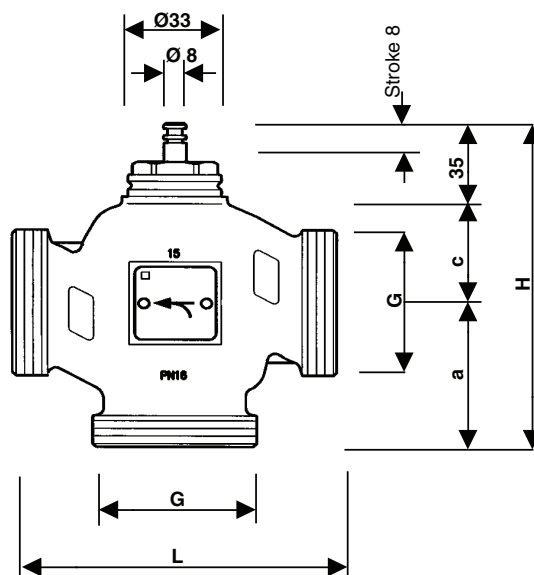


HERZ-3-way-mixing and diverting valves

For constant control of cooling and heating water

Data sheet for **4037**, Issue 0722

☑ Dimensions in mm



Order number	Dimension	G	a	c	L	H	$\Delta p_{\max}$ [bar]	kvs [m³/h]
1 4037 15	1/2	G1B	50	32	100	117	4	4
1 4037 20	3/4	G1 1/4B	50	33	100	118	3	6.3
1 4037 25	1	G1 1/2B	55	36	110	126	2	10
1 4037 32	1 1/4	G2B	60	38	120	133	1.5	16
1 4037 40	1 1/2	G2 1/4B	70	48	130	153	1	25
1 4037 50	2	G2 3/4B	75	54	150	164	0.8	40

☑ Model

3-way-valve with outside parallel thread, according to ISO 228/1, with flat seal, pipe connections are not included in package. Spindle made of stainless-steel, brass valve cone with glass fibre reinforced Teflon sealing. Brass stuffing box with EPDM O-ring, DR brass body.

Using mixing and diverting valve **4037** gives an advantage to usual installations as there are no sealing edges and so cannot be worn, and thus leak. Even after long service the leakage rate will be minimal.

☑ Operational data

Min. operating temperature	-15 °C
Max. operating temperature	till DN 32: 130 °C DN 40 - DN 50: 110 °C
Max. operating pressure	16 bar

When the temperature < 0 °C we recommend to use the gland sealing heater, when the temperature > 100 °C - use the temperature adapter.

Valve characteristic:	linear	
Leakage rate	norm branch	< 0,02 % from the Kv-value
	admix branch	1% from the Kv-value

Heating water according to ÖNORM H5195 or VDI-Standard 2035. The use of ethylene or propylene glycol in a mixing ratio 25- 50% is allowed. EPDM gaskets can be affected by mineral oils lubricants and thus lead to failure of the EPDM seals. Please refer to manufacturers documentation when using ethylene glycol and propylene glycol products for frost and corrosion protection. Too high differential pressure drop may damage the due to cavitation.

Application field

For constant control of cooling or heating water, or air as a mixing or diverting valve. Together with valve drives used as control device with adjustable characteristic curve (linear, proportional or square).

The control device may be mounted in any position, except vertically downward. Avoid penetration of condensing water, dripping water, etc. into drive. Assembling of valve and drive is possible without pre-adjustment. The drive is self adjusting as soon as voltage is put on the valve.

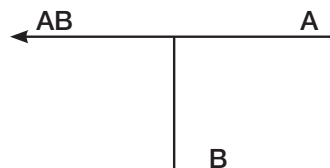
Installation

Valves are mounted in pipe system according to application (mixing or diverting valve) by means of commercial standard screw connections with flat seals. Avoid penetration of dirt into valves.

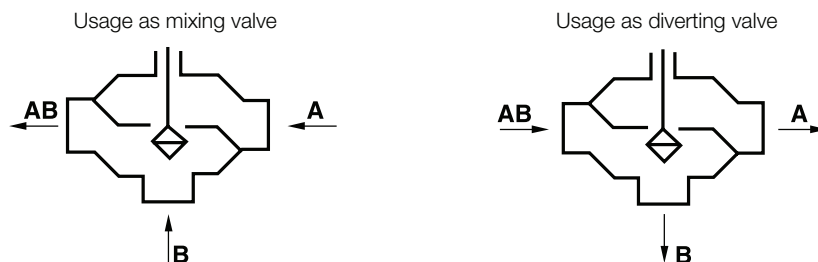
By the time the pin of valve spindle is extended, the path A-AB is closed.

During installation, be aware of the flow direction marked by an arrow on body.

The arrow on the body indicates the direction of flow to the mixing.



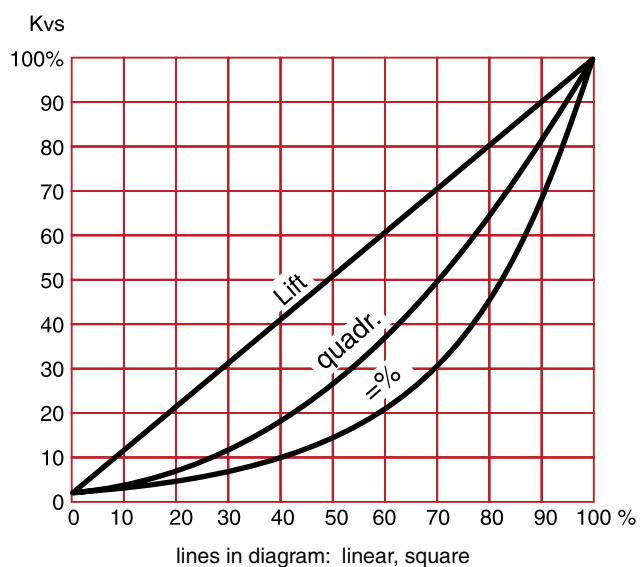
Mounting directions



Characteristic curves

Characteristics in combination with drive 1 7712 11

The illustration shows the square characteristic for comparison



Linear valve characteristic could be changed by using the valve drive 1 7712 11 with fitted DIP switches.

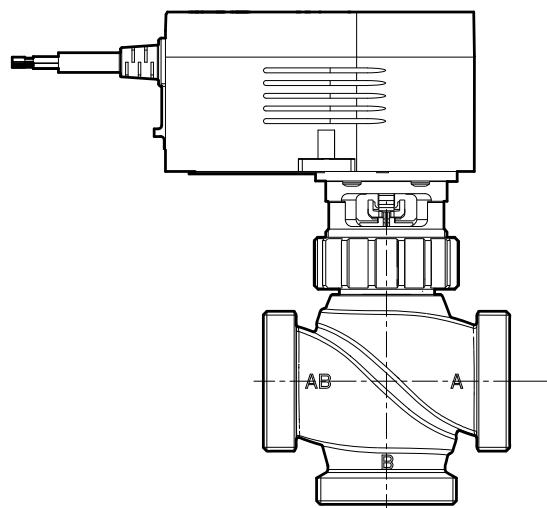
Also possible:

- linear characteristic
- equal percentage characteristic

☑ Actuating combinations

7712

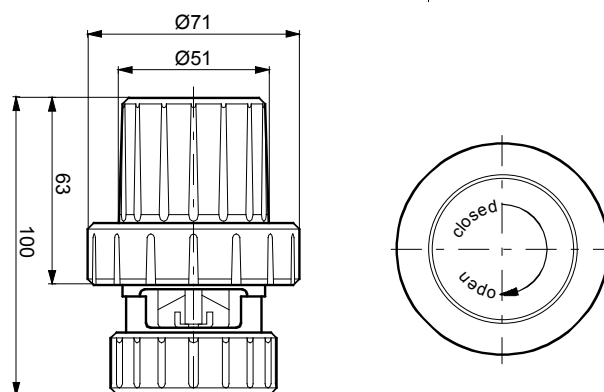
Valve Drive for Three-Port Valve,
Actuating power 500 N.
Operating through heating control for continuous
or 3-point operation. Two-piece body made of
self-extinguishing plastic. Plastic console and
brass union nut for valve installation. Gearbox
for positioning of valve and manual adjustment.
Vertical and horizontal mounting is possible,
inverted installation is not possible.



9102

HERZ-Handwheel

for HERZ-Three-Port Mixing and Diverting Valve
4037, not supplied with valve drive.



☑ Accessories

- 1 **7712 11** HERZ-Valve drive with position controller 24 V/AC, control signal 0-10 V
- 1 **7712 50** HERZ-Valve drive for 3-point control 230 V/AC, actuating power 500 N
- 1 **7712 51** HERZ-Valve drive for 3-point control 24 V/AC, actuating power 500 N
- 1 **7796 04** HERZ-Safety transformer 230 V / 24 V, 50 Hz, 60 VA
- F **7793 50** HERZ microprocessor controller XF-5000 for the control and regulation of building systems such as heating, cooling, ventilation and room climate control systems, 230 V/AC
- F **7793 70** HERZ microprocessor controller F-100 for control based on outside temperature
- F **7793 4X** HERZ temperature sensor for installation in pipes: sensor length 120mm, 225mm, 300mm, 375 mm
- F **7793 60** Outside temperature sensor
- 1 **9102 40** HERZ-Hand wheel for **4037**

☑ Other products

- 1 **7761 xx** Diverting valve CALIS-RD, DN 15 - DN 32 for thermal drive
- 1 **7762 xx** Thermostatic 3-way mixing and diverting valve, DN 10 - DN 20 for thermal drive
- 1 **7766 xx** Mixing 3-way valve, Teplomix, for raising return temperature, DN 25 and DN 32 equipped with thermostat, no drive required.

☑ Brass

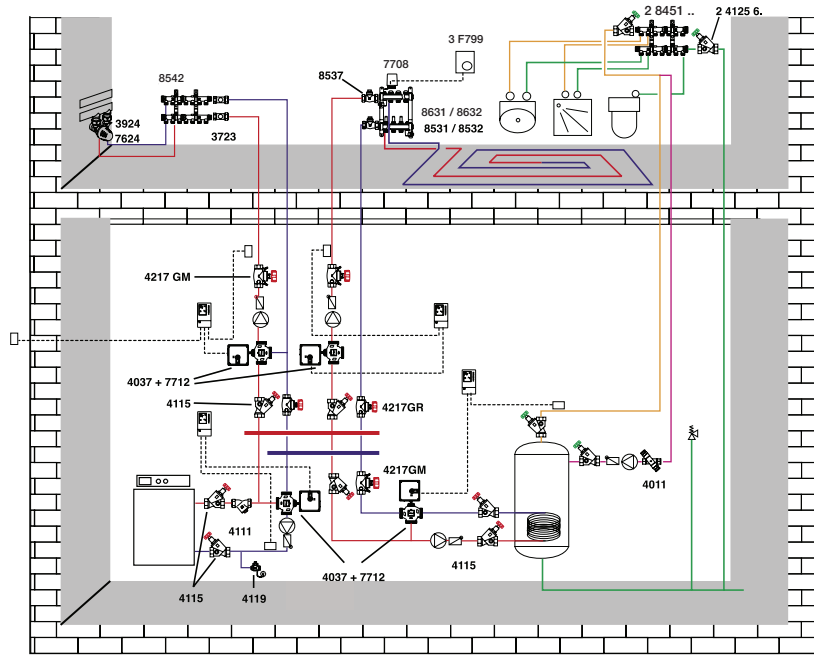
HERZ uses top-quality brass that is in compliance with DIN EN 12164, DIN EN 12165, DIN EN 1982, the UBA and 4MS lists.

Pursuant to Article 33 of the REACH Regulation (EC No. 1907/2006), we are obliged to point out that the material lead is listed on the SVHC list and that all brass components manufactured in our products exceed 0.1% (w / w) lead (CAS: 7439-92-1 / EINECS: 231-100-4). Since lead is a component part of an alloy, actual exposure is not possible and therefore no additional information on safe use is necessary.

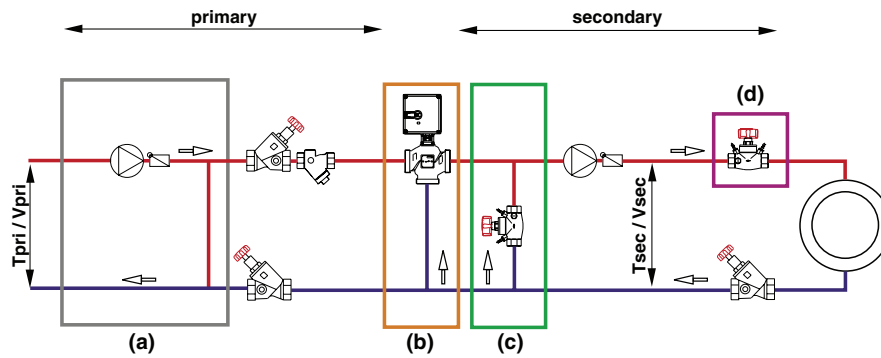
☑ Disposal instruction

The disposal of the 3-way mixing and diverting valves must not endanger the health or the environment. National legal regulations for proper disposal of the 3-way mixing and diverting valves have to be followed.

Application example



Dimensioning example



- (a) Pump primary invariably with bypass
Bypass valve if $\Delta T > 30 \text{ K}$
 $\Delta p_{\text{Bypass}} = \Delta p_{\text{3-way valve (actual)}}$
- (c) $\Delta p_{\text{STRÖMAX}} = 3 \text{ kPa}$
- (d) Dimension of mixing valve; modus operandi:
- (b) 1) $\Delta p_{\text{theo}} = 3 \text{ kPa}$

$$2) kv_{\text{theo}} = \frac{\Delta \dot{V}_{\text{pri}}}{100 \sqrt{\Delta p_{\text{theo}}}}$$

3) Valve selection acc. to table ($kv_{\text{actual}} < kv_{\text{theo}}$)

4) Recalculation of actual pressure drop

$$\Delta p_{\text{act}} = \left(\frac{\dot{V}_{\text{pri}}}{100 \cdot kv_{\text{act}}} \right)^2$$

Common power/water quantity:

$$\dot{V} = \frac{3600 \cdot P}{c \cdot \Delta T}$$

Volume flow rate	V	[kg/h]
Capacity	P	[kW]
Specific heat capacity	c	[kJ/kg K]
Temperature difference	ΔT	[K]
Valve parameter for partially open valve	kv	[m³/h]
Pressure drop	Δp	[kPa]

Please note: all diagrams are indicative in nature and do not claim to be complete.

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