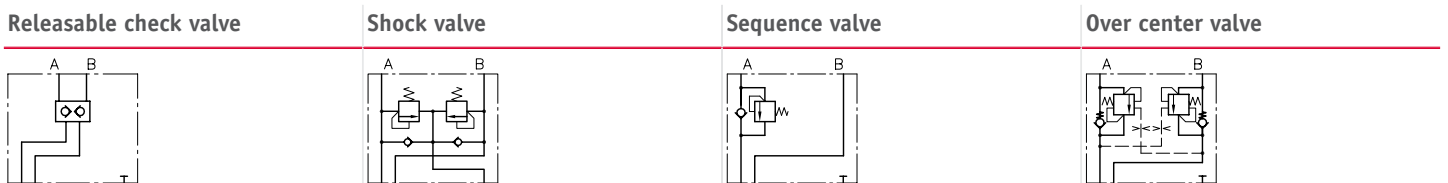
### Additional versions for valve sections:

- b/w solenoids with stroke limitation
- prop. solenoids with stroke limitation
- solenoids also available in ATEX-compliant version ( $p_{max} = 210 \text{ bar}$ )

### End plates (SWR 1/SWS 2):

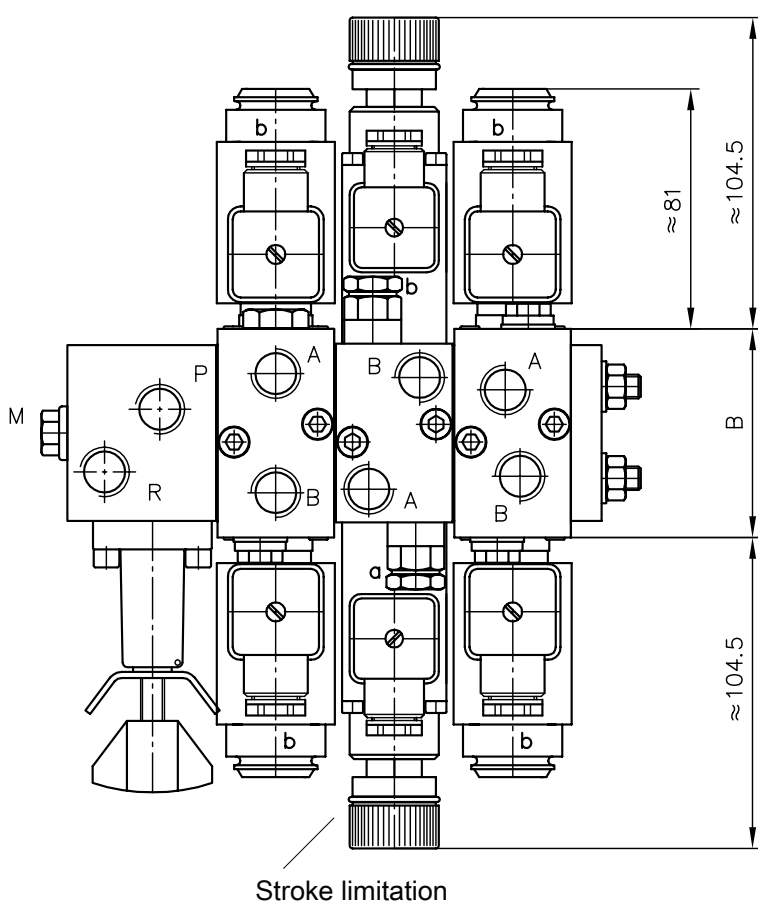
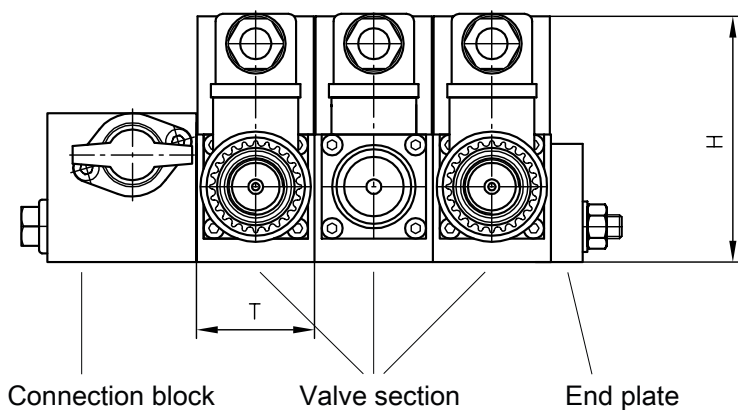


### Ancillary block type SWS 2 with additional functions (consumer side):



**General parameters and dimensions**

SWR 1, SWS 2



|       | $Q_{\max}$<br>[lpm] | $p_{\max}$<br>[bar] | Ports        | Dimensions<br>[mm] |    |    | $m_{\max}$<br>[kg]    |                  |
|-------|---------------------|---------------------|--------------|--------------------|----|----|-----------------------|------------------|
|       |                     |                     |              | H                  | B  | T  | Individual<br>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**

Valve bank type SWS, size 2, connection block with pressure limiting valve (manually adjustable, factory set to 200 bar)

**- G/M/2/2 RH**

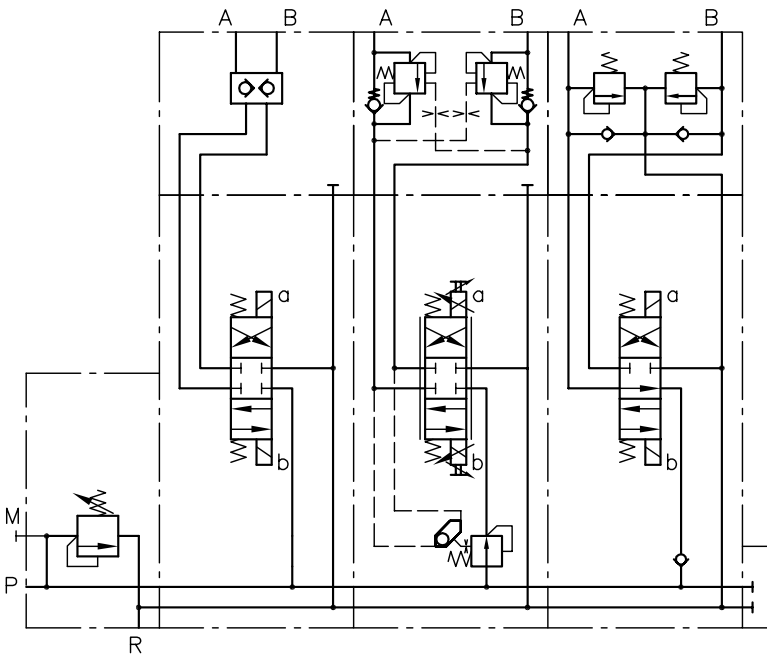
1. Valve section flow pattern G with solenoid actuation, no additional function in gallery P, with ancillary block featuring releasable check valves for ports A and B

**- G 10/MPF/DW/2 AL B 7/180 BLC 4/140**

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)

**- E/M/R/2 AN100 BN 100-1-G 24**

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 type SW: D 7451](#)
- [Directional spool valve bank type SWS: D 7951](#)

**Suited products for combination:**

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

**Suitable male connectors:**

- [Line connector type MSD and others: D 7163](#)
- With economy circuit: [D 7813](#), [D 7833/1](#)