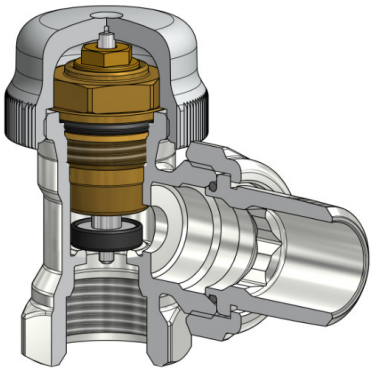
Thermostatically controllable valves art. VD/VS/VCR/VCD/VCS xxxx



Thermostatically controllable valves have the purpose to cut-off, throttle and regulate flow rate through the heating body, since they are ready for thermostatic, electrothermal or manual head. A classic application of these valve is to equip them with a thermostatic head, so to make zones independent of each other by allowing the temperature regulation of the single room; this provides highly comfortable conditions and energy saving at the same time, as required by current local and international standards. Each valve is equipped with a protecting cover that preserves the thread, completely closes the valve during system test, and allows nominal lift calibration. The thermostatic inserts can be inspected and, if necessary, the o-ring on the spindle can be replaced, even while the system is working.

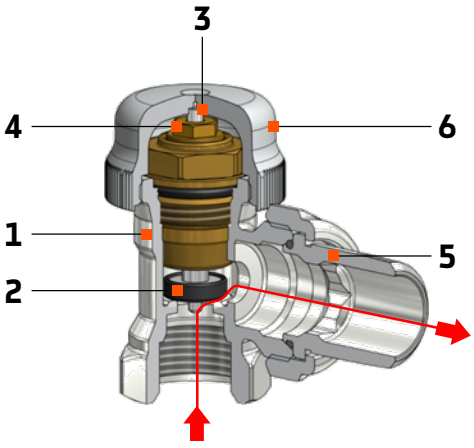
TECHNICAL FEATURES

Max static operating pressure: 10 bar
Max operating temperature: 120 °C
Max differential pressure: 1 bar
Max differential pressure with thermostatic head: 0.25 bar

MATERIALS

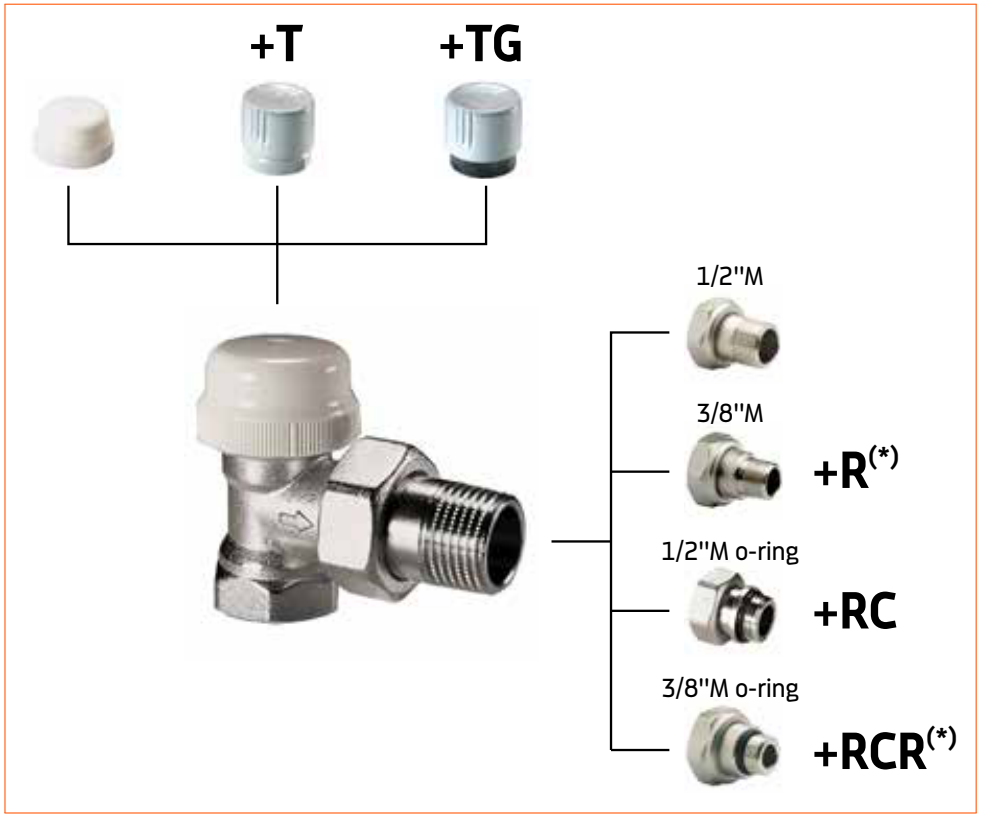
Valve body: CW617N
Other brass parts: CW617N
Rubber sealing parts: peroxide EPDM
Protecting cover: ABS
Steel parts (spring, washer and spindle): stainless steel

MAIN COMPONENTS



1. Valve body
2. Valve member
3. Spindle
4. Replaceable retainer
5. Fitting for radiator connection
6. Protecting cap

VARIANTS AND OPTIONS



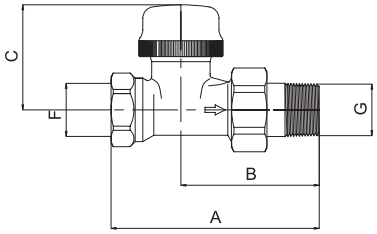
(*) *Reduced fitting 3/8" M available only for valves with G 3/4" EK and 1/2" F connection.*

Esempio

 **500501**	 **-**	 **+T**	 **+TG**
 **-**	500501	500501**T**	500501**TG**
 **+R**	500501**R**	500501**TR**	500501**TGR**
 **+RC**	500501**RC**	500501**TRC**	500501**TGRC**
 **+RCR**	500501**RCR**	500501**TRCR**	500501**TGRCR**

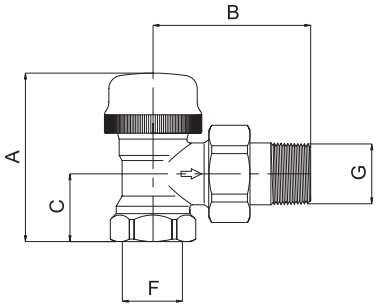
DIMENSIONS

Thermostatically controllable straight valve with iron pipe connection



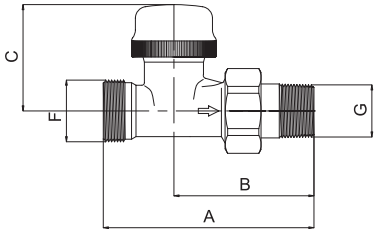
ART.	COD.	SIZE	A	B	C	F	G
VD 2101	500439	DN 10	75	51	43.5	G 3/8"	3/8"
VD 2101	500440	DN 15	82	55	43.6	G 1/2"	1/2"
VD 2101	500308	DN 20	97.5	65.5	43.7	G 3/4"	3/4"

Thermostatically controllable angle valve with iron pipe connection



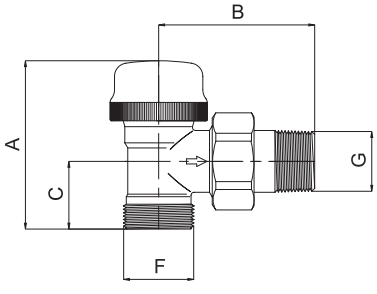
ART.	COD.	SIZE	A	B	C	F	G
VS 2102	500500	DN 10	56.5	49	20	G 3/8"	3/8"
VS 2102	500501	DN 15	59.5	53	23	G 1/2"	1/2"
VS 2102	500309	DN 20	59.5	62.5	26	G 3/4"	3/4"

Thermostatically controllable straight valve with copper pipe connection



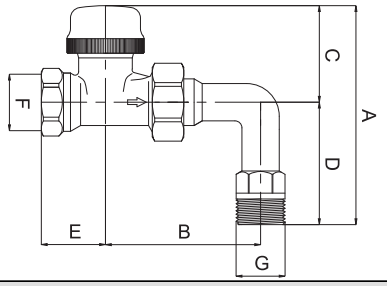
ART.	COD.	SIZE	A	B	C	F	G
VD 2103	500476	M24	82	55	43.5	M24×1.5	1/2"
VD 2105	500473	EK	82	55	43.5	G 3/4"	1/2"

Thermostatically controllable angle valve with copper pipe connection



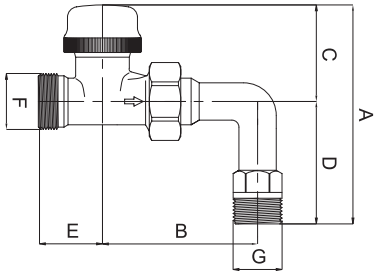
ART.	COD.	SIZE	A	B	C	F	G
VS 2104	500515	M24	59.5	53	23	M24×1.5	1/2"
VS 2106	500805	EK	59.5	53	23	G 3/4"	1/2"

Thermostatically controllable straight valve with iron pipe connection and angle pipe union



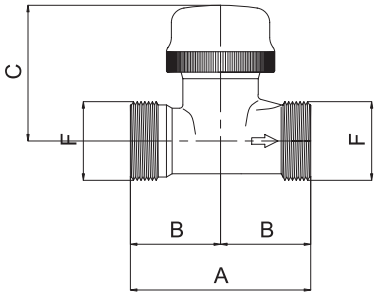
ART.	COD.	SIZE	A	B	C	D	E	F	G
VD 2111	500479	DN 15	96	66.5	43.5	52.5	27.5	G 1/2"	1/2"

Thermostatically controllable straight valve with copper pipe connection and angle pipe union



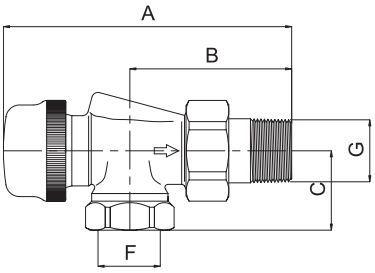
ART.	COD.	SIZE	A	B	C	D	E	F	G
VD 2113	500493	M24	96	66.5	43.5	52.5	27.5	M24×1.5	1/2"
VD 2115	500496	EK	96	66.5	43.5	52.5	27.5	G 3/4"	1/2"

Thermostatically controllable straight valve with no fitting and EK connection



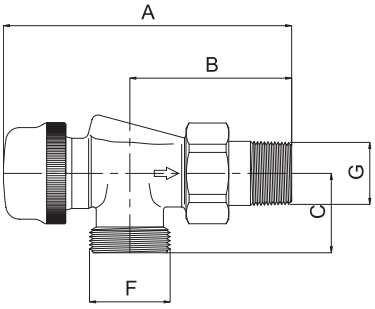
ART.	COD.	SIZE	A	B	C	F
VD 2127	500890	EK	55	27.5	43.5	G 3/4"

Thermostatically controllable reverse-body valve with iron pipe connection



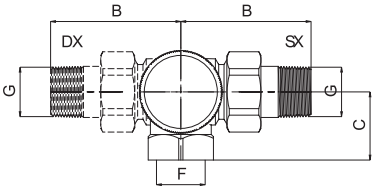
ART.	COD.	SIZE	A	B	C	F	G
VCR 2132	500399	DN 15	96.5	53.5	26	G 1/2"	1/2"

Thermostatically controllable reverse-body valve with copper pipe connection



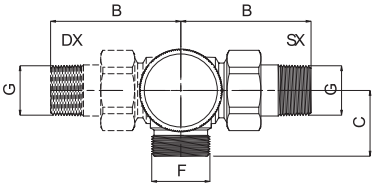
ART.	COD.	SIZE	A	B	C	F	G
VCR 2134	500300	M24	96.5	53.5	26	M24×1.5	1/2"
VCR 2136	500558	EK	96.5	53.5	26	G 3/4"	1/2"

Thermostatically controllable (right or left) coaxial valve with iron pipe connection



ART.	COD.	SIZE	B	C	F	G
VCD 2162 DX	500829	DN 15	53.5	27	G 1/2"	1/2"
VCS 2162 SX	500433	DN 15	53.5	27	G 1/2"	1/2"

Thermostatically controllable (right or left) coaxial valve with copper pipe connection



ART.	COD.	SIZE	B	C	F	G
VCD 2164 DX	500427	M24	53.5	27	M24×1.5	1/2"
VCS 2164 SX	500435	M24	53.5	27	M24×1.5	1/2"
VCD 2166 DX	500430	EK	53.5	27	G 3/4"	1/2"
VCS 2166 SX	500518	EK	53.5	27	G 3/4"	1/2"

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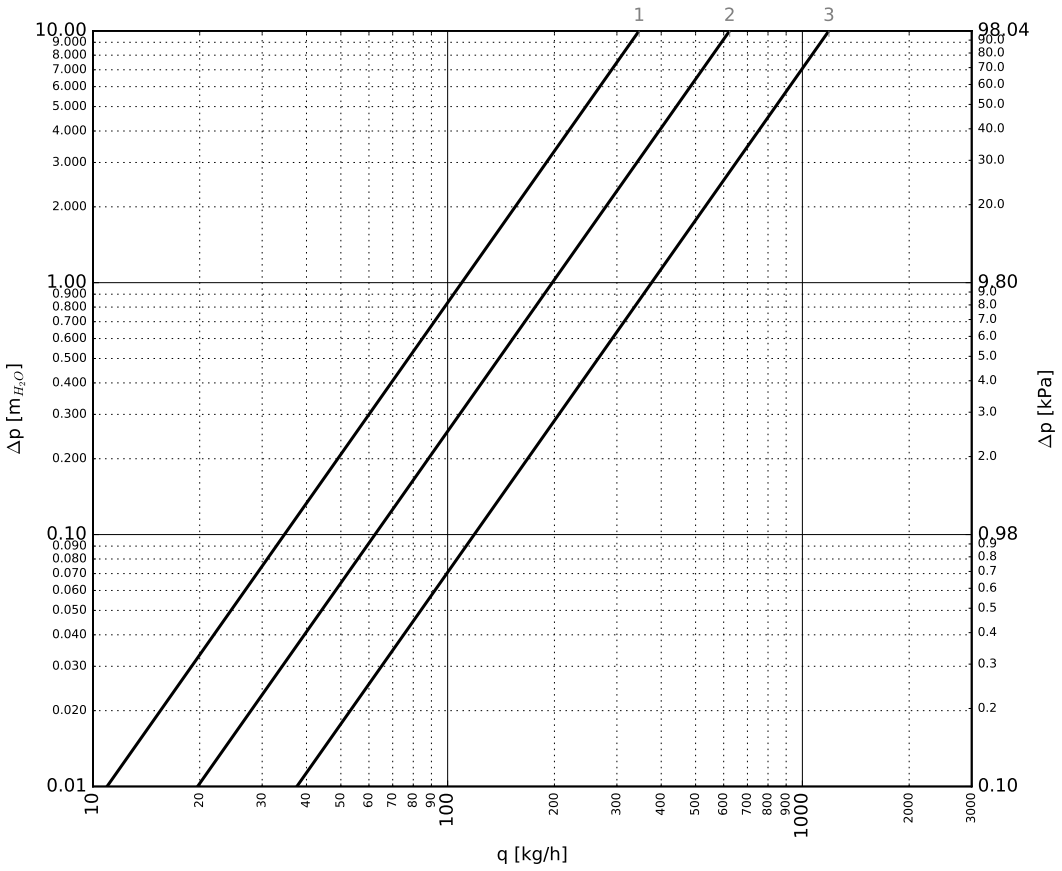


	1	2	3
DN	Δp = -1 K	Δp = -2 K	Kvs
Kv	0.35	0.63	1.2

Nominal flow rate to EN 215 (0.1 bar) = 200 l/h

Kv. Flow coefficient: water flow rate through the valve with 1 bar differential pressure

$$Kv = \frac{Q[m^3/h]}{\sqrt{\Delta p[bar]}}$$

Kvs. Kv with fully open valve

ΔT. Proportional band: temperature difference between actual room temperature and set-point, at which the design flow rate occurs. E.g.: assuming -2 K proportional band means that, by setting the thermostatic command to 20 °C, the design flow rate occurs when room temperature is 18 °C

APPLICATIONS

Valves **VD, VS, VCx** are suitable to the application of a thermostatic command, reducing the flow until the desired room condition is reached.
The flow reduction causes the reduction of the return temperature as well. Therefore, the fact that the radiator gets cold at the bottom indicates the correct operation of the thermostatic valve, since it is limiting the heat emission only to the required power (Fig. 1).

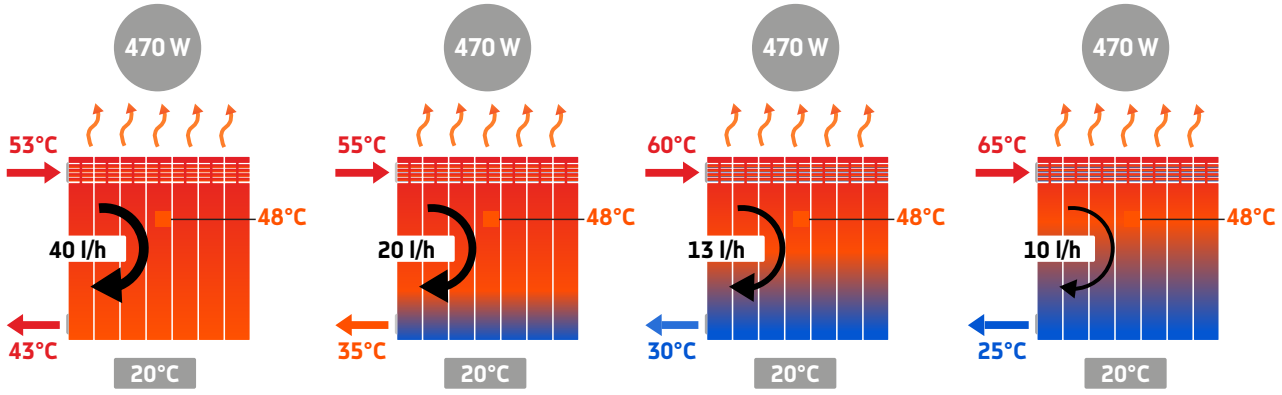
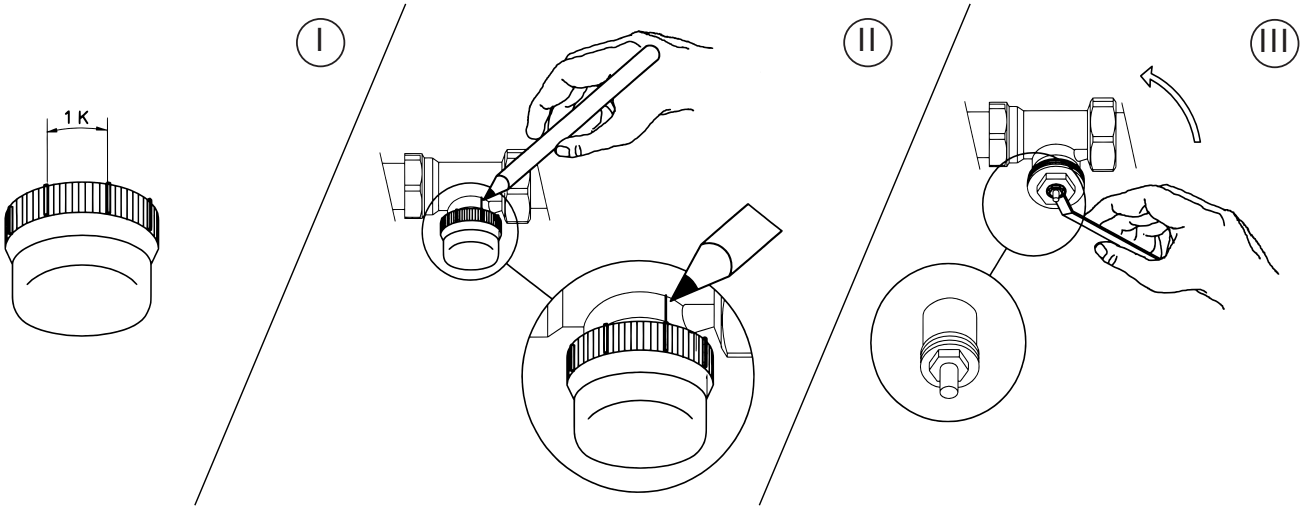


Fig. 1: Effect of the thermostatic valve adjustment: the flow rate gets drastically reduced.

OPERATING INSTRUCTIONS



Protecting cover (Fig. I)

- Preserves thread during installation;
- Allow to completely close the valve;
- Allow calibration of nominal lift.

Calibration of nominal lift (Fig. II)

1. Screw the cover manually up to mechanical stop;
2. Draw on the valve body a reference line corresponding to one of the cover notches;
3. Unscrew the cover by 4 notches.

Spindle seal (Fig. III)

The seal system can be easily replaced without draining the plant:

1. Unscrew the hexagonal head nut (8 mm) with a spanner, and replace it, included the stainless steel spindle;
2. Mount the nut and screw tightly.

CERTIFICATIONS

Thermostatic head + valve systems with fixed Kv listed in the following are certified according to the European standard EN 215.

	VALVE ART.	SIZE	HEAD
028	VD 2101	DN 15	T 1000, T 2000, T 3000, T 4000, T 5000, DH 01 (OPTIMA white or black)
	VS 2102	DN 15	T 1000, T 2000, T 3000, T 4000, T 5000, DH 01 (OPTIMA white or black)
	VD 2101	DN 10 - DN 20	T 1000, T 2000, T 3000, T 4000, T 5000
	VS 2102	DN 10 - DN 20	T 1000, T 2000, T 3000, T 4000, T 5000
	VD 2103	M24(*)	T 1000, T 2000, T 3000, T 4000, T 5000
	VS 2104	M24(*)	T 1000, T 2000, T 3000, T 4000, T 5000
	VD 2105	EK(*)	T 1000, T 2000, T 3000, T 4000, T 5000
	VS 2106	EK(*)	T 1000, T 2000, T 3000, T 4000, T 5000

(*) The connection is not included in Annex A of EN 215:2004/A1:2006 standard

ACCESSORIES

DH 01. Thermostatic head (chrome, steel, white, black, gold or silver coloured surface).

T 5020. Thermostatic head with integrated command and remote wall sensor. Adjustment field 6.5÷28 °C.

T 5000. Thermostatic head with integrated command and sensor. Adjustment field 6.5÷28 °C.

T 1000. Thermostatic head with integrated command and sensor. Adjustment field 6.5÷27.5 °C.

TM 3052. Brass nut manual head.

TE 3040-TE 3041. Normally closed two-wire electrothermal head (230 V or 24 V).

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