

Valve bank type BA

The sub-plates type BA show the identical connection hole pattern as the connection blocks (type A...) for the compact hydraulic power packs. This enables direct mounting without any adapter plate. The connection hole pattern downstream is suited to add-on all other type of valve banks (directional seated and spool valves) e.g. type BWN, BWH, BVH, VB, BVZP, SWR, SWP and SWS).

Valves with industrial standard connection pattern type NSMD2, NSWP2, NSVP16, NSMD16, NG..-1, NZP16) may be combined with valve sections type BV (2/2-, 3/2, 3/3, 4/3-, and 4/4-way functions). The valve blocks may be optionally equipped with additional functions on the pump or consumer side (e.g. throttle, restrictor

check valve, releasable check valve or manually adjustable pressure reducing valve or pressure switch/gauge) to suit changing requirements. The preferential field of application are machine tools with their various requests.



Nomenclature: Sub-plates / directional seated valve, zero leakage

Version: Valve section with sub-plate for pipe connection

Actuation: Solenoid
Pressure actuation

- Hydraulic
- Pneumatic

Manual
Mechanical

- Pin
- Roller

P_{max} : 400 bar

Q_{max} : 20 lpm

Basic types and general parameters

Basic type and size	Delivery flow Q_{max} (lpm)	Pressure p_{max} (bar)	Ports A, B, P, R, M (BSPP)	Nomenclature
BA2	20	400	G 1/4, G 3/8	Sub-plate

Order coding example

BA2 A5 - NBVP16 S/0 ———— Manifold mounting valve with sub-plate

- NBVP16 G/B0,8R/ABR2,0/BBR1,5/A3B9/400 /S /0

- NSWP2 G/B0,6R/ABR1,0/BBR1,5/50 /S /0 -1 - G24

Basic type and size

Flow pattern symbol

Additional elements

P, A, and B

Pressure switch/pressure gauge

at A and/or B

Solenoid voltage

End plate

Sub-plate

Additional elements at R

Connection blocks/adapter plates

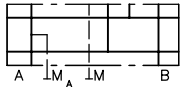
Basic type	Brief description	Symbol
BA2..	Direct mounting onto connection blocks type A, AF etc. at compact hydraulic power packs type KA, MP, MPN, HC, HK(F), HKL	
BA2 A5	Version for pipe connection without pressure limiting valve	
BA2 A8	Like version BA2 A5 but with check valve in R	

Symbols

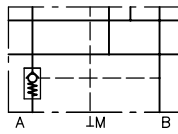
max. 12 valve sections can be combined

Sub-plate for manifold mounting valves

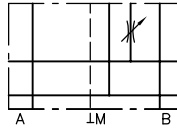
BA2.../0



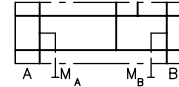
BA2.../1



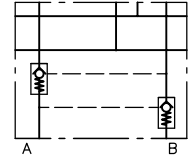
BA2.../2



BA2.../3



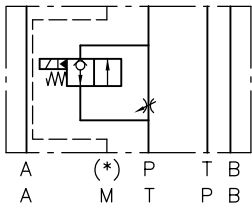
BA2.../5



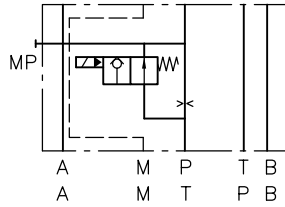
Additional options for valve sections

Intermediate plates for 2nd speed with orifice/throttle in port P, T

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

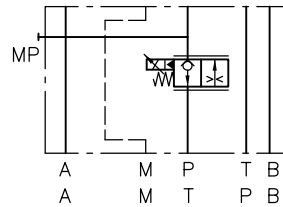


/NZP16(T)S/P(T)B...

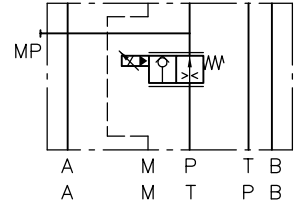


Intermediate plate for variable speed adaptation via proportional throttle in port P, T

/NZP16(T)VP



/NZP16(T)SP

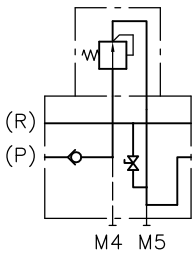


.../NZP16TV/TB1,0/...

Orifice type B1,0 and by-pass valve type EM21V in port T

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

.../CZ...

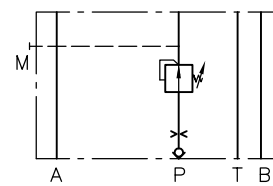


.../NZP16VP/...

Proportional throttle valve type EMP21V in port P

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

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



BAZ-CZ2/180/5R

Pressure reducing valve for pressure reduction in the pump gallery downstream

.../NZP16CZ08/350/B0,8R/...

Pressure reducing valve type CDK 0.8 adjusted to 350 bar with throttle and check valve in gallery P

Additional versions (valve sections)

Series connection

- Intermediate plate as spacer for one valve section (serial connection) with/without ports for pressure gauge at P and R
- Intermediate plate with additional ports P and R
- Intermediate plate with pressure limiting valve, drain valve and accumulator port
- Blanking plate a orifice for ports P and R

Parallel connection

- Intermediate plate with pressure reducing valve, with/without pressure limiting valve
- Intermediate plate with proportionally adjustable pressure reducing valve
- Intermediate plate with throttle/restrictor check valve in A and/or B
- Intermediate plate with pressure reducing valve with/without tracked pressure switch for port A or B
- Intermediate plate with drain valve at ports A and B

Actuations

- M: Solenoid actuation ($p_{max} = 400$ bar)
- GM: Solenoid actuation ($p_{max} = 250$ bar)
- H: Hydraulic actuation

- P: Pneumatic actuation
- A: Manual actuation
- T: Pin
- K: Roller

Solenoid voltage

- 12V DC, 24V DC, 230V AC 50/60 Hz
- Further voltages on inquiry

- Plug with LEDs for improving the EMC or with economy circuit (see also "Further information")

End plates

Basic type	Brief description	Symbol
-1	Standard	-1
-2	with drain valve	-2
-6	with drain valve	-422
-880/EM21D(S)	with two accumulator ports	-6
-88W/EM21D(S)	and release valve	-8
-422	with drain valve and pressure switches	-80
-8	with accumulator port and drain valve	-8W
-80/-8W	with accumulator port	-80/EM21D(S)
-80/EM21D(S)	with accumulator port and	-8W/EM21D(S)
-8W/EM21D(S)	idle circulation valve	

Order example

BA2 A5 - NBVP 16 S/0

NBVP 16 G/B0,8R/ABR2,0/BBR1,5/A3B9/400/S/0

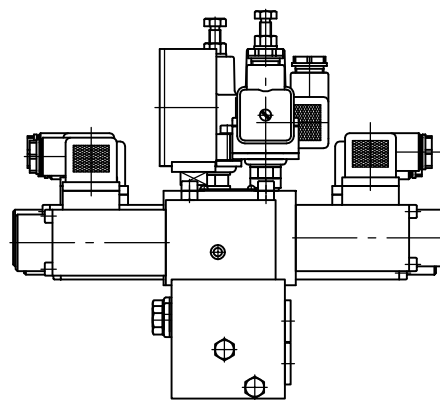
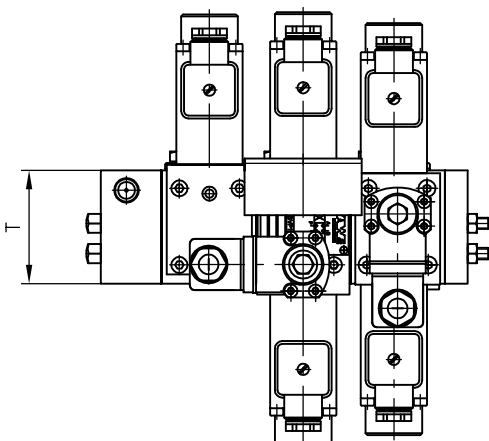
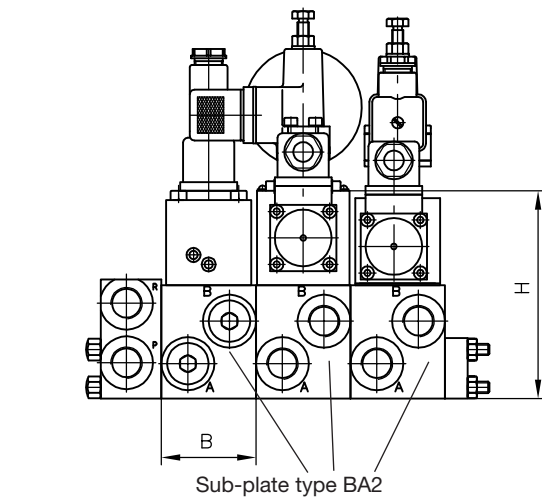
NSWP 2 G/B0,6/ABR1,0/BBR1,5/50/S/1-1-G24

Valve bank type BA2 with connection block A5 for pipe connection without pressure limiting valve.

Valve section 1 with 3/2-way directional seated valve type NBVP16 (NG6), flow pattern symbol S, mounted onto sub-plate (coding /0).

Valve section 2 with 4/3-way directional spool valve type NBVP16 (NG6), flow pattern symbol G, with additional elements, orifice $\varnothing 0,8$ and check valve in port P (coding /B0,8R), restrictor check valve in ports A, B (coding ABR2,0/BBR1,5), pressure switch type DG3 for port A, Pressure gauge till 400 bar for port B (coding /A3B9/400) and return pressure stop (coding /S) mounted onto sub-plate (coding /0).

Valve section 3 with directional spool valve type NSWP2 flow pattern symbol G, with additional elements, orifice $\varnothing 0,6$ in port P (coding /B0,6), restrictor check valve in ports A, B (coding ABR1,0/BBR1,5), pressure switch type DG3 for port A (coding /50) and return pressure stop (coding /S),. mounted on a sub-plate with releasable check valve (coding /1) and end plate (standard coding 1) and solenoid voltage 24V DC.



Dimensions

Basic type	H ¹⁾	B	T	Mass (kg) ¹⁾
BA	139	50	60	0.8

¹⁾ Depending on the mounted valve type and function

Circuit example

HK 449 LDT/1 -Z16 - AL21R F2 - F/50/60-7/45 -BA2 - **NSMD2W/GRK/B2,0/0**
NSMD2W/GRK/B2,0/0
NSWP2D/B2,0/20/1
NBVP16G/0
- 8 - AC2001/35-L24

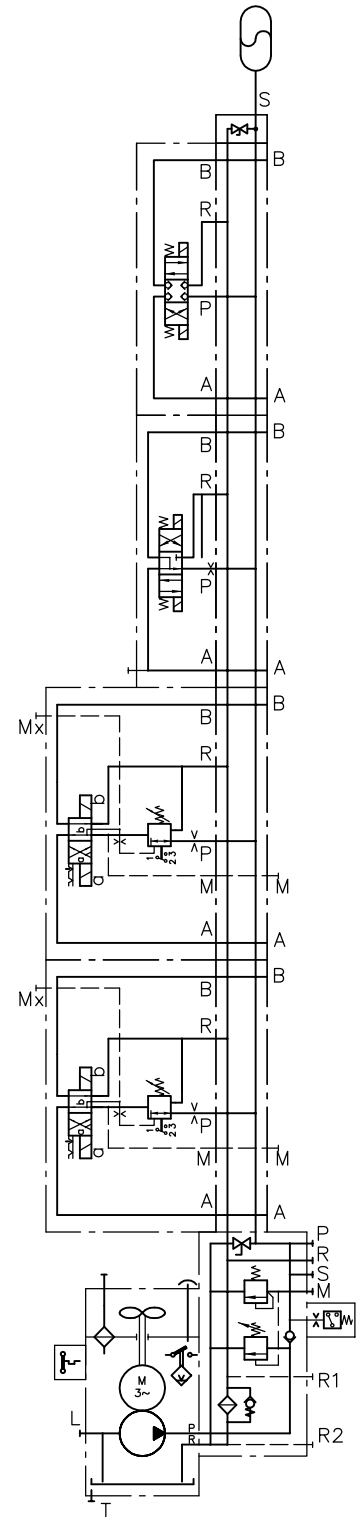
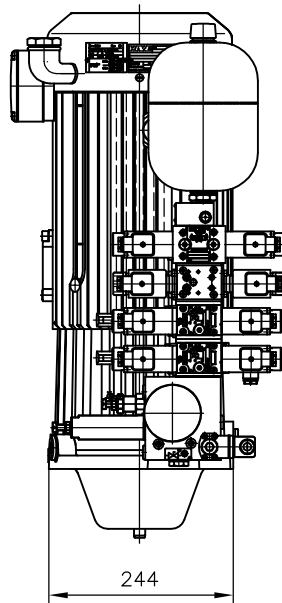
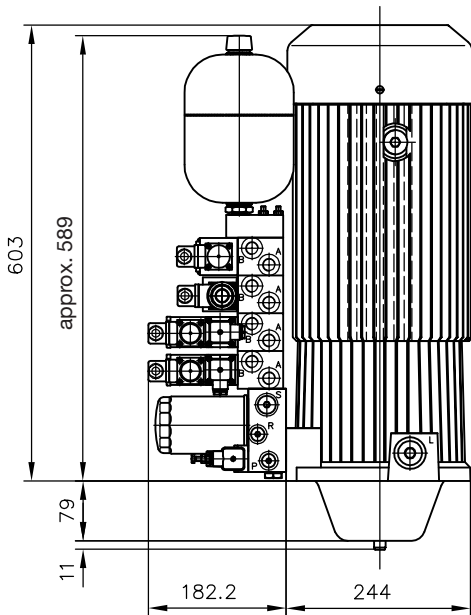
Compact hydraulic power pack type HK
 Size 4; connection block with accumula-
 tor charging valve set to 50 bar, pressure
 limiting valve set to 60 bar,
 filter and pressure switch set to 45 bar

Valve bank type BA2 with a total of
 four industrial standard valves moun-
 ted onto sub-plates, two valves for
 clamping functions for work piece
 together with combined adjustment
 of pressure reduction and pressure
 switch, and two additional functions
 for indexing and toll clamping

Main parameter of the example circuit

- Q_{pu} = 16 lpm (at 1450 rpm)
- p_{max pu} = 110 bar
- p_{system} = 60 bar (setting of the pressure limiting valve)
- p_{shutt-off} = 50 bar
- V_{consum} = approx. 5.0 l

All dimensions in mm, subject to change
 without notice!



Additional information

- Compact hydraulic power packs type FP D 7310
 - type HC D 7900
 - type MP, MPN D 7200, D 7200 H, D 7207
 - type HK, HKL D 7600 ++
 - type KA, KAW D 8010
- Connection blocks type A D 6905 A/1
- Valve banks type BA D 7788
 - type BVH D 7788 BV
- Intermediate plates type NZP D 7788 Z
- Clamping module type NSMD D 7787
- Directional spool valve type NSWP D 7451 N
- Directional seated valve type NBVP D 7765 N
- Valve banks type BVZP D 7785 B
- Directional seated valve type VZP1 D 7785 A
- Valve banks type BWN1, BWH D 7470 B/1
 - type VB01, VB11 D 7302
- Pressure switches type DG 3..., DG 5E D 5440, D 5440 E/1
- Pressure reducing valves type CDK D 7745
 - type DK D 7941
- Slot-type throttle type Q, QR, QV D 7730
- Plug with LED etc. D 7163
- Diaphragm accumulator D 7969
- see also "Complete solutions in the modular system"

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