

## Directional seated valve bank type BWH and BWN

The valve bank types BWN and BWH consist of a connection block (with ports P and R), the directional seated valves types BWN and BWH installed on sub-plates and connected in parallel plus the end plate. The whole valve bank is held together with one tension rod.

Through selection of the sub-plate, different symbols can be achieved with the individual valves, including in conjunction with additional functions (e.g. pressure switches or pressure-limiting valves in the consumer channel). These valve banks may be either directly flange-mounted to a pipe system via a connection block (with or without pressure-limiting valve) or installed directly onto hydraulic power packs (type HK, HC, MP, MPN, KA and NPC) using an adapter plate. Various end plates (e.g. with pressure switch in the P gallery or accumulator drain valve) extend the range of possible applications.

### Features and benefits:

- Modular concept
- Adapter plates for flange-mounting on hydraulic power packs or combination with other valve types
- With the valve bank version, option to incorporate additional functions in the sub-plate, such as pressure-limiting valves, pressure switches etc.
- Energy-efficient solutions in connection with hydraulic accumulators

### Intended applications:

- Machine tools (chipping and non-chipping)
- Rubber and plastic machinery
- Mining machinery (incl. oil production)
- Rubber and plastics machinery



<b>Nomenclature:</b>	Directional seated valve, zero leakage
<b>Design:</b>	Valve bank <ul style="list-style-type: none"> <li>■ For pipe connection</li> <li>■ Combination with hydraulic power packs</li> </ul>
<b>Actuation:</b>	Solenoid
<b>p<sub>max</sub>:</b>	350 ... 450 bar
<b>Q<sub>max</sub>:</b>	5 ... 60 lpm

## Design and order coding example

BWH2 A-1/300 - FH5N5 - 1 - 1 - G24

**Solenoid voltage** 12V DC, 24V DC, 110V AC, 230V AC

- Versions with M12-plug and 8-Watt solenoid

**Port size** G 1/4, G 3/8 (BSPP)

- End plate**
- With one or two pressure switches
  - With accumulator drain valve
  - With additional pressure limiting valve in gallery P

- Valve sections**
- Directional valves type WH or WN
  - Valve section options:
    - Return pressure stop
    - Pressure switch for the consumer ports or for gallery P
    - Pressure limiting valves at the consumer port
    - Pressure reducing valve reducing the pressure in the downstream P gallery
  - Additional sections:
    - Pressure reducing valve
    - Indiv. sub-plate with pressure switch
    - Separation plate for gallery P

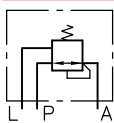
- Connection block/adaptor plates**
- For pipe connection, with/without pressure limiting valve, manually or tool adjustable, with/without prop. pressure limiting valve
  - For direct mounting at compact hydraulic power packs
  - For direct mounting at hydraulic power packs
  - Adapter plates for combination with directional valves type BVZP or SWR/SWP

**Basic type, size** Type BWN, size 1 and type BWH, size 1 to 3

## Function

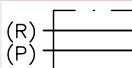
### Connection blocks/adaptor plates:

A-1/...



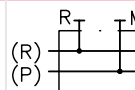
For pipe connection, with tool adjustable pressure-limiting valve (/...- pressure specification in bar)

C



For mounting onto hydraulic power packs

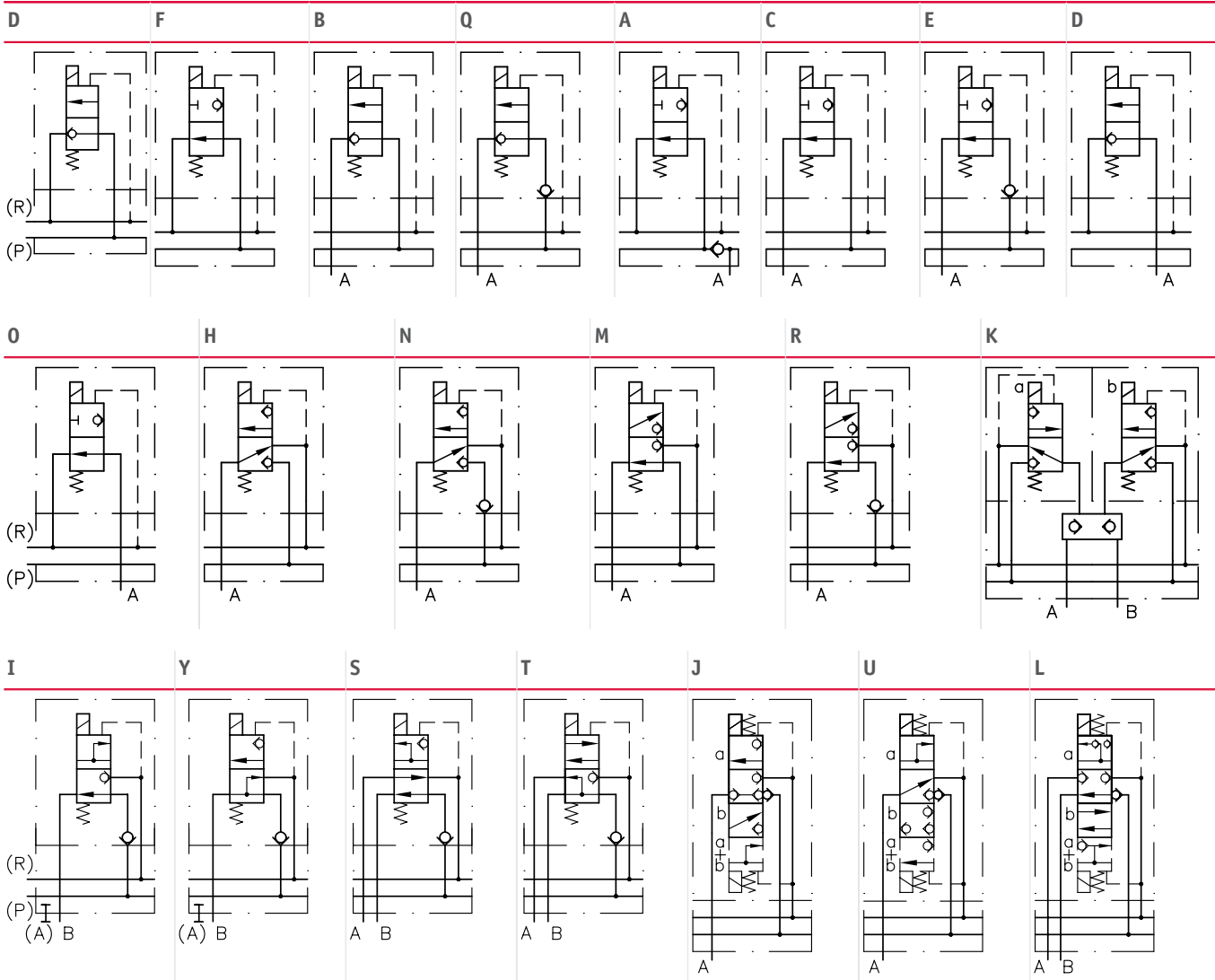
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For mounting onto compact hydraulic power packs with connection block (type HK, HC, MP, MPN, KA and FP)

### Valve sections:

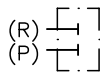
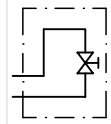
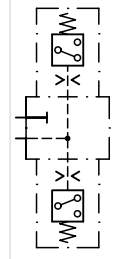
#### 2/2-way directional seated valves



Additional options for the valve sections:

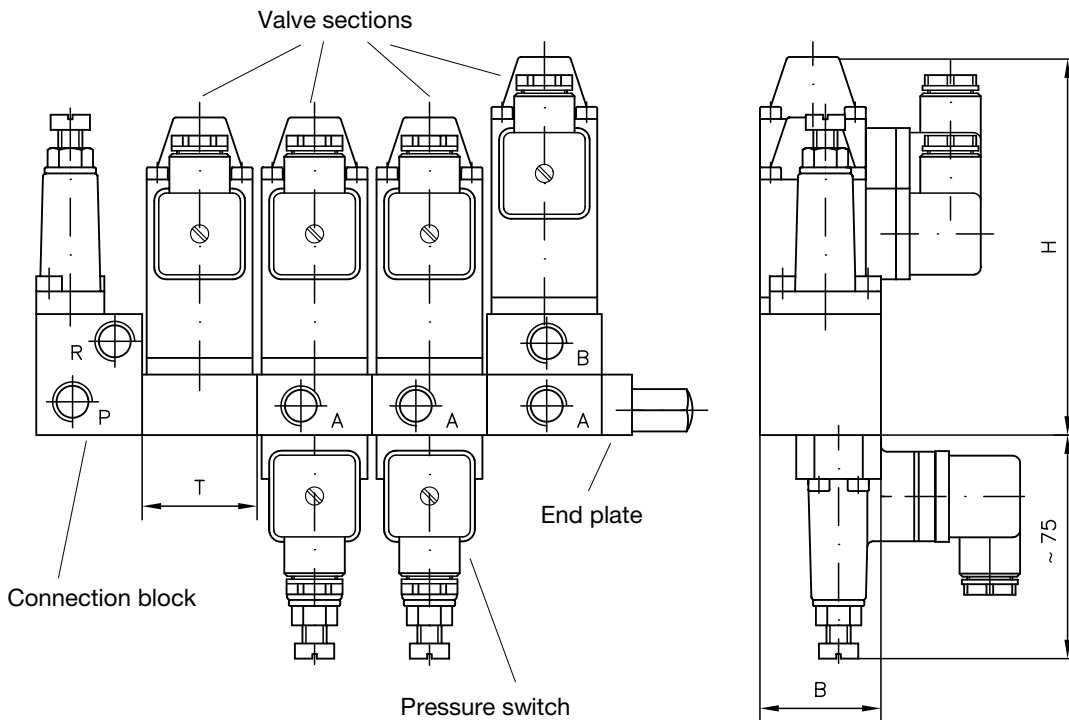
- Pressure switches in the consumer or pump channel. The pressure switches (type DG 3..) are directly flange-mounted to the sub-plate.
- Pressure-limiting valves in the consumer channel (for 3/2- or 3/3-way directional valves, for size 1). The pressure-limiting valve is directly incorporated in the sub-plate.
- Pressure-reducing valves for pressure reduction in the subsequent pump channel.

**End plates:**

1	2	3../3..
 <p data-bbox="71 481 175 548">Standard end plate</p>	 <p data-bbox="343 481 614 548">End plate with accumulator drain valve</p>	 <p data-bbox="614 481 1029 548">End plate with one or two pressure switches connected to the P gallery</p>

**General parameters and dimensions**
**BWH**

For pipe connection:



	$Q_{max}$ [lpm]	$p_{max}$ [bar]	Ports P, R, A, B (BSP)	Dimensions [mm]			m [kg]
				H	T	B	
<b>BWN 1</b>	5	350	G 1/4	116.5 ... 131.5	38	40	0.8 ... 0.9
<b>BWH 1</b>	8	450	G 1/4	116.5 ... 131.5	38	40	0.8 ... 0.9
<b>BWH 2</b>	15	350	G 1/4	122 ... 157.5	38	50	0.9 ... 1.1
<b>BWH 3</b>	30	350	G 3/8	155.5 ... 168	50	60	1.9 ... 2.4
<b>BWH 4</b>	60	350	G 1/2	158 ... 213	70	92	4.1 ... 6.1

- Mass [kg] per valve section: + 0,3 kg with added pressure switch

### Circuit example:

HC 24/0,64 - A2/400

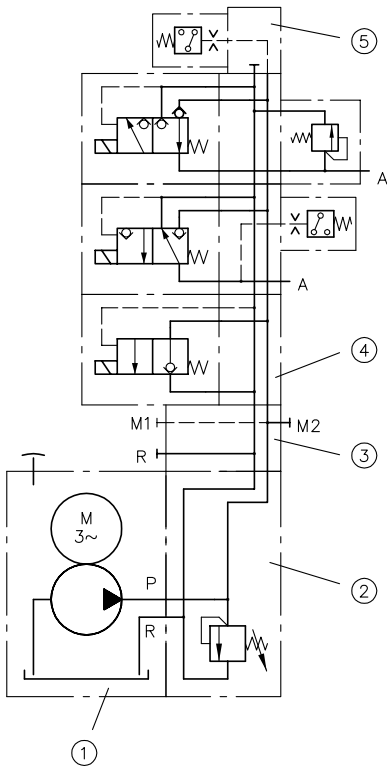
Hydraulic power pack type HC, size 2, connection block with pressure limiting valve (manually adjustable)

- BWH1F1 - D H5 R/150 - 36 - 1 - G24

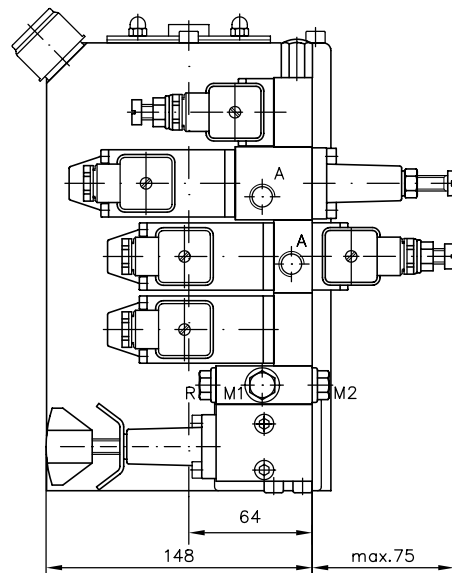
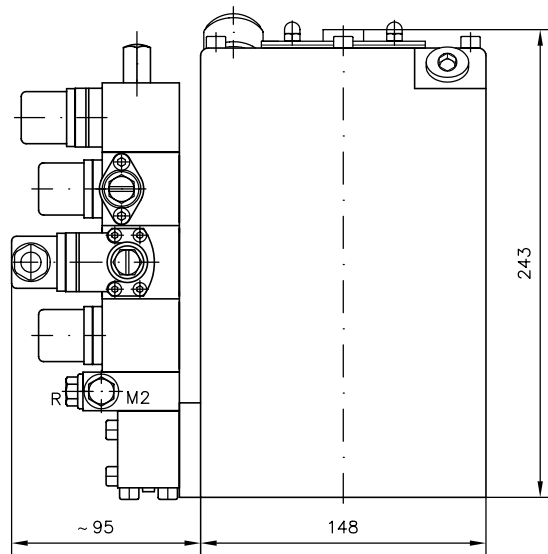
Valve bank type BWH, size 1 with three valve sections and end plate with pressure switch

### Main parameter of the circuit example:

- $Q_{pu} = 0.64$  lpm (at 1450 rpm)
- $p_{max pu} = 700$  bar
- $p_{system} = 400$  bar (setting of the pressure limiting valve)
- $V_{usable} = \text{approx. } 1.5$  l



- 1 Compact hydraulic power pack
- 2 Connection block
- 3 Adapter plate
- 4 Valve section
- 5 End plate



### Associated publications:

- Directional seated valve banks type BWN1, BWH: [D 7470 B/1](#)
- Directional seated valves type WN1, WH: [D 7470 A/1](#)

### Connection block:

- Type A: [D 6905 A/1](#)

### Compact hydraulic power packs:

- Type HC, HCW, HCG: [D 7900](#), [D 7900 G](#)
- Type HK, HKF, HKL: [D 7600-2](#), [D 7600-3](#), [D 7600-4](#), [D 7600-3L](#)

- Type NPC: [D 7940](#)
- Type KA, KAW: [D 8010](#)

### Hydraulic power packs:

- Type R: [D 6010](#)

### Hydraulic accessories:

- Pressure switches type DG 3.., DG 5E: [D 5440](#), [D 5440 E/1](#)
- Pressure-reducing valves type CDK: [D 7745](#)