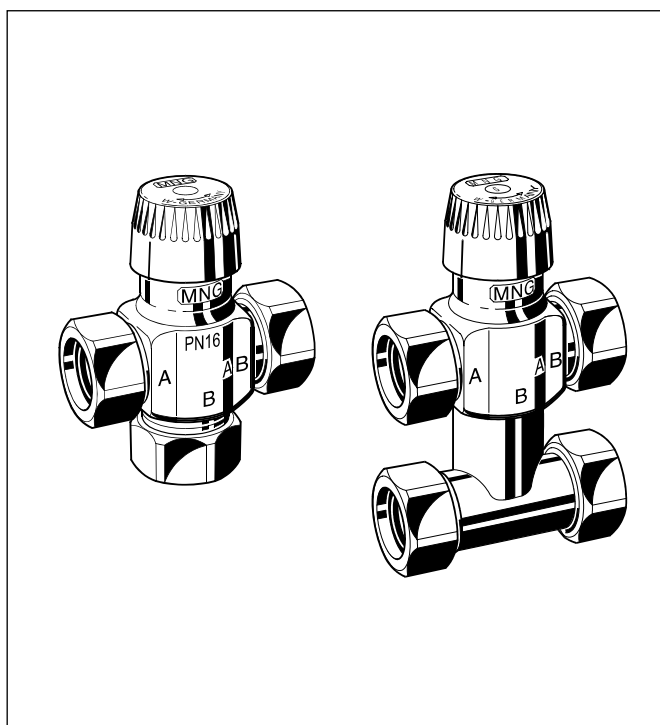


V9020, V9040 Three- and Four-way Valves

CHANGEOVER AND MIXING VALVES PN16, FLAT SEALING

PRODUCT DATA



Design

The valves consist of:

- Valve body PN16, DN10 with 1/2" external threads, DN15 with 3/4" external threads or DN20 with 1" external threads to DIN/ISO 228, flat sealing
- Valve insert
- Connection nuts with sealings
- Protection cap

Materials

- Valve housing made of red bronze
- Valve insert made of brass with spindle made of stainless steel and O-rings and soft seals made of EPDM
- Connection nuts made of brass
- Connection sealings made of EPDM
- Protection cap made of plastic

Application

V9020/V9040 valves are suitable for heating and air conditioning systems. They act as changeover valve in connection with an actuator, for example for boiler priority or demand-switched control of drinking water vessels or heating circuits.

In connection with a constant actuator they act as mixing valve for the control of air-conditioning equipment, fan coil units, two-pipe systems with heat exchanger or for zone control of individual apartments or individual rooms, etc.

A special feature of these valves is the reduction of the k_{vs} -value of the controlled load branch. In this way the pressure loss through the heat load is compensated and the total flow remains almost constant. This ensures that a system can operate quietly and reliably.

A T-piece is available for the three-way valve as accessory.

Features

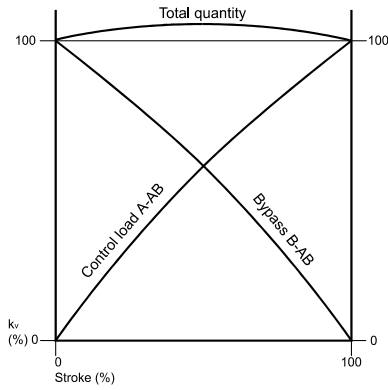
- Reduced k_v -value in the bypass
- Valves with other k_{vs} -value available on request

Specifications

Medium	Water or water-glycol mixture, quality to VDI 2035
pH-value	8...9,5
Operating temperature	2...130°C (26...266°F)
Operating pressure	max. 16 bar (232 psi)
Close-off pressure with 90N actuator	V9020: max. 0,8 bar (11 psi) V9040: max. 1,5 bar (22 psi)
k_{vs} (cv)-values	0,63; 1,00; 1,60; 2,50; 4,00 (0,73; 1,16; 1,86; 2,91; 4,65)
Leakage rate	A-AB: ca. 0,05% of k_{vs} -value B-AB: ca. 0,2% of k_{vs} -value
Rangeability	50 : 1
Stroke	2,9 mm
Starting position	A-AB normally closed, B-AB normally open
Actuator connection	M30 x 1.5

Suitable Actuators

- Honeywell M800 (Eltherm-3) or Z100 for on/off-control
- Honeywell M7410C1007 for floating control
- Honeywell M7410E1002 for modulating control



Function

When the spindle is pressed by the actuator the load A-AB is opened and the bypass B-AB is closed. The spindle returns by spring force.

The pressure loss remains nearly constant over the whole control range. A pressure loss of 30% for the consumer has been taken into account.

Dimensions

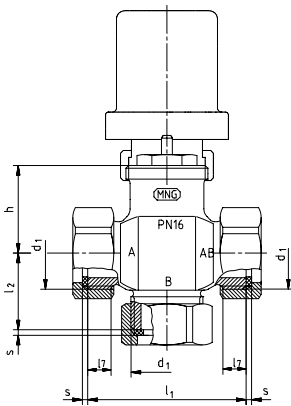


Fig. 1a. Three-way valve

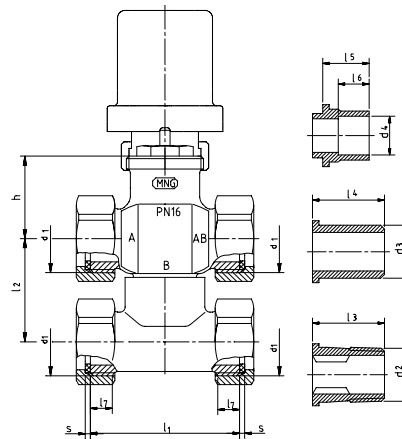


Fig. 1b. Three-way valve with T-piece

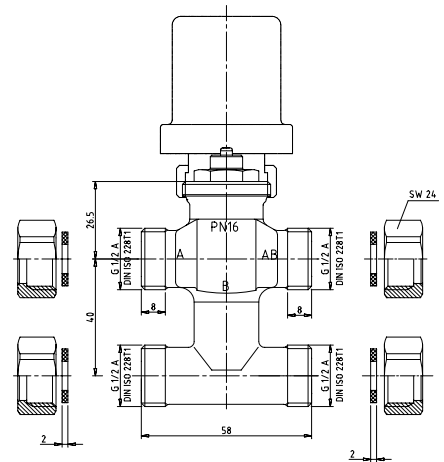


Fig. 2. Four-way valve

DN	d1	h	l1	l2	l3	l4	l5	l6	d2	d3	d4	s
Three-way valves (Fig. 1a)												
15	G3/4"A	32,0	58	28	28	28	18	12	R1/2"	20,5	15	2
20	G1"A	26,5	60	34	30	33	23	17	R3/4"	26,0	22	2
Four-way valves (Fig. 2) and three-way valves with T-piece (Fig. 1b)												
10	G1/2"A	26,5	58	40	23	22	15	10	R3/8"	15,0	12	2
15	G3/4"A	32,0	58	40	28	28	18	12	R1/2"	20,5	15	2
20	G1"A	26,5	60	60	30	33	23	17	R3/4"	26,0	22	2

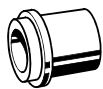
Ordering information

Item	DN	Connection	Protection cap	kvs-value	cv-value	OS-No.
Four-way valve	10	G1/2"A	orange	0,63	0,73	V9040X0010
	10	G1/2"A	red	1,00	1,16	V9041X0010
	10	G1/2"A	blue	1,60	1,86	V9042X0010
Three-way valve	15	G3/4"A	green	2,50	2,91	V9020X0015
	20	G1"A	green	4,00	4,65	V9020X0020

Accessories

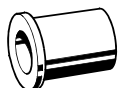
Connections

Brass soldering connection, flat sealing



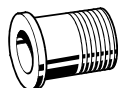
12 mm, for valves DN10	VA5930A012
15 mm, for valves DN15	VA5530A015
16 mm, for valves DN15	VA5530A016
22 mm, for valves DN20	VA5530A022

Steel welding connection, flat sealing



3/8", for valves DN10	VA5940A012
1/2", for valves DN15	VA5540A015
3/4", for valves DN20	VA5540A020

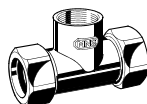
Externally threaded brass connection, flat sealing



R3/8", for valves DN10	VA5900A010
R1/2", for valves DN15	VA5500A015
R3/4", for valves DN20	VA5500A020
... with NPT thread	
NPT1/2", for valves DN15	VA5501A015
NPT3/4", for valves DN20	VA5501A020

Accessories

V9030 T-piece for V9020 type three-way valves



DN15	V9030X0015
DN20	V9030X0020

Installation examples

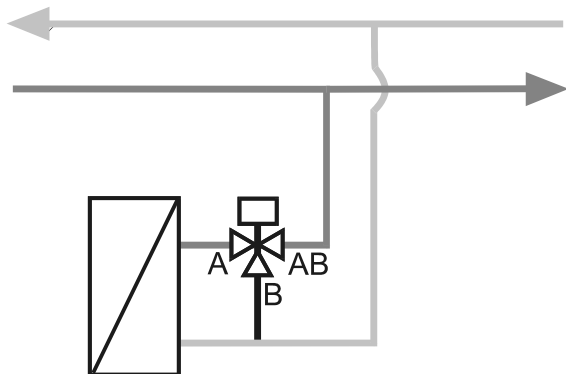


Fig. 3. Control of heat exchangers

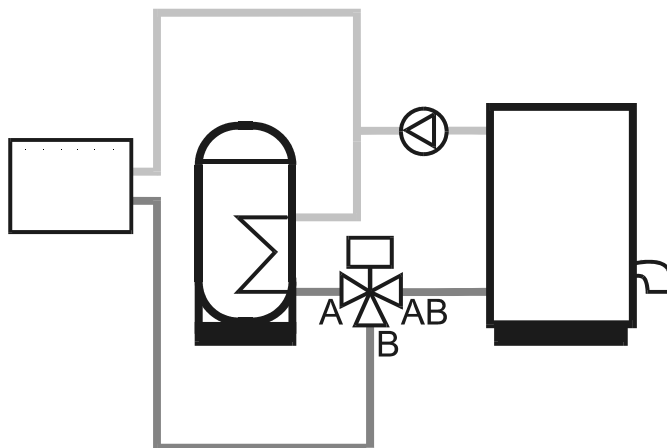
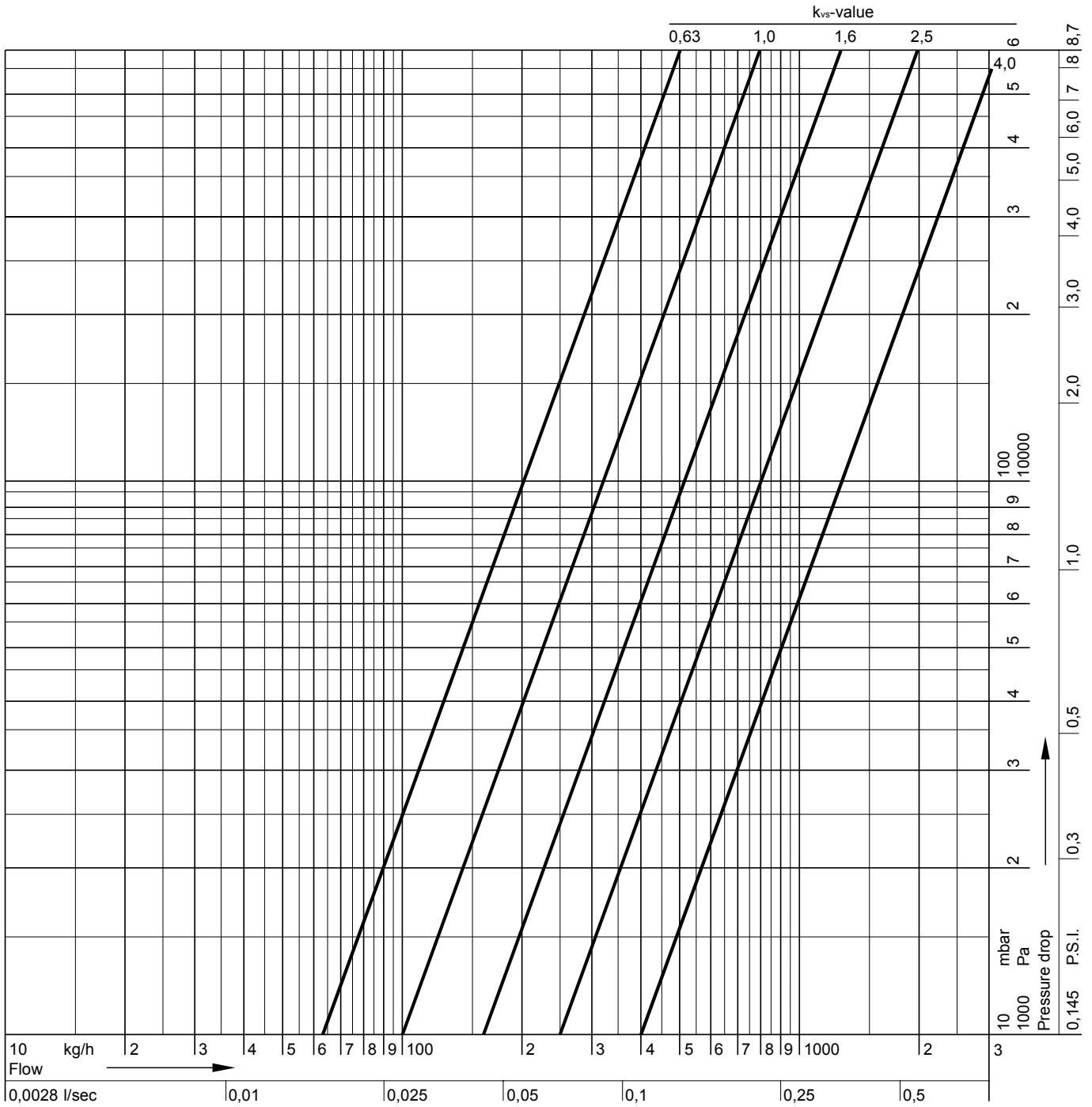


Fig. 4. Demand controlled switching between heating circuit and water heater

Flow diagram



NOTE: Flow data is only valid for water with a temperature of 5...30°C (41...86°F). When other temperatures or liquids are used the data may vary – see Reference Sheet 'Calculation of Flow Data' (EN0H-0221GE25).

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