

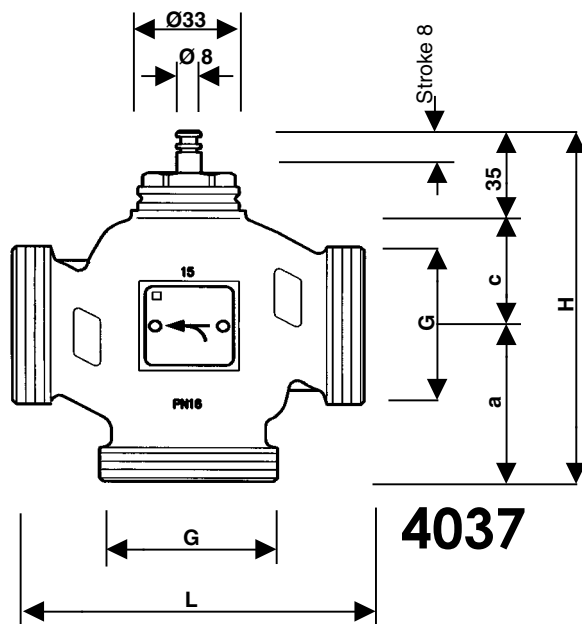
HERZ-3-way-mixing and diverting valves

For constant control of cooling and heating water

Data sheet for

4037

Issue 0606



Dimensions in mm

Order number	Dimension	G	a	c	L	H	Δp max	kvs [m ³ /h]
1 4037 15	1/2	G3/4B	50	32	100	117	4	4
1 4037 20	3/4	G1 B	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

4037 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.

Model

Max. operating temperature - 15 ...+ 130 °C
Max. operating pressure 16 bar / 130 °C till DN 32
16 bar / 110 °C for DN 40 and DN 50

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 (mode) norm branch < 0,02 % from the Kv-value
admix branch 1% from the Kv-value

Water condition according to ÖNORM H 5195 and VDI 2035.
Too high differential pressure drop may damage the due to cavitation.

Operational data

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.

Application field

We reserve the right to make alterations necessitated by technological progress and/or market requirements.

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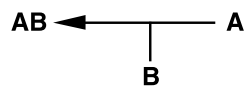
Richard-Strauss-Straße 22 • A-1230 Wien
e-mail: office@herz-armaturen.com • www.herz-armaturen.com



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.

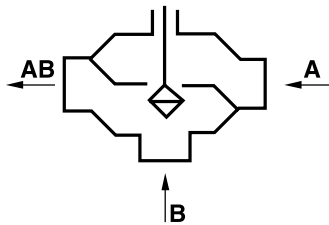
By the time the pin of valve spindle is extended, the path A-AB is closed.

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

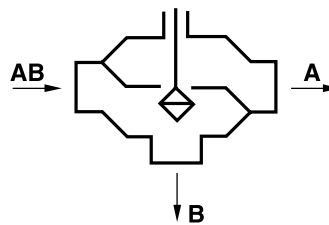


Installation

Usage as mixing valve



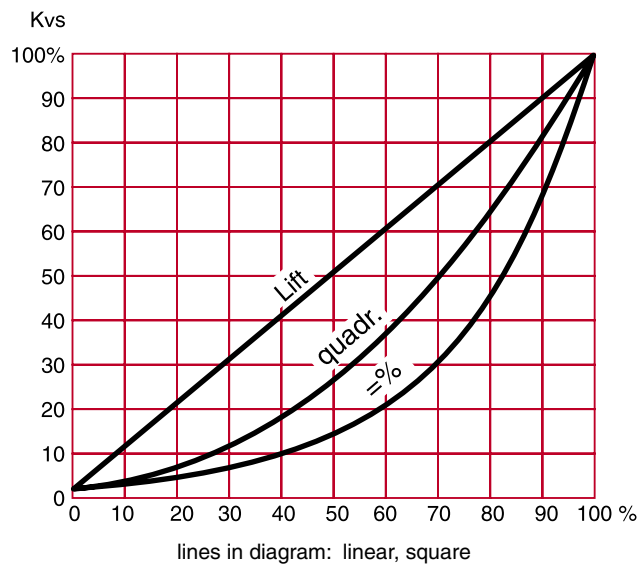
Usage as diverting valve



Mounting directions

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

Characteristic curves

- 1 **7712 11** HERZ-Valve drive with position controller 24 V, control signal 0-10 V
- 1 **7712 50** HERZ-Valve drive for 3-way valves 230 V, actuating power 500 N
- 1 **7712 51** HERZ-Valve drive for 3-way valves 24 V, actuating power 500 N
- 1 **7712 80** HERZ-Valve drive for 3-way valves 24 V, actuating power 800 N
- 1 **7796 03** HERZ-Safety transformer 230 / 24 V, 50 Hz, 50 VA
- 1 **7793 23** HERZ-Electronic heat controller 110-230 V, with PI control
- 1 **7793 24** HERZ-Electronic heat controller 24 V, with PI control
- 1 **7793 01** HERZ-Outdoor temperature sensor for heat controller
- 1 **7793 00** HERZ-System temperature sensor for heat controller
- 1 **9102 40** HERZ-Hand wheel for 4037

We recommend the valve drive with actuating power 800 N when using the valve as a Diverter (?).

Accessories

4037 DN	Threaded iron pipe connection		Soldering connection for pipe d		Welding connection for pipe d		Accessories Screw connection
	1 6220		1 6236		1 6240		
15	1 6220 21	1/2	1 6236 11 1 6236 21	15 18	1 6240 01	1/2	
20	1 6220 12	3/4	1 6236 02 1 6236 12 1 6236 22	15 18 22	1 6240 02	3/4	
25	1 6220 64	1 1/4	1 6236 64	35	1 6240 64	5/4	
32	1 6220 74	1 1/4	1 6236 74	35	1 6240 74	5/4	
40	1 6220 75	1 1/2	1 6236 75	42	1 6240 75	1 1/2	
50	1 6220 76	2	1 6236 76	54	1 6240 75	2	

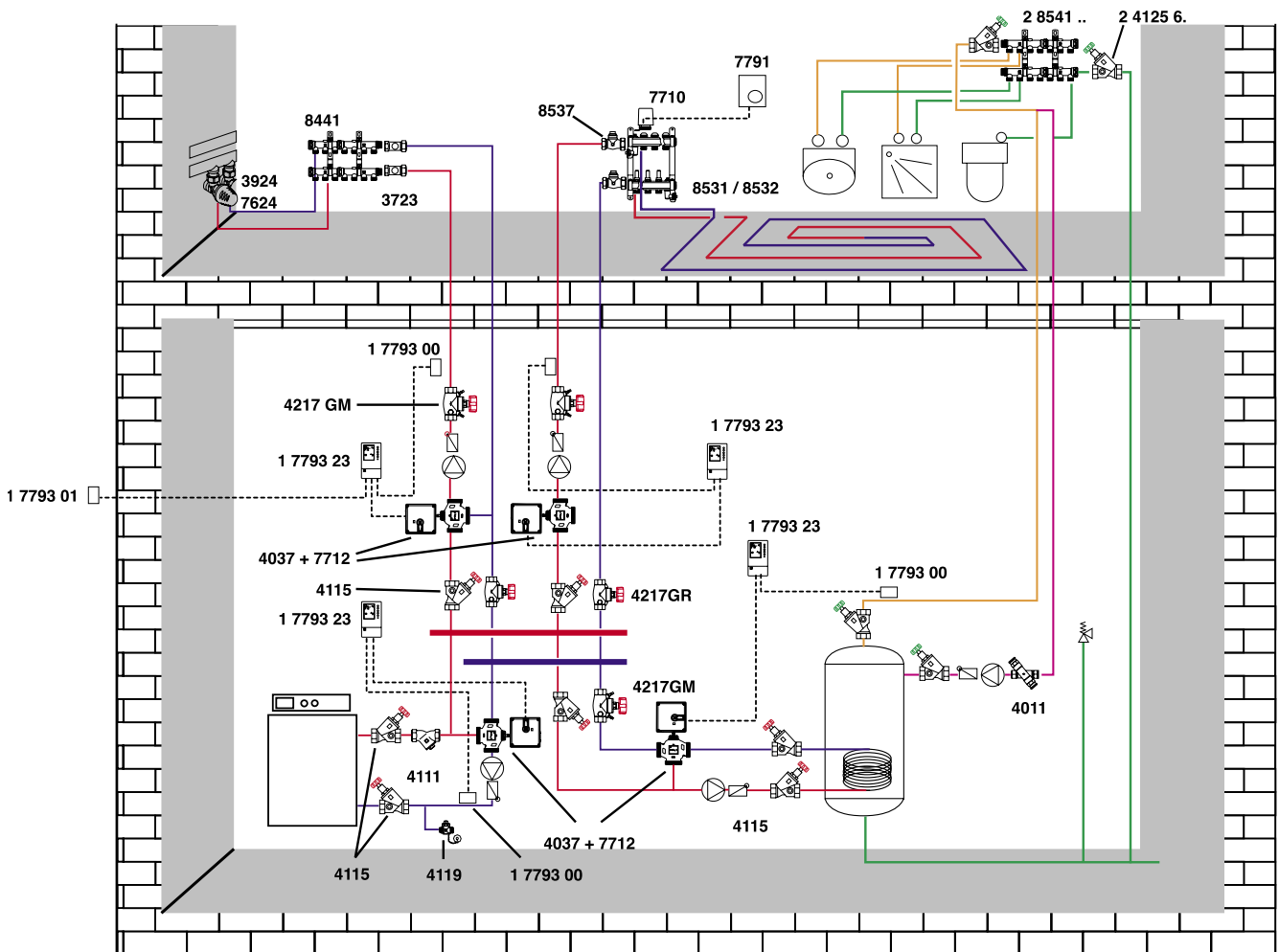
All connection elements consists of: nut, nipple and seal

When using as a control valve, the caps for locking the middle outlet are available

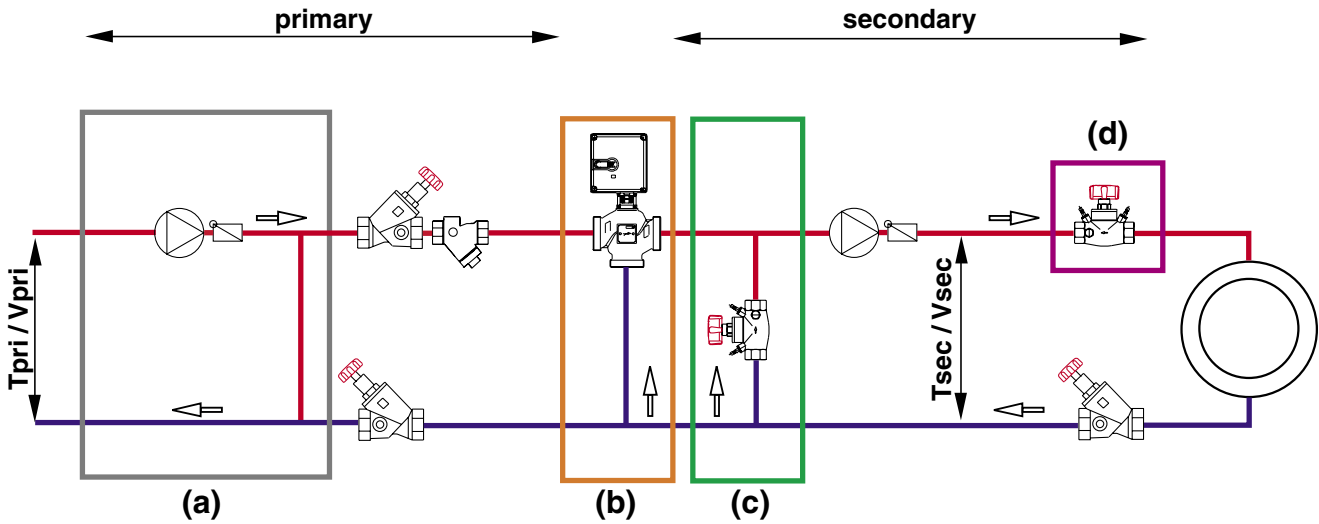
DN 15	1 8525 02	DN 32	1 8525 74
DN 20	P 1328 03	DN 40	1 8525 75
DN 25	1 8525 64	DN 50	1 8525 76

1 7761 xx	Diverting valve CALIS-RD, DN 15 - DN 32 for thermal drive	Other products
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.	

Application example:



Dimensioning example:



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

1) $\Delta p_{\text{theo}} = 3 \text{ [kPa]}$

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

3) Valve selection acc. to table ($k_{v\text{-tat}} < k_{v\text{-theo}}$)

4) Recalculation of actual pressure drop

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

Common power/water quantity

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

- \dot{V} = Volume flow rate [$\text{m}^3 \cdot \text{h}^{-1}$]
- P = Capacity [W]
- c = Specific heat capacity, for water 4,19 [$\text{kJ} \cdot \text{kg}^{-1} \cdot \text{K}^{-1}$]
- T = Temperature [K]
- k_v = Valve parameter for partially open valve [$\text{m}^3 \cdot \text{h}^{-1}$]
- p = Pressure [$\text{Pa} = \text{N} \cdot \text{m}^{-2}$]

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