

## Valve bank type BA

Thanks to the identical flange pattern of type BA sub-plates, they can be combined very flexibly with type A.. connection blocks. On the pump side, this enables direct mounting (without intermediate plate) to the connection blocks of the compact hydraulic power packs. Directional seated valve banks and directional spool valve banks (e.g. type BWN, BWH, BVH, VB, BVZP, SWR, SWP and SWS) can be flanged to the valve section side. Valves and intermediate plates with standard connection patterns (type NSMD2, NSWP2, NBVP16, NBMD16, NG...-1, NZP16) can be mounted individually. Additional functions for the pump or consumer side (e.g. throttle and throttle check valve, pressure-reducing valve or pressure switch) enable flexible adaptation to changing operating conditions. Hydraulic clamping systems (e.g. in machine tools) with the associated wide range of requirements are the typical application areas.

### Features and benefits:

- Sub-plates for flexible combination with directional valve types with NG6 (CETOP) standard connection pattern
- Valve bank can be flanged directly to the connection block of a compact hydraulic power pack or connected as a separately arranged valve bank for pipe connection
- Pressure switches and/or any other monitoring elements can be connected directly
- Additional elements, such as orifices, throttles and check valves for P, R, A and B connections can be integrated
- Diaphragm accumulator can be mounted directly

### Intended applications:

- Clamping systems on machine tools and equipment
- Process control on deforming machine tools
- Brake and rotor adjustment modules on wind turbines



<b>Nomenclature:</b>	Sub-plates/directional seated valve, zero leakage
<b>Version:</b>	Valve section with sub-plates for pipe connection
<b>Actuation:</b>	Solenoid Pressure-operated <ul style="list-style-type: none"> <li>■ Hydraulic</li> <li>■ Pneumatic</li> </ul> Manual Mechanical <ul style="list-style-type: none"> <li>■ Pin</li> <li>■ Roller</li> </ul>
<b>p<sub>max</sub>:</b>	400 bar
<b>Q<sub>max</sub>:</b>	20 lpm

## Design and order coding example

BA2 A5	NBVP16 NBVP16 NSWP2	S G G	O B0,8 R B0,6 R	/ABR2,0/BBR1,5 /ABR1,0/BBR1,5	/A3B9/400 /50	/S /S	/0	- 1	- G24
									<b>Solenoid voltage</b> 12V DC, 24V DC, 230V AC, 110V AC <b>End plate</b> <ul style="list-style-type: none"> <li>■ Drain valve with/without pressure switches</li> <li>■ with one or two accumulator ports with/without release valve and/or with/without drain valve</li> </ul> <b>Sub-plate</b> <ul style="list-style-type: none"> <li>■ Check valves with release</li> <li>■ Throttle</li> <li>■ Additional pressure gauge connections</li> </ul> <b>Additional elements in R</b> Return pressure stop <b>Pressure switch/pressure gauge</b> in A and/or B <b>Additional elements in A, B</b> Throttle check valve in A and/or B Throttle valve in A and/or B <b>Additional elements in P</b> Check valve Orifice <b>Switching symbol of the directional valve</b>
<b>Valve sections</b>	<b>Directional valves</b> <ul style="list-style-type: none"> <li>■ Type NSMD2, NSWP2, NBVP16, NBMD16, NG..-1, NZP16</li> </ul> <b>Intermediate plates for series connection</b> <ul style="list-style-type: none"> <li>■ Type CZ: with pressure-reducing valve in P gallery</li> </ul> <b>Intermediate plates for parallel connection type NZP</b> <ul style="list-style-type: none"> <li>■ with throttle and/or throttle check valves</li> <li>■ with pressure-reducing valves</li> <li>■ with short-circuit and by-pass valves</li> <li>■ for random switching of a 2nd speed</li> </ul>								
<b>Connection block</b>	<ul style="list-style-type: none"> <li>■ Direct mounting onto type A, AF etc. connection blocks (for type KA, MP, MPN, HC, HK(F), HKL compact hydraulic power packs)</li> <li>■ Variant for pipe connection with/without pressure-limiting valve (A5)</li> </ul>								

**Function**
**Connection blocks/adaptor plates:**
**BA2 ..**

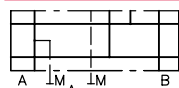
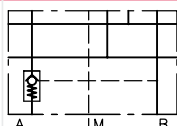
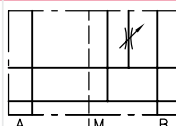
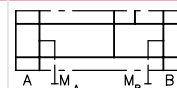
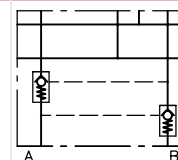
Direct mounting onto type A, AF etc.  
 connection blocks at type KA, MP, MPN, HC,  
 HK(F), HKL compact hydraulic power packs

**BA2 A5**

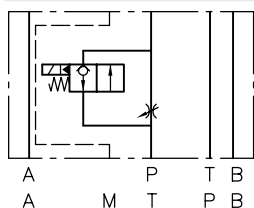
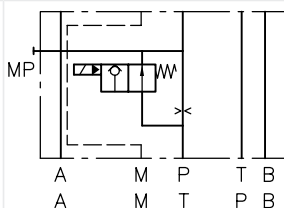
Version for pipe connection without  
 pressure-limiting valve


**BA2 A8**

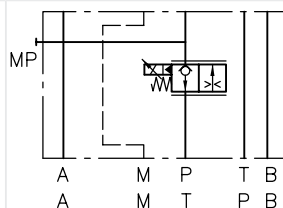
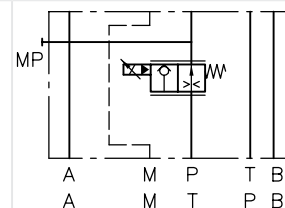
Like version BA2 A5 but with check valve in R


**Sub-plates for plate assembly valve**
**BA2.../0**

**BA2../1**

**BA2../2**

**BA2../3**

**BA2../5**

**Additional options for the valve sections:**

Intermediate plates for 2nd speed with orifice/throttle in P and  
 T gallery

**/NZP16(T)V/P(T)Q20...**

**/NZP16(T)S/P(T)B...**


Intermediate plate for variable speed adaptation  
 via proportional throttle in P and T gallery

**/NZP16(T)VP**

**/NZP16(T)SP**


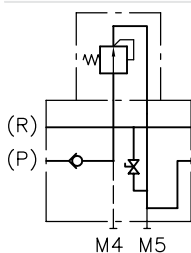
Example: .../NZP16TV/TB1.0/...

Type B1.0 orifice and type EM21V by-pass valve in T gallery

Example: .../NZP16VP/...

Type EMP21V proportional throttle valve in P gallery

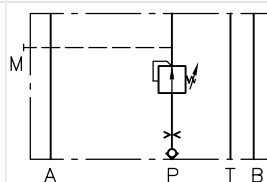
Intermediate plate (series connection) with pressure-reducing  
 valve for pressure reduction of the subsequent P gallery

**.../CZ...**


Example: BAZ-CZ2/180/5R

Type CDK3 pressure-reducing valve set to 180 bar with check valve

Intermediate plates (parallel connection)  
 with pressure-reducing valve in P gallery

**.../NZP16(26)CZ...**




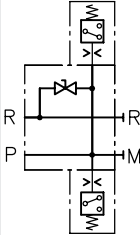

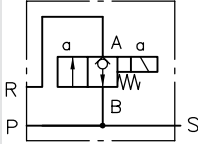
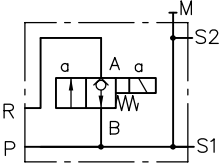
Example: .../NZP16CZ08/350/B0.8R/...

Type CDK0.8 pressure-reducing valve set to 350 bar with orifice and  
 check valve in P gallery

Actuations:

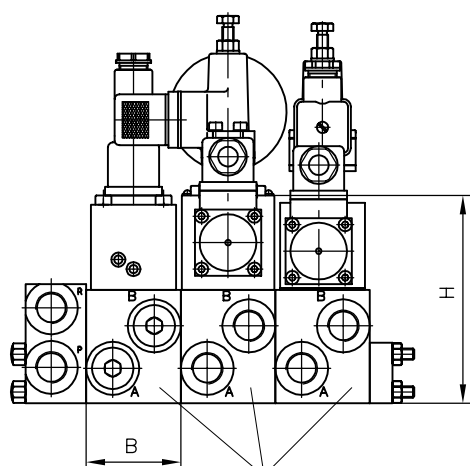
M:	Solenoid actuation ( $p_{max}= 400\text{ bar}$ )	P:	Pneumatic
GM:	Solenoid actuation ( $p_{max}= 250\text{ bar}$ )	A:	Manual actuation
H:	Hydraulic actuation	T:	Pin
		K:	Roller

End plates

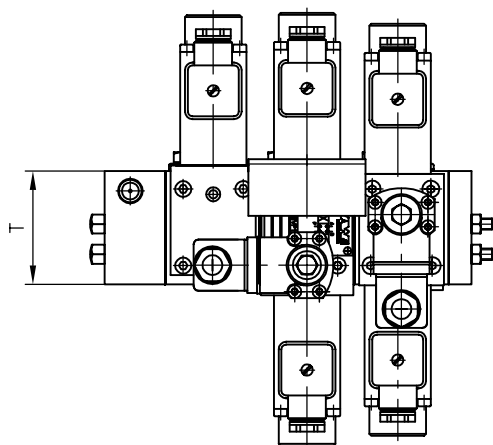
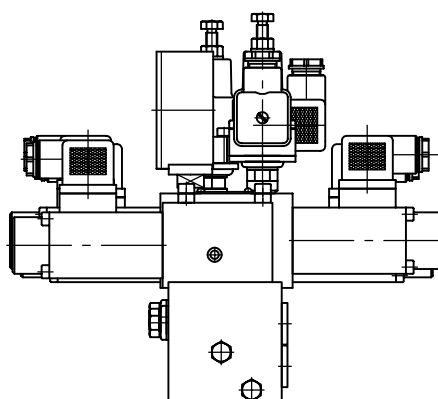
-1	-6	-422	-8	-80/-8W	-880(88W)/...
Series	with drain valve	with drain valve and pressure switches	with accumulator port and drain valve	with accumulator port and release valve	with two accumulator ports and release valve
					

# General parameters and dimensions

BA



Unterplatten Typ BA2



	$Q_{\max}$ [lpm]	$p_{\max}$ [bar]	Ports (BSPP)	Dimensions [mm]			m [kg]
			A, B, P, R, M	H	B	T	Valve section
BA2	20	400	G 1/4, G 3/8	139	50	60	0,8

### Example circuit:

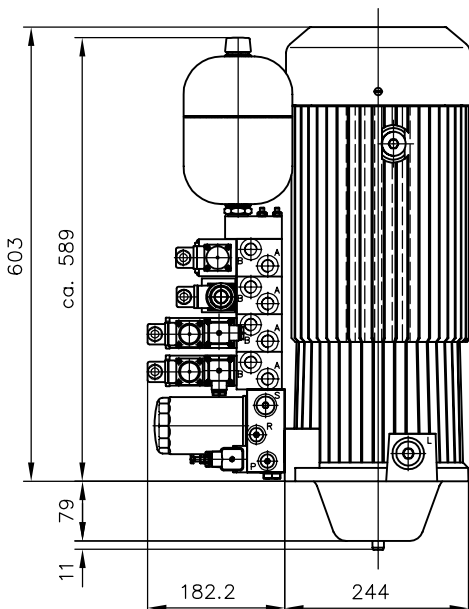
HK 449 LDT/1 - Z16

- AL21R F2 - F/50/60 - 7/45

Type HK compact hydraulic power pack size 4;  
connection block with accumulator  
charging valve, setting: 50 bar,  
pressure-limiting valve,  
setting: 60 bar,  
filter and pressure switch,  
setting: 45 bar

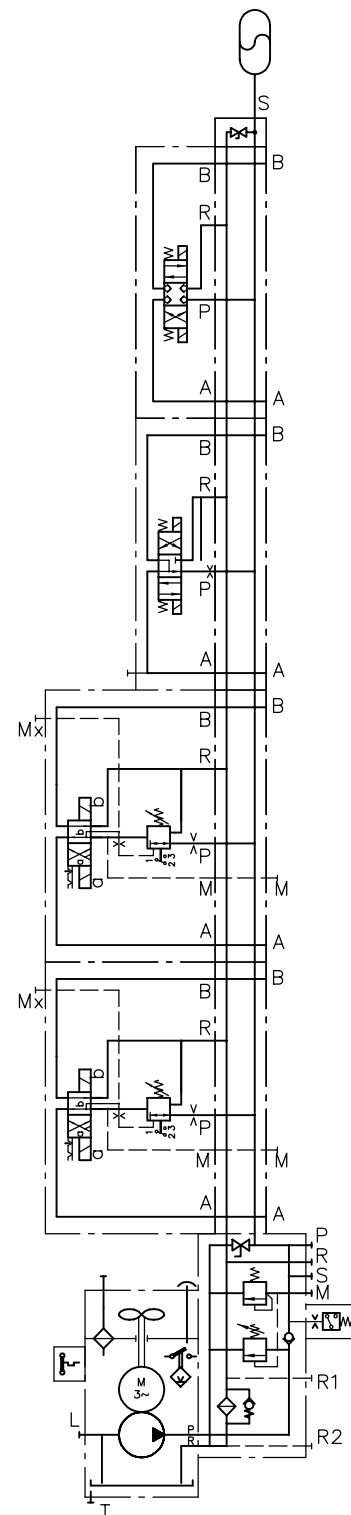
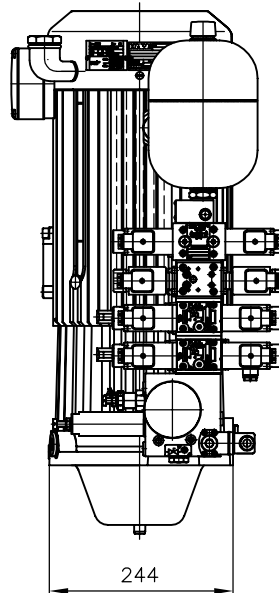
### Parameters of the example circuit:

- $Q_{Pu} = 16 \text{ lpm}$  (at 1450 rpm)
- $p_{\max Pu} = 110 \text{ bar}$
- $p_{\text{system}} = 60 \text{ bar}$   
(pressure-limiting valve setting)
- $p_{\text{switch-off feature}} = 50 \text{ bar}$
- $V_{\text{load}} = \text{approximately } 5 \text{ l}$



- BA2
- NSMD2W/GRK/B2.0/0
- NSMD2W/GRK/B2.0/0
- NSWP2D/B2.0/20/1
- NBVP16G/0
- 8 - AC2001/35 - L24

Type BA2 valve bank with four industrial standard valves mounted on sub-plates, two clamping functions for work piece clamping with combined option to adjust pressure and pressure switches, two additional functions for indexing and tool clamping



### Associated technical data sheets:

- Type BA directional control valve banks: [D 7788](#)
- Type NZP intermediate plates: [D 7788 Z](#)

### Suitable connection block:

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

### Suited products for combination:

- Type NSMD clamping modules: [D 7787](#)
- Type NSWP directional spool valves: [D 7451 N](#)
- Type NBVP directional seated valves: [D 7765 N](#)

### Suitable accessories:

- Type DG pressure switches: [D 5440](#)
- Type AC diaphragm accumulators: [D 7969](#)

### Suitable plugs:

- with LEDs or to support the EMC or with features including economy circuit: [D 7163](#)