3- AND 4-PORT VALVES PN 6 (10...110 °C)

3 - 4 G / 3 - 4 F Eng.

DISCONTINUED PRODUCT

TO SEE A SUITABLE REPLACEMENT PRODUCT

- **Body and shoe in cast iron**
- **Screwed female connections or flanged PN (ISO 2084)**
- **Working temperature:10…120 °C**
- **Rotation angle 90°**

CE

1. APPLICATION

The 3 – 4 port valves 3 / 4 G and 3 / 4 F are designed for controlling the hot water flow in heating plants with maximum working pressure of 6 bar (600 kPa). They are operated by CVC, CVH or CVF 90° rotary actuators.
They can be used for mixing (two inputs and one output – constant flow and variable temperature) or for diverting (one input and two outputs – variable flow and constant temperature) according to the type of plant controlled.
Permitted fluids:

- Hot water max 110 °C
- Chilled water min 10 °C (glycol max 50%)
- Water treated with hydrates and phosphates

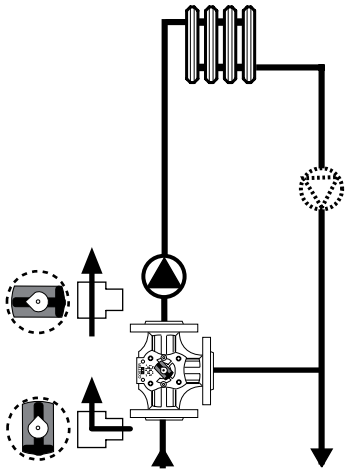
2. MODELS

Model	DN	Kvs(1) m³/h	Suitable actuators CVC	CVH	CVF
3-port scre.d		kPa(2)	(bar)kPa(2)	(bar)kPa(2)	(bar)
3G 3/4"	3/4"	13	30 (0.3)	50 (0.5)	–
3G 1"	1"	13	30 (0.3)	50 (0.5)	–
3G 1"1/4	1"1/4	19	20 (0.2)	50 (0.5)	–
3G 1"1/2	1"1/2	29	20 (0.2)	50 (0.5)	–
3G 2"	2"	57	20 (0.2)	50 (0.5)	–
3-port flang.					
3F DN 40	40	29	20 (0.2)	50 (0.5)	–
3F DN 50	50	57	20 (0.2)	50 (0.5)	–
3F DN 65	65	81	–	40 (0.4)	–
3F DN 80	80	170	–	40 (0.4)	–
3F DN 100	100	240	–	30 (0.3)	50 (0.5)
3F DN 125	125	470	–	–	50 (0.5)
3F DN 150	150	700	–	–	50 (0.5)
4-port scre.d					
4G 3/4"	3/4"	13	30 (0.3)	50 (0.5)	–
4G 1"	1"	13	30 (0.3)	50 (0.5)	–
4G 1"1/4	1"1/4	19	20 (0.2)	50 (0.5)	–
4G 1"1/2	1"1/2	29	20 (0.2)	50 (0.5)	–
4G 2"	2"	57	20 (0.2)	50 (0.5)	–
4-port flang.					
4F DN 40	40	29	20 (0.2)	50 (0.5)	–
4F DN 50	50	57	20 (0.2)	50 (0.5)	–
4F DN 65	65	81	–	40 (0.4)	–
4F DN 80	80	170	–	40 (0.4)	–
4F DN 100	100	240	–	30 (0.3)	50 (0.5)
4F DN 125	125	470	–	–	50 (0.5)
4F DN 150	150	700	–	–	50 (0.5)

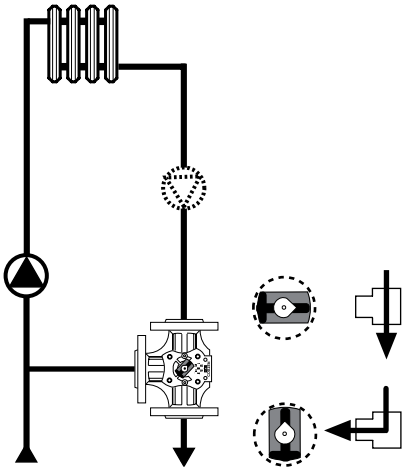
(1) : Kvs – Flow coefficient: Flow in m³/h with valve open and pressure drop of 100 kPa
(2) : Δp max. – Maximum pressure differential permitted by actuator. 100 kPa = 10 mWG = 1 bar

3. SCHEMATIC DIAGRAM

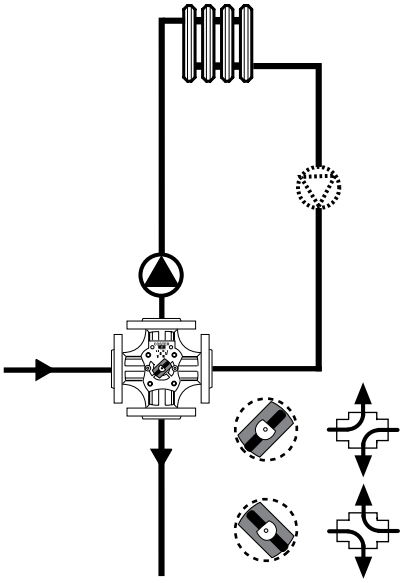
Mixing with 3-port valve on flow



Mixing with 3-port valve on return



Mixing with 4-port valve



4. TECHNICAL DATA

Valve body	GG 25 cast iron
Internal rotor	GG 25 cast iron
Spindle	GG 25 cast iron
Rotor gasket	O - Ring
Spindle gasket	Nylon
Test pressure	1 MPa (10 bar)
Working pressure	600 kPa (6 bar)

Rotation	90°
Let by	0.3...0.8 % Kvs
Fluid temperature	10...110 °C
Control features	linear

5. INSTALLATION

Before mounting the valve ensure that in the pipework there is no extraneous material such as residues from welding or threading. The pipework must not be subject to vibrations and must be perfectly aligned with the valve connections in order to avoid dangerous stresses. The direction of the fluid flow must be strictly respected according to the type of hydraulic circuit controlled
The valve can be installed in any position except that with the spindle pointing downwards.

6. CONSTRUCTION

The valve body, the spindle and the shoe are made from G25 cast iron.
The hydraulic seal between the rotor and the valve body is ensured by two O-Rings which prevent contact between the two bodies and facilitate the rotary movement.
The spindle seal is assured by Teflon gaskets.
The special shape of the spindle ensures correct coupling with the actuator which fits on the mountings provided on the front part of the valve body..

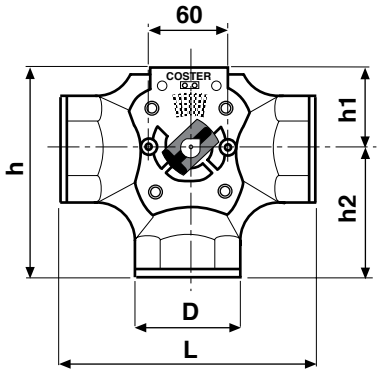
7. OPERATION

The control element of the valve is a rotor (sector in 3-port valves, butterfly in 4-port valves) which, operated by the rotary movement of the spindle, diverts the flow between the always-open port and the two controlled ports in three-port installations; between the boiler ring and the plant ring in 4-port .
The position of the sector is shown on the outside of the valve by a plate; whilst two labels, one blue and one red, moveable according to the way the valve is mounted, indicate if
the valve is opening or closing. The rotation angle of the rotor is 90°.
The valve can be operated:

- by hand, using the handle supplied
- automatically when coupled to an actuator chosen according to the diameter (see 2. MODELS).

8. DIMENSIONS

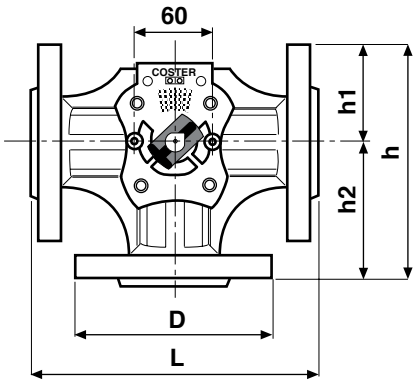
3-port threaded valves



MODEL	SCREWED				
	D	L	h	h1	h2
3 G 3/4"	56	130	113	48	65
3 G 1"	56	130	113	48	65
3 G 1"1/4	70	142	119	48	71
3 G 1"1/2	80	160	137	57	80
3 G 2"	93	190	156	61	95

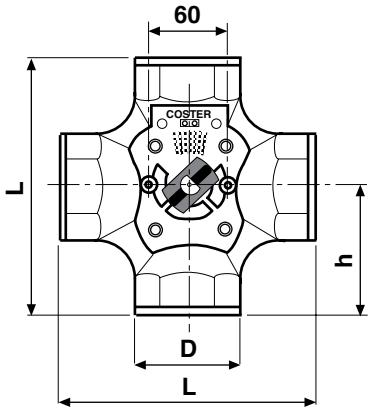
Spindle ø mm 16 – projection 12.5 mm

3-port flanged valves



MODEL	FLANGED					
	D	L	h	h1	h2	No. holes
3F DN 40	130	180	155	65	90	4x14
3F DN 50	140	200	170	70	100	4x14
3F DN 65	160	230	195	80	115	4x14
3F DN 80	190	250	220	95	125	4x18
3F DN 100	210	280	245	105	140	4x18
3F DN 125	240	300	270	120	150	8x18
3F DN 150	265	350	307	132	175	8x18

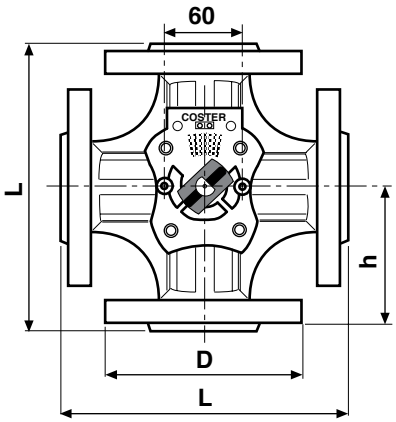
4-port threaded valves



MODEL	SCREWED		
	D	L	h
4 G 3/4"	56	130	65
4 G 1"	56	130	65
4 G 1"1/4	70	142	71
4 G 1"1/2	80	160	80
4 G 2"	93	190	95

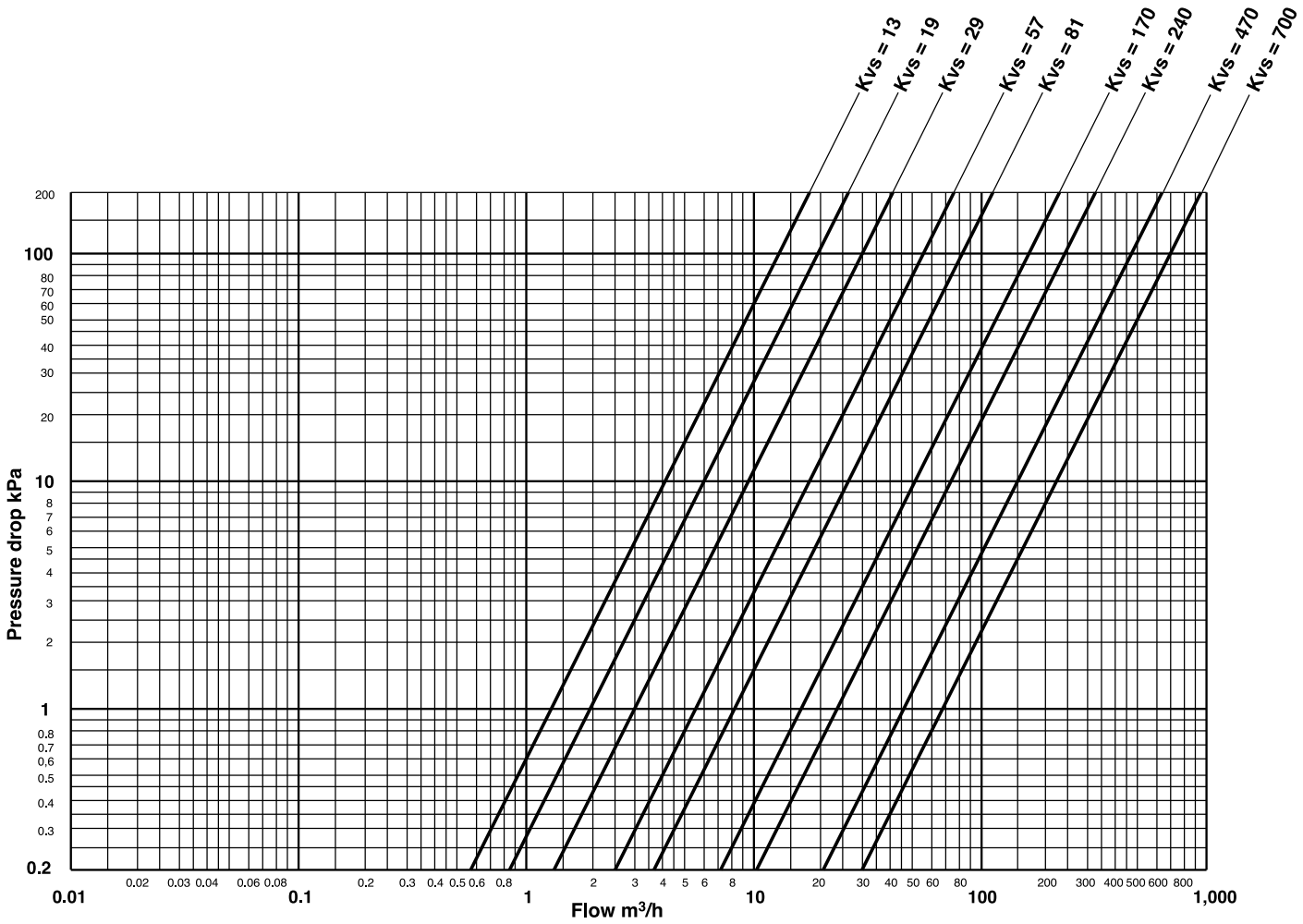
Spindle ø mm 16 – projection 12.5 mm

4-port flanged valves



MODEL	FLANGED			
	D	L	h	No. holes
4F DN 40	130	180	92	4x14
4F DN 50	140	200	102	4x14
4F DN 65	160	230	116	4x14
4F DN 80	190	250	125	4x18
4F DN 100	210	280	140	4x18
4F DN 125	240	300	150	8x18
4F DN 150	265	350	175	8x18

9. PRESSURE DROP DIAGRAM



Kvs = Flow coefficient : Flow in m^3/h with valve open and with pressure drop of 100 kPa.
100 kPa = 10 mWG = 1 bar

MC 20.02.01 Rev. : LB 06.06.03

COSTER
CIE CONTROLLI TEMPERATURA ENERGIA
COSTER TECNOLOGIE ELETTRONICHE S.p.A.

Head Office & Sales
Via San G.B. De La Salle, 4/a — Tel. +39.022722121
20132 - Milan — Tel. +39.0245476193
Fax. +39.022593645

Reg. Office Central & Southern
Via S. Longanesi, 14 — Tel. +39.065573330
00146 - Rome — Fax.+39.065566517

Orders and Shipping
Via Gen. Treboldi 190/192 — Tel. +39.0364773200
25048 - Edolo (BS) — Tel. +39.0364773202
Fax.+39.0364770016

Web: www.coster.info — E-mail: info@coster.info

ISO 9001: 2000
IQNet
THE INTERNATIONAL CERTIFICATION NETWORK
Registration Number: IT - 34674
CSQ - Certificate N. 9115.COEE

D 33185