Directional seated valves

www.khadamathydraulic.com
Tell: 021-55882749
Tell: 021-33488178
Fax: 021-33488105

2.2 Valve bank (directional seated valve) type VB

A valve bank combines different valves for operating independent consumers.
The valve bank type VB comprises several directional seated valves of type G, WG among others that are connected in parallel. The directional seated valves as ball valves have zero leakage in the closed state. They are attached to sub-plates. These sub-plates are clamped between the inlet section (P and R port) and the end plate via tension rods. Pressure switches or pressure-limiting valves can be integrated into the pumps and/or consumer lines.
2/2 and 3/2- 4/2, 3/3 and 4/3 directional seated valves are available with different types of actuation. The valve bank can be mounted directly to compact hydraulic power packs using connection blocks.

Features and benefits:

- Compact hydraulic controls for high pressure
- Combination with compact hydraulic power packs result in cost efficient turn-key solutions
- Elimination of time-consuming installation due to combination with hydraulic power packs
- Simple repairs thanks to modular structure of the systems

Intended applications:

- Machine tools (chipping and non-chipping)
- Clamping, punching and jigs
- Rubber and plastics machinery
- Oil hydraulics and pneumatics

Nomen-clature:	Directional seated valve, zero leakage
Design:	Valve bank for pipe connection
Actuation:	Solenoid Pressure: Hydraulic, Pneumatic Manual: Hand lever, Turn knob
p_{max}:	700 bar
Q_{max}:	120 l/min

Design and order coding example

VB12 | F | M | DCNR5 | 1 | WG230

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

Port size G 1/4 (1), G 3/8 (2), G 1/2 (3) (BSPP)

Valve sections Symbols: 2/2-way directional valve, 3/2-way directional valve, 3/3-way directional valve, 4/3-way directional valve, 4/2-way directional valve

Valve section options

- Pressure switch for P or the consumer side
- Pressure reducing valve reducing the pressure in the downstream gallery P
- Orifices in gallery P and/or return pressure stop in gallery R

Sub-plates

- With 2-way flow controller by-passing to the tank
- Pressure reducing valve reducing the pressure in the downstream gallery P
- With pressure limiting valve and throttle
- With idle circulation valve and/or shuttle valve

Intermediate plates

- With pressure reduction for gallery P or throttle for port A (parallel connection)

Actuation

Connection block/adapter plate

- For pipe connection
- For direct mounting at compact hydraulic power packs
- For direct mounting at hydraulic power packs

Basic type, size Type VB size 01, 12, 21, 22, 31, 41

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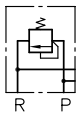
Function

Connection blocks:

A .-1/..



For pipe connection, with fixed 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

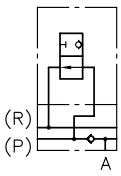
F

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

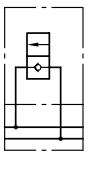
G

Valve sections:

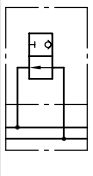
A



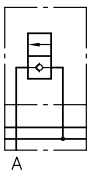
D



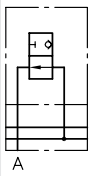
F



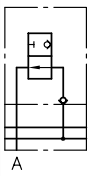
B



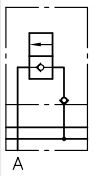
C



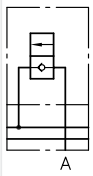
E



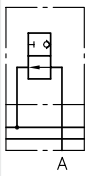
Q



P

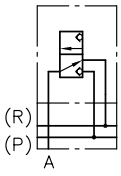


O

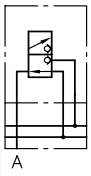


- A not for VB 01, VB 11 only with tapped ports G 1/4

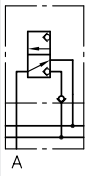
H



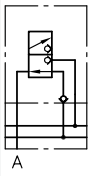
L



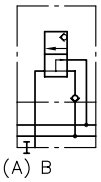
N



R

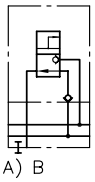


Y

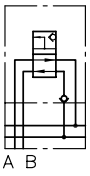


Simplified flow pattern

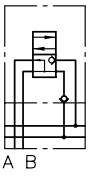
I



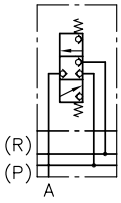
S



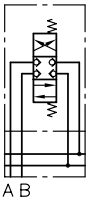
T



J, G39

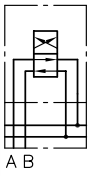


G , G49

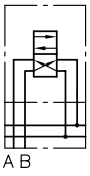


Simplified flow pattern

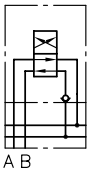
HX



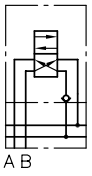
LX



NX



RX



Simplified flow pattern

- J, I, Y, S, T, G39, G49 only available for VB 21, 22
- G not available for VB 41
- HX, LX, NX, RX only available for VB 11

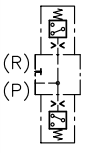
End plates:

Standard end plate

/2

End plate with accumulator drain valve

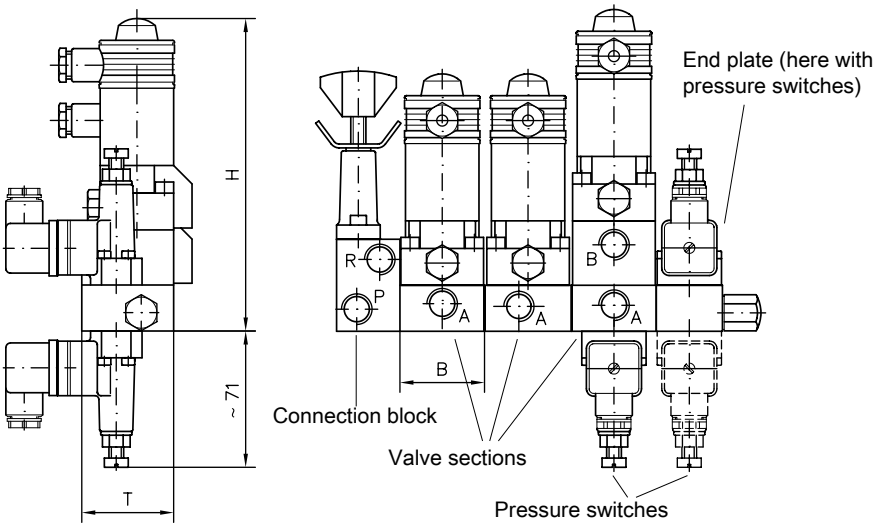
/3 ... /65



End plates with one or two pressure switches type DG 3..

- /2, /3 ... /65 only available for VB01 and VB11

General parameters and dimensions



1 Connection block
2 Valve sections
3 Pressure switches
4 End plate (here with pressure switches)

	Q_{max} [lpm]	p_{max} [bar]					Ports	Dimensions [mm]			m [kg]
		Solenoid	Pressure		Manual						per valve section
		M	H	P	F	D	P, R, A, B	H	B	T	
VB 01	6	300 ...- 500	-	500	-	500	G 1/4	110 ... 135	38	40	0.6 ... 1.25
VB 12	12	350 ... 500 (700)	500 ... 700		400 ... 700		G 1/4 and G 3/8	139 ... 174	46	50	1.1 ... 2.3
VB 21	25	350 ... 500 (700)	500		400 ... 500		G 3/8 and G 1/2	180 ... 220	58	63	2.0 ... 4.6
VB 22	25	700						172 ... 221	58	70	2.2 - 4.8
VB 31	65	350 ... 400	400		-	350	G 1/2 and G 3/4	202 ... 252	72	80	4.5 ... 9.1
VB 41	120	350	-		-		G 3/4 and G 1	265 ... 312	82	100	8.9 ... 14

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Circuit example:

MP24A - H1.39/B5 - A1/300

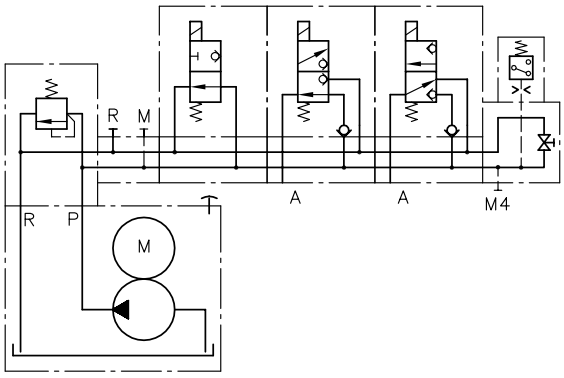
Compact hydraulic power pack type MP size 2, connection block with pressure limiting valve (tool adjustable)

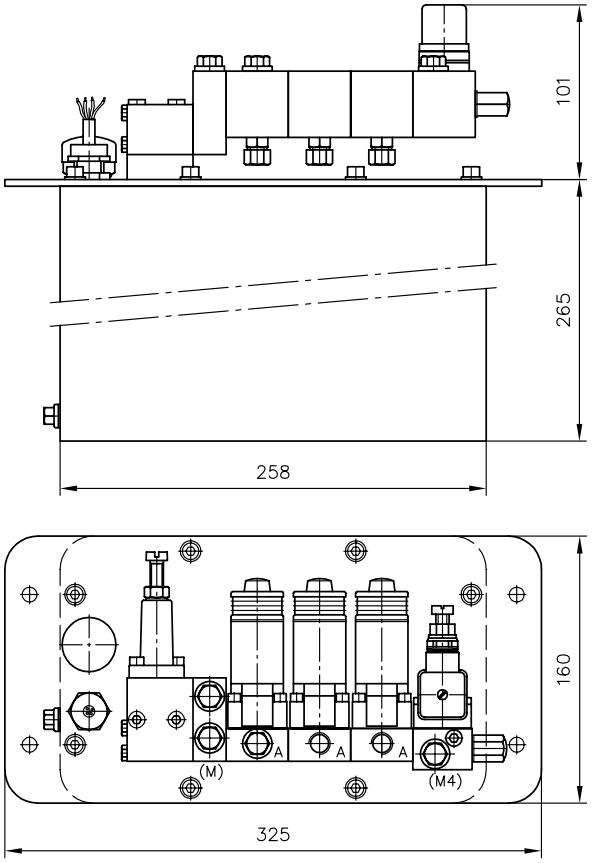
- VB01FM - FRN/32 - 1 - WG230

Valve bank type VB size 0 with 3 valves (actuation type M (solenoid), solenoid voltage 230V 50/60 Hz) and end plate. Here 32 with pressure switch and drain valve

Parameters of the circuit example:

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





Suites compact hydraulic power packs:

- Type MP, MPN, MPNW, MPW: Page 50
- Type HC, HCW, HCG: Page 42
- Type HK, HKF, HKL: Page 54
- Type NPC: Page 40
- Type KA, KAW: Page 46
- Connection blocks type A: Page 62

Suites hydraulic power packs:

- Standard power pack FXU with pumps R, RG, RZ: Page 58

Corresponding pamphlets (data sheets):

- Valve bank (directional seated valve) type VB: D 7302

Suited valves:

- Directional seated valves with various actuations: Page 108

Accessories:

- Pressure switches type DG 3.., DG 5 E: Page 262
- Pressure reducing valves type CDK: Page 180

Male connectors:

- Line connector type MSD and others: D 7163
- Economy circuit type MSD: D 7813, D 7833