HAWE HYDRAULIK

Directional seated valve bank type VB

The valve bank type VB consists of a connection block (with ports P and R), the directional seated valves (acc. to D 7300) installed on sub-plates and connected in parallel plus the end plate. The whole valve bank is held together with one or two tension rods.
Depending on the type of sub-plate differing flow pattern of the valves mounted on them are possible as well as optional functions e.g. pressure switches for the consumer port may be incorporated in these sub-plates.
These valve banks may be either directly connected to a pipe system via the connection block or installed directly onto hydraulic power packs (type HK, HC, MP, FP, and R) utilizing an adapter plate.

Various end plates featuring e.g. pressure switch for gallery P or accumulator drain valve widen the field of application for this valve banks.
All this, together with our hydraulic power packs enables hydraulic control systems for high pressure applications with low spatial requirements.

Nomenclature:	Directional seated valve, zero leakage
Design:	Valve bank • For pipe connection • Combination with hydraulic power packs
Actuation:	Solenoid Pressure • Hydraulic • Pneumatic Manual • Hand lever • Turn knob
p_{max}:	500 ... 700 bar
Q_{max}:	6 ... 120 lpm

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Basic types and general parameters

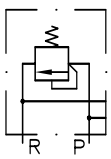
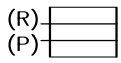
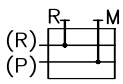
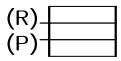
Basic type and size	Flow Q_{max} (lpm)	Oper. pressure p_{max} (bar) with actuation: Solenoid actuated M	Pressure actuated H	Pressure actuated P	Manually actuated F	Manually actuated D	Tapped ports (BSPP) P, R, A, B
VB 01	6	300 ... 500	500		350 ... 500		G 1/4
VB 11	12	350 ... 500(700)	500 ... 700		400 ... 700		G 1/4 and G 3/8
VB 21, 22	25	350 ... 500(700)	500		400 ... 500		G 3/8 and G 1/2
VB 31	65	350 ... 400	400		---		G 1/2 and G 3/4
VB 41	120	350	---		---		G 3/4 and G 1

Order coding example

VB11 F M - DCNR5 - 1 - WG230

- WG230: Solenoid voltage
- 1: Port size, here G 1/4 (BSPP)
- DCNR5: Valve section
- M: Actuation
- F: Connection block / adapter
- VB11: Plate, basic type and size

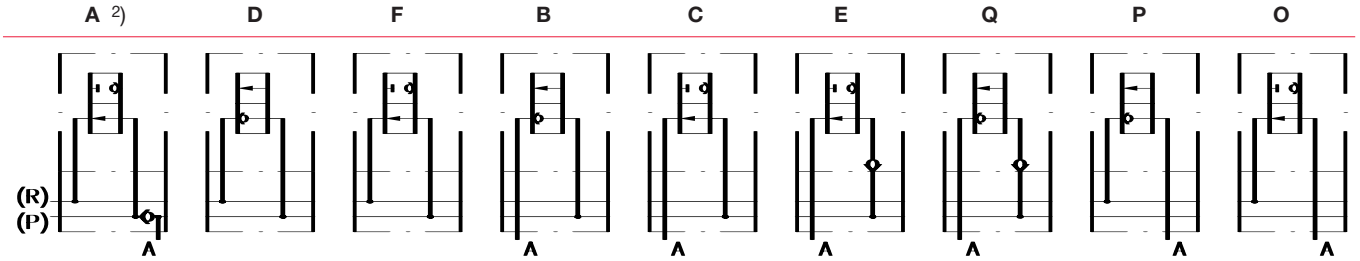
Connection blocks / adapter plates

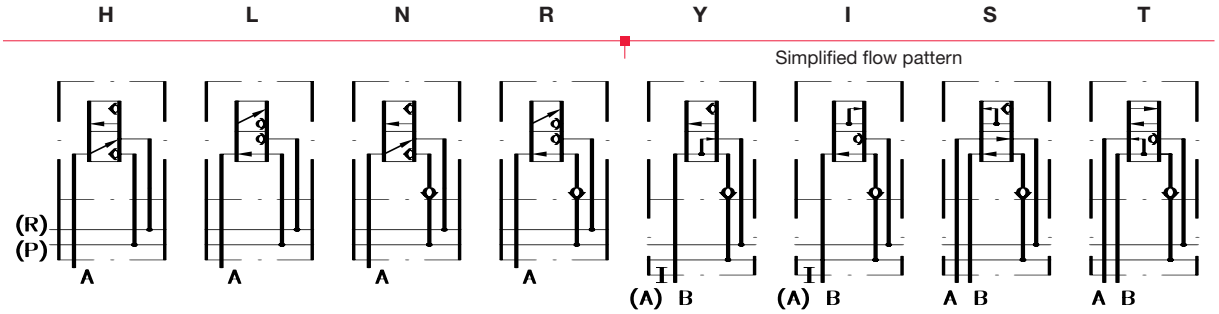
Basic type	Brief description	Symbol
A .-1/..	For pipe connection, with tool adjustable pressure limiting valve (/..- pressure specification in bar)	
C, D, E	For mounting onto hydraulic power packs type R, Z and RZ, depending on tank and size [1]	
F, G	For mounting onto hydraulic power packs type HK, HC, MP, FP) (also in combination with two stage valve type NE) [1]	F  G 

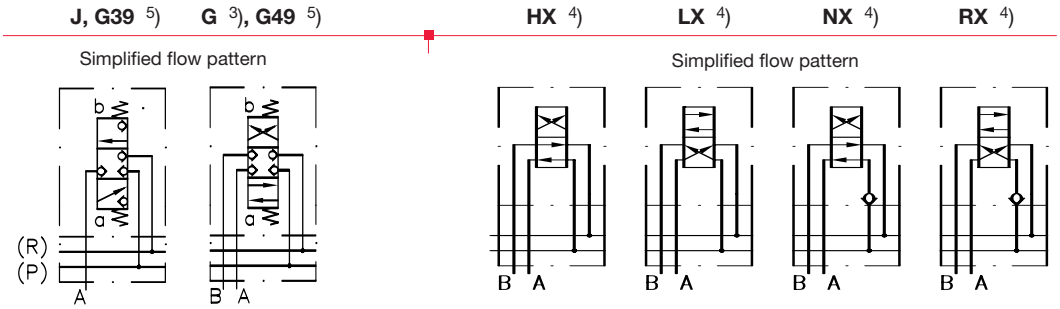
[1]) See also “Additional information”

Symbols (valve section)

max. 12 valve sections may be combined in a valve bank (depending on size), actuation symbol to be added



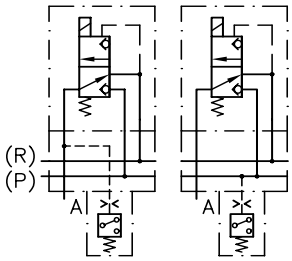




2) Not available for VB 01
VB 11 only with tapped ports G 1/4 (BSPP)
3) Not available for VB 41
4) Only available for VB 11
5) Only available for VB 21, 22

Options for the valve section (only for type VB01 and VB11)

Pressure switches in gallery P or the consumer port

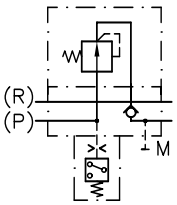


Example: ... **H5** ...
Flow pattern H with DG 35
in the consumer port

Example: ... **H8** ...
Flow pattern H with DG 35
in the gallery P

The pressure switches type DG 3.. are directly mounted at the sub-plate 6)

Pressure reducing valve, reducing the pressure in the subsequent P gallery



Example: **... - CZ1/200/5R/3 - ...**
2-way pressure reducing valve type
CDK 3, factory set to 200 bar, with check valve and pressure switch type DG 33 in the gallery P 6)

6) See also “Additional information”

Additional versions (valve section)

- Individual valve with orifice in the gallery P and/or return pressure stop in the return gallery
- Sub-plate with 2-way flow control valve, by-passing to the tank (only with type VB 31)
- Sub-plate with pressure switch (only with type VB 01, VB 11, VB 22)
- Sub-plate with pressure limiting valve and throttle (only with type VB 21, VB 31)
- Sub-plate with idle circulation and/or shuttle valve for type VB 22
- Intermediate plate for VB 22 (series connection) with pressure reduction in gallery P or thrattle valve in port A

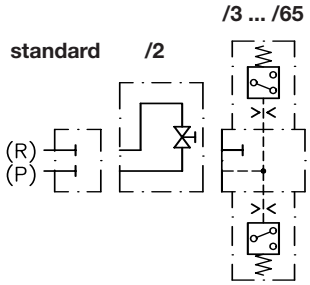
Solenoid voltage

- 12V DC, 24V DC, 230V AC 50/60 Hz
- Other voltage on request
- Plug with LED, improving EMC, or with economy circuit [8])
- Other actuations (pressure and mechanical) analogous to "Directional seated valves with various actuations" (see also section "Additional information")

End plates

Basic type	Brief description
without coding	Standard end plate
/2 [7])	End plate with accumulator drain valve
/3 ... /65 [7])	End plates with one or two pressure switches type DG 3.. [8])

Symbol



Additional versions (end plates)

- End plates with accumulator drain valve and pressure switches type DG 3.. [8])

[7]) Only with type VB01 and VB11
[8]) See also "Additional information"

Order examples

VB01FM-E H3 G33/3 - 1 - G24

Valve bank type VB 01, size 0 with connection block for direct mounting onto hydraulic power packs, flow pattern E, H, G (G with pressure switches DG 33 in the consumer ports A and B), end plate /3 (with DG 33), tapped ports G 1/4 (BSPP) (coding 1) and solenoid voltage 24V DC

VB 11AM - 2/420 - R H S3/3 - 1 - WG230

Valve bank type VB 11, size 1 with connection block for pipe connection and integrated, manually adjustable pressure limiting valve (factory set to 420 bar), flow pattern D, H, S and end plate with one pressure switch DG 33, tapped ports G 1/4 (BSPP) (coding 1), solenoid voltage 230V AC 50/60 Hz

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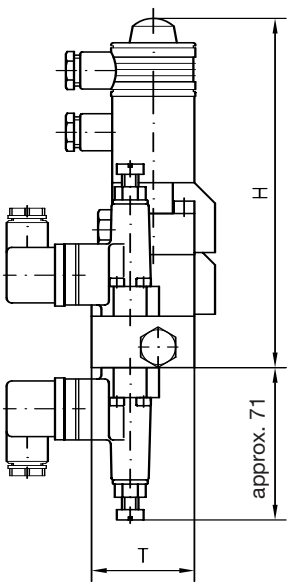
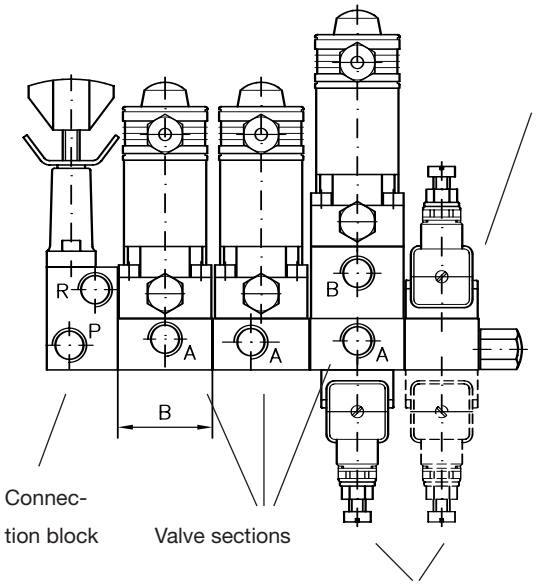
Dimensions

(acc. to the order example on the right side)





End plate (here with pressure switches)

Basic type	H	B	T	m (kg) per indiv. section
VB 01	110 ... 135	38	40	0.6 ... 1.25
VB 11	139 ... 174	46	50	1.1 ... 2.3
VB 21, 22	180 ... 220, 172 ... 221	58, 58	63, 70	2.0 ... 4.6, 2.2 ... 4.8
VB 31	202 ... 252	72	80	4.5 ... 9.1
VB 41	265 ... 312	82	100	8.9 ... 14

All dimensions are in mm, subject to change without notice!

Example circuit

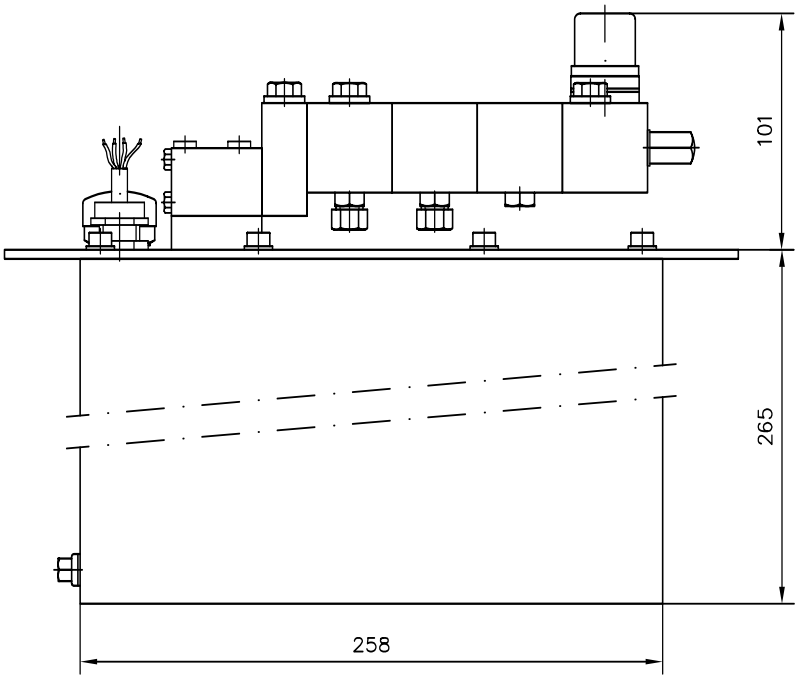
MP 24 - H1,39/B5 - A1/300 - VB01 FMH - FR/N/32 - 1 - WG230

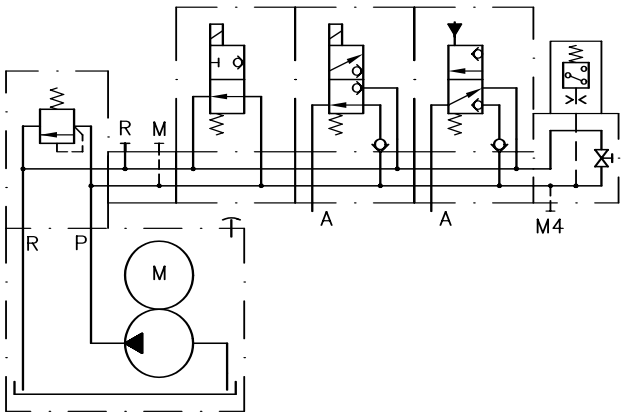
Hydraulic power pack type MP size 2, connection block with pressure limiting valve (tool adjustable)

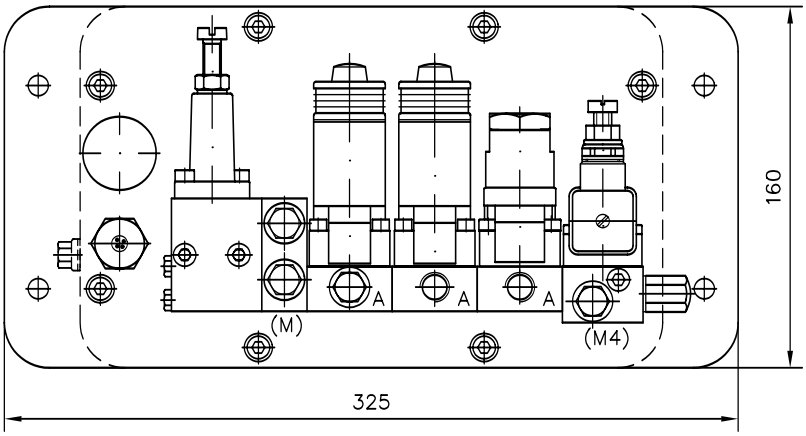
Valve bank type VB size 0 with three valve sections (different actuations for the directional valves, here M (solenoid) and H (hydraulical)) and end plate here 32 with pressure switch and drain valve

Main parameter of the example circuit

p_{system} = 300 bar
(set pressure of the pressure limiting valve)
Q_{pu} = approx. 1.39 lpm at 1450 rpm
$p_{max\ pu}$ = 400 bar
Tank V_{usable} = approx. 6 l
V_{total} = approx. 7.7 l







R = Return port
M, M4 = Pressure pick-up for e.g. pressure gauge or pressure switch
A = Consumer port

Additional information

- Directional seated valves with various actuations D 7300
- Valve banks type VB D 7302
- Compact hydraulic power packs
  - type MP, MPN, MPNW, MPW D 7200, D 7200 H, D 7207
  - type HC, HCW, HCG D 7900, D 7900 G
  - type HK, HKF, HKL D 7600 ++
  - type FP D 7310
- Hydraulic power packs type R D 6010, D 6010 H
  - type RZ D 6910, D 6910 H
  - type Z D 6820
- Connection blocks type A D 6905 A/1
- Two-stage valves type NE D 7161
- Plug with LED etc. D 7163
- Plug with economy circuit D 7813
- Pressure switches type DG3.., DG5E D 5440, D 5440 E/1
- Pressure reducing valves type CDK D 7445
- See also section “Devices for special applications” (Devices for up to 700 bar)
- See also “Turn-key solutions out of the modular system”

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