

# High-Style valves for designer heating systems

## Convertible radiator valves and lockshields 400 series. Thermostatic control heads 200 series



### Function

Convertible radiator valves and lockshields are typically used to shut off and balance the flow rate of medium on the terminal emitters of heating and air-conditioning systems. Whereas thermostatic control heads are used in automatically regulating the ambient temperature on the set value: for this purpose convertible radiator valves can be converted from manual to thermostatic by simply replacing the control knob with the thermostatic control.

**The chrome-plating and special design of this series of products make them particularly suited to the styling requirements of designer heating systems.**

### Product range

#### VALVES

4001 Series	Convertible radiator valve and square lockshield, HIGH-STYLE, for designer heating systems	Size 1/2" radiator x 23 p.1,5 piping*
4003 Series	Convertible radiator valve with double right square and double left square lockshield, HIGH-STYLE, for designer heating systems	Size 1/2" radiator x 23 p.1,5 piping*
4004 Series	Convertible radiator valve with double left square and double right square lockshield, HIGH-STYLE, for designer heating systems	Size 1/2" radiator x 23 p.1,5 piping*
Code 387127	Multipurpose wrench for unions	from 3/8" to 1"

\*Connectable with mechanical fittings series 437 - 447 - 681 - 679

#### THERMOSTATIC CONTROL HEAD

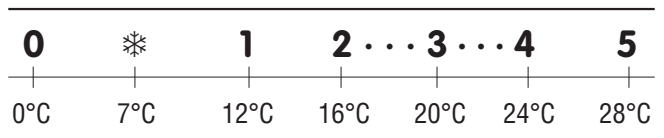
Code 200015 - Thermostatic control with built-in sensor with liquid-filled element, HIGH-STYLE, for designer heating systems. Scale of adjustment 0÷5 corresponding to 0÷28°C

- Tamperproof antitheft cap for use in public places
- Wrench for tightening tamperproof antitheft cap

### Technical specifications of valves and lockshields

Materials:	- Body: brass EN 12165 CW617N, high chrome finish
	- Control device upper port: brass EN 12164 CW614N
	- Obturator control stem: stainless steel
	- Spring: stainless steel
	- Lockshield obturator control stem: brass EN 12164 CW614N
	- Hydraulic seals: EPDM
	- Control knob: ABS, high chrome finish
	- Knob cap: PA, high chrome finish
	- Lockshield knob: brass EN 12164 CW614N, high chrome finish
	- Pipe-cover shell: ABS, high chrome finish
Valve or lockshield connections:	- 1/2" x 23 p.1,5
Medium:	water, glycol solutions
Max percentage of glycol:	30%
Max working pressure:	10 bar
Max differential pressure with control fitted:	1 bar
Temperature range:	5÷100°C

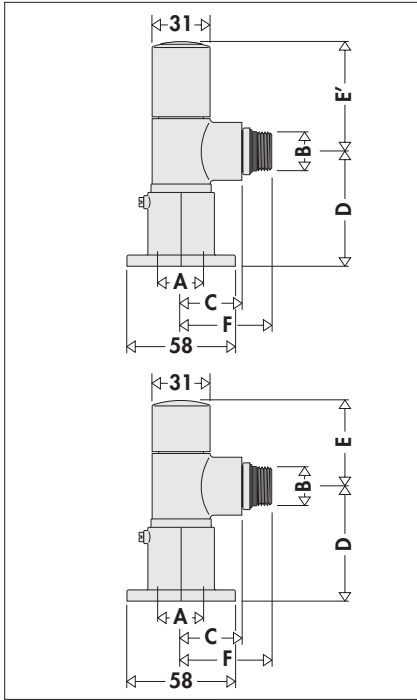
### Control adjustment range scale, 200 series



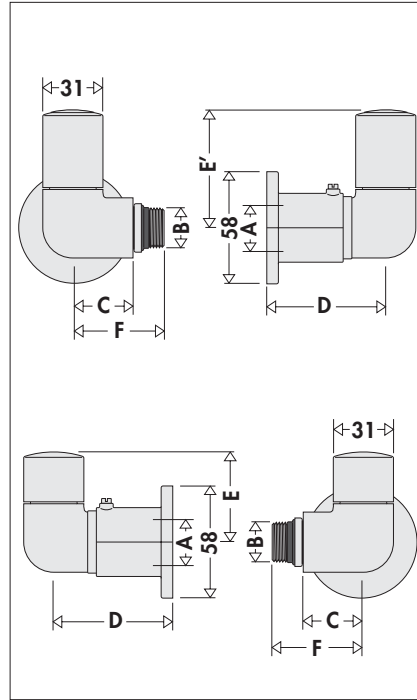
### Technical specifications of control heads 200 series

Adjustment range:	0÷5
Adjustment temperature range:	0÷28°C
Antifreeze trigger:	~ 7°C
Max ambient temperature:	50°C

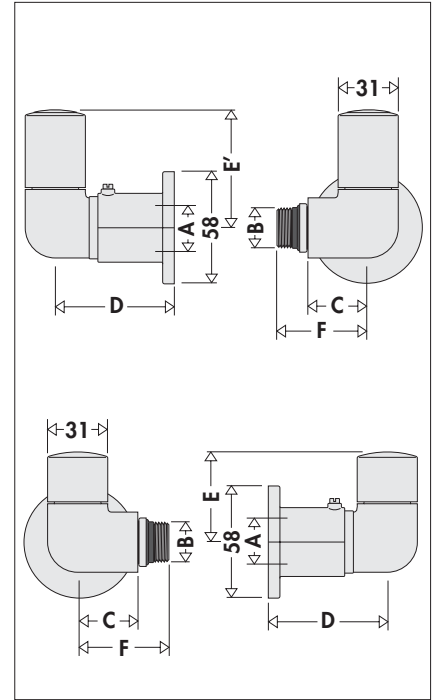
## Dimensions



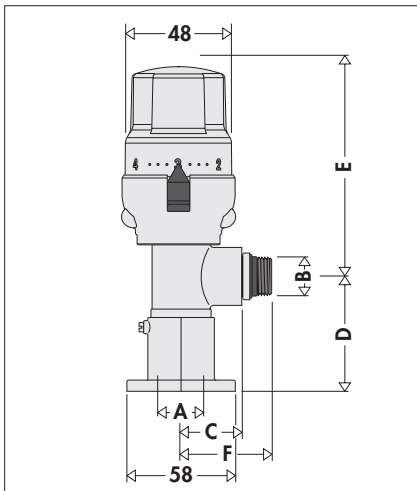
Code	A	B	C	D	E	E'	F	Weight (kg)
400100	23 p.1,5	1/2"	32,5	55+80	44	59	48,5	0,86



Code	A	B	C	D	E	E'	F	Weight (kg)
400300	23 p.1,5	1/2"	31	55+80	46,5	61	47	0,86

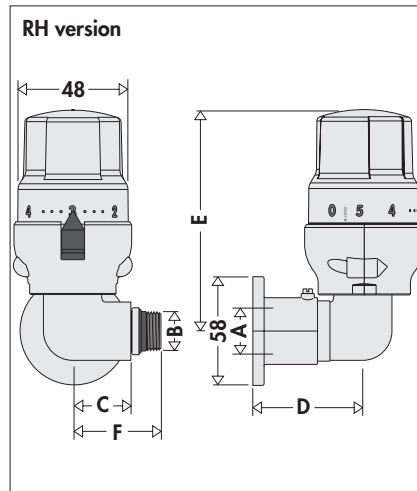


Code	A	B	C	D	E	E'	F	Weight (kg)
400400	23 p.1,5	1/2"	31	55+80	46,5	61	47	0,86



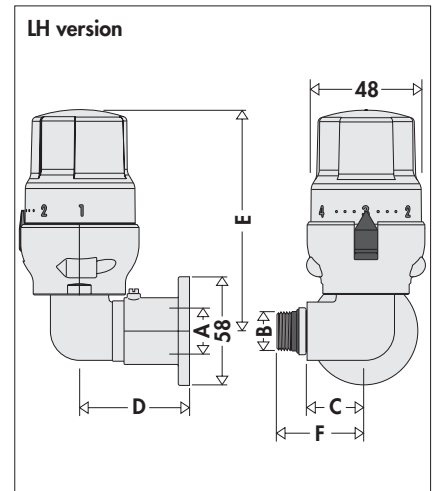
Code	A	B	C
400100 + 20001.	23 p.1,5	1/2"	32,5

Code	D	E	F	Weight (kg)
400100 + 20001.	55+80	106,5	48,5	0,55



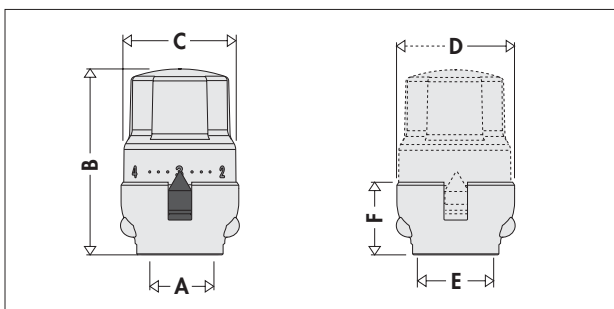
Code	A	B	C
400300 + 20001.	23 p.1,5	1/2"	31

Code	D	E	F	Weight (kg)
400300 + 20001.	55+80	109	47	0,55



Code	A	B	C
400400 + 20001.	∅ 12	1/2"	31

Code	D	E	F	Weight (kg)
400412 + 20001.	55+80	109	47	0,55

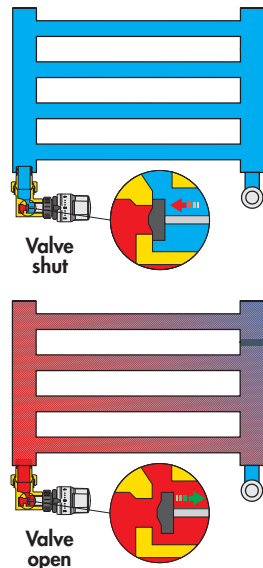


Code	A	B	C	D	E	F	Weight (kg)
20001.	30 p.1,5	80	48	52,5	35	36	0,21

## Operating principle of thermostatic control head

The control device of the thermostatic valve is a proportional temperature regulator, composed of a bellows containing a specific thermostatic medium.

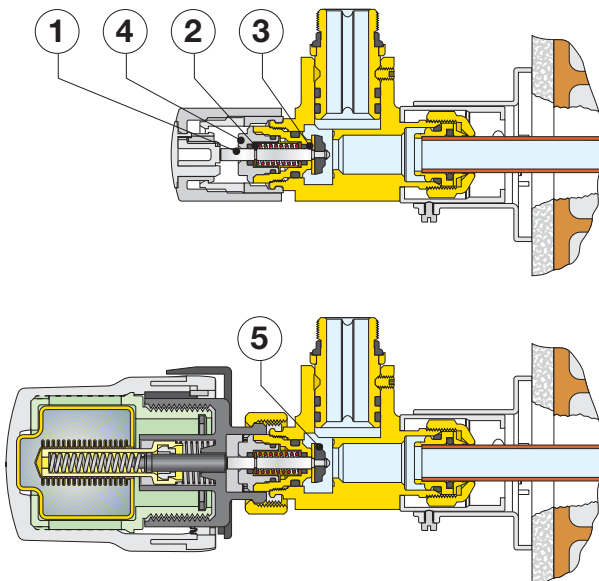
As the temperature increases, the medium increases in volume and causes the bellows to dilate. As the temperature decreases there is the opposite process; the bellows contracts due to the thrust of the counter spring. The axial movements of the sensitive element are transmitted to the valve actuator by means of the connecting stem, thereby adjusting the flow of medium in the heating body.



## Construction details

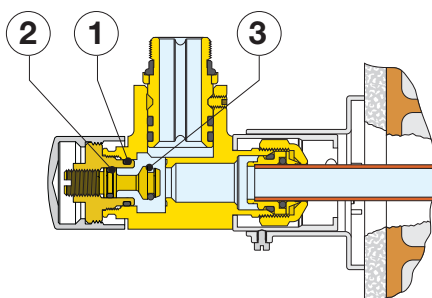
### Valve

The stainless steel control stem (1) has an EPDM double seal O-Ring (2) - (3). In this way the upper portion of the control device upper port (4) can be replaced even with the system running. The obturator (5) is shaped so as to optimize the hydraulic characteristics of the valve during the progressive action of opening or closing in thermostatic operation. The wide passage between the seat and obturator causes reduced head losses in manual operation.



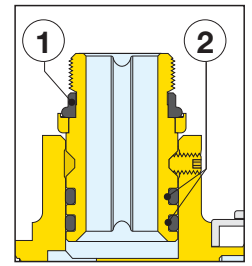
### Lockshield

The hydraulic seal of the lockshield is ensured by using the EPDM O-Rings on the control device upper port (1) and on the control stem of the lockshield (2) while the O-Ring on the obturator (3) enables shutting off the radiator completely.



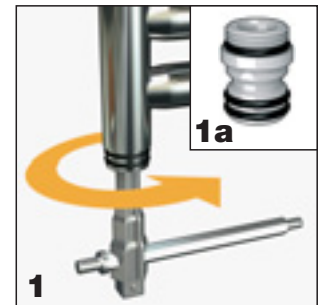
## Tailpiece with rubber seal

The coupling union to the radiator connection thread has a specially shaped rubber ring (1). This system guarantees the hydraulic seal with no need for further sealing materials, such as PTFE tapes etc. A perfect hydraulic seal with the valve body is on the other hand ensured by the double O-Ring (2).



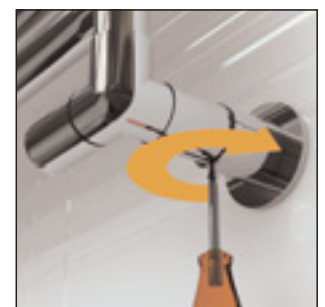
## Valve and lockshield coupling with designer heating system

The coupling between valve/lockshield and designer heating system must be made using the specific tailpiece with sealing (1a), to be screwed onto the radiator using the code 387127 Caleffi union wrench. On completing the coupling, lock the valve to the tailpiece by screwing the socket head screw into the hole shown.



## Telescopic pipe-cover shell

A chrome-plated pipe-cover shell is supplied in the package for the aesthetic requirement of covering the entire connection between the valve/lockshield and piping. The coupling between the shell and valve body is telescopic in order to adjust the distances between the valves/lockshields and the walling from where the piping comes. The shell is lastly secured to the valve with its specific screw.



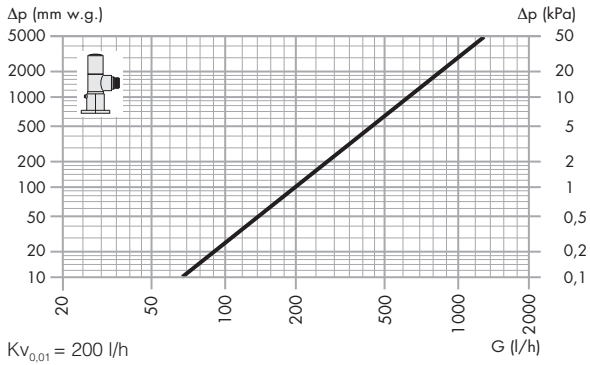
## Interchangeable lockshield and valve control device upper ports

With the system already installed there could be the drawback of having swapped over the delivery and return, causing malfunctioning and noise. To get round this problem it is possible, with the system empty, to swap over the two control device upper ports (A) and (B) of the valves.

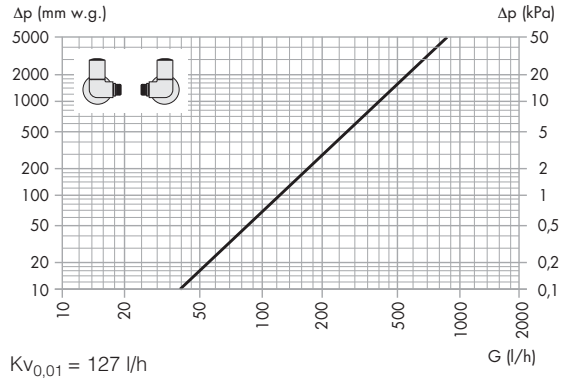


## Hydraulic characteristics

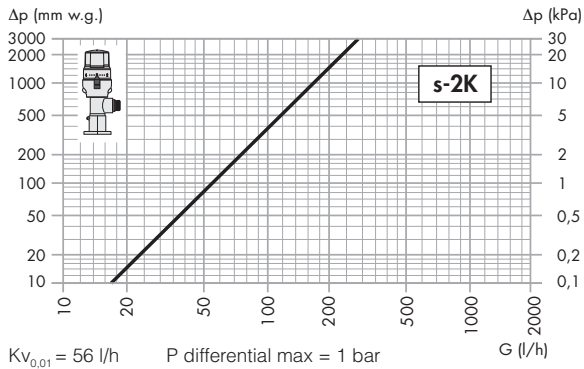
Convertible radiator valves with square connections, high-style, with manual adjustment, code 400100.



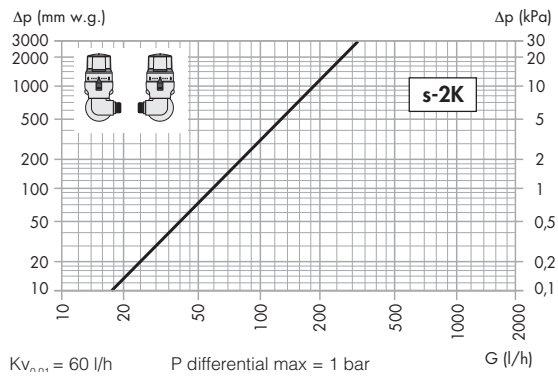
Convertible radiator valves with double square connections, high-style, with manual adjustment, code 400300/400400.



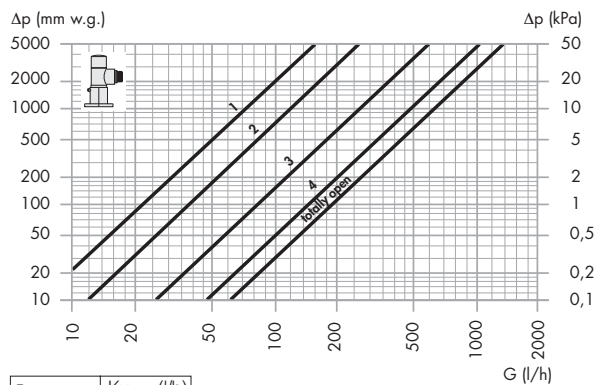
Convertible radiator valves with square connections, high-style, with thermostatic adjustment, proportional band 2K, code 400100 + 20010..



Convertible radiator valves with double square connections, high-style, with thermostatic adjustment, proportional band 2K, code 400300 + 20010. , 400400 + 20010..

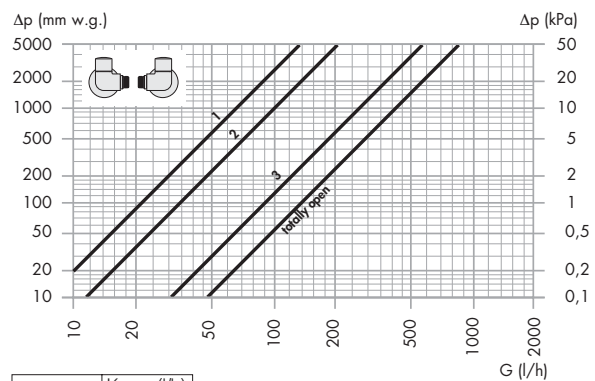


High-style lockshields, square connections, code 400100.



Reg. pos.	$Kv_{0,01}$ (l/h)
1 turn	21
2 turns	37
3 turns	84
4 turns	151
F.O.	192

High-style lockshields, double square connections, code 400300, 400400.

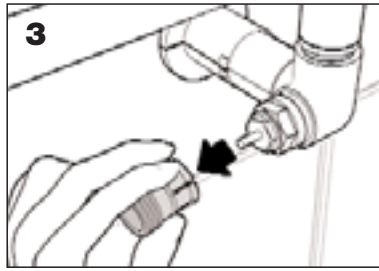
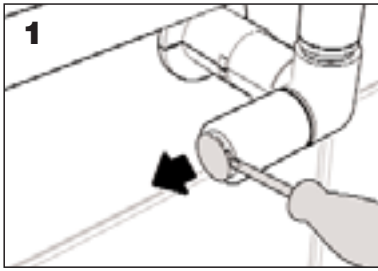


Reg. pos.	$Kv_{0,01}$ (l/h)
1 turn	21
2 turns	34
3 turns	90
4 turns	130
F.O.	137

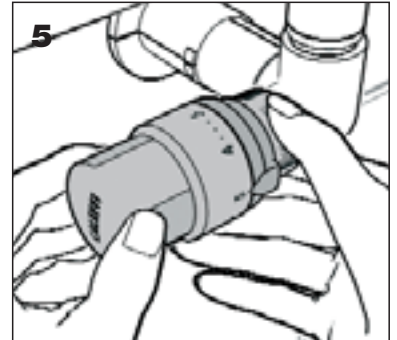
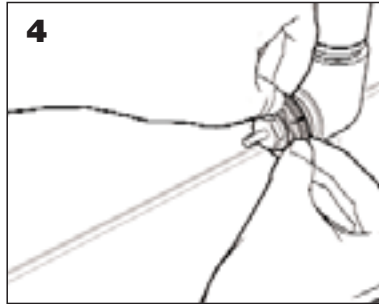
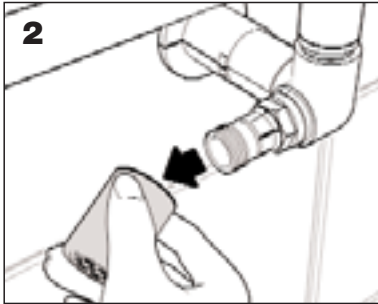
## System sizing

For correct system sizing, the valves are normally selected by identifying the pressure drop in accordance with the flow on diagrams s-2K as above (regulation with proportional band of 2K).

### Valve conversion from manual to thermostatic

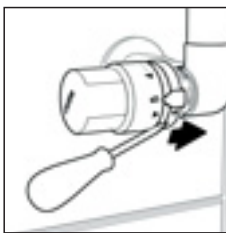


Before installing the thermostatic control turn the knob into the fully-open position (Pos. 5).

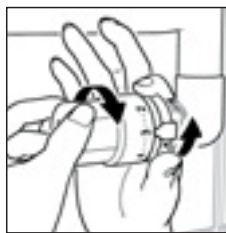


### Operations to carry out before fitting the tamperproof cap

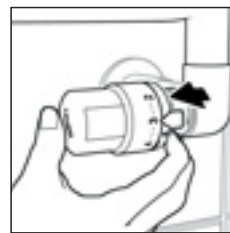
#### Temperature restriction



**1.** Turn the knob to the fully open position (Pos.5). Using a screw-driver, unlock the ring, pressing it fully towards the valve body.

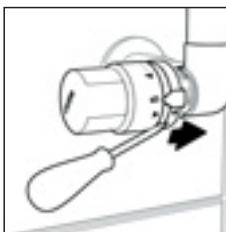


**2.** Turn the knob to the new maximum open position required (e.g. Pos.3). Turn the ring **anti-clockwise** up to the stop.

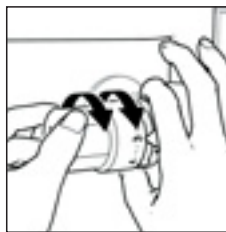


**3.** Re-lock the ring. The valve will now have a temperature range restriction from 0 to the set value.

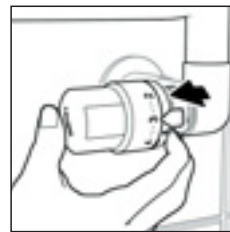
#### Locking the temperature



**1.** Turn the knob to the fully open position (Pos.5). Using a screw-driver, unlock the ring, pressing it fully towards the valve body.

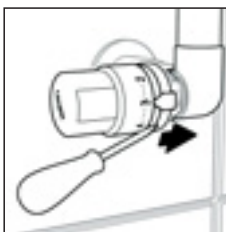


**2.** Position the valve at the required temperature and turn the ring **clockwise** up to the stop.



**3.** Re-lock the ring. The valve will now be locked at the set temperature.

#### Resetting the temperature restriction and temperature lock



**1.** Using a screw-driver, unlock the ring, pressing it fully towards the valve body.



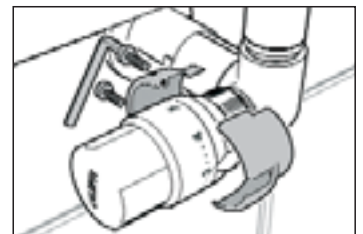
**2.** Turn the knob to the fully open position and the ring **anti-clockwise**, up to the stop. The RESET arrows will match up.



**3.** Re-lock the ring. The valve will now no longer have any temperature restriction or lock.

### Tamperproof and antitheft cap

The tamperproof and antitheft version of the thermostatic control is obtained by fitting the cap on the knob as shown hereunder. It is secured with two screws equipped with a special head that can only be tightened by using the appropriate wrench.





## SPECIFICATION SUMMARIES

### 4001 Series

Square convertible radiator valve and lockshield HIGH-STYLE for designer heating systems, high chrome finish; valve fitted for thermostatic and electro-thermal controls. Connections for piping 23 p.1,5. Connection to the radiator 1/2" M with EPDM pre-seal nipples supplied. Brass body. ABS valve knob and PA cap, chrome-plated. Brass lockshield knob, chrome-plated. Stainless steel obturator control stem and stainless steel valve spring. Brass lockshield obturator control stem, chrome-plated. Valve with double seal on the control stem with EPDM O-Ring. Brass control device upper port, chrome-plated ABS pipe-cover shells, chrome-plated. Allen wrench for tightening valve. Medium: water and glycol solutions; Maximum percentage of glycol 30%. Maximum working pressure 10 bar. Max differential pressure with control fitted 1 bar. Temperature range 5÷100°C.

### 4003 Series

Right double square convertible radiator valves valve and left double square lockshield HIGH-STYLE for designer heating systems, high chrome finish; valve fitted for thermostatic and electro-thermal controls. Connections for piping 23 p.1,5. Connection to the radiator 1/2" M with EPDM pre-seal nipples supplied. Brass body. ABS valve knob and PA cap, chrome-plated. Brass lockshield knob, chrome-plated. Stainless steel obturator control stem and stainless steel valve spring. Brass lockshield obturator control stem, chrome-plated. Valve with double seal on the control stem with EPDM O-Ring. Brass control device upper port, chrome-plated ABS pipe-cover shells, chrome-plated. Allen wrench for tightening valve. Medium: water and glycol solutions; Maximum percentage of glycol 30%. Maximum working pressure 10 bar. Max differential pressure with control fitted 1 bar. Temperature range 5÷100°C.

### 4004 Series

Left double square convertible radiator valves valve and right double square lockshield HIGH-STYLE for designer heating systems, high chrome finish; valve fitted for thermostatic and electro-thermal controls. Connections for piping 23 p.1,5. Connection to the radiator 1/2" M with EPDM pre-seal nipples supplied. Brass body. ABS valve knob and PA cap, chrome-plated. Brass lockshield knob, chrome-plated. Stainless steel obturator control stem and stainless steel valve spring. Brass lockshield obturator control stem, chrome-plated. Valve with double seal on the control stem with EPDM O-Ring. Brass control device upper port, chrome-plated ABS pipe-cover shells, chrome-plated. Allen wrench for tightening valve. Medium: water and glycol solutions; Maximum percentage of glycol 30%. Maximum working pressure 10 bar. Max differential pressure with control fitted 1 bar. Temperature range 5÷100°C.

### Code 200015

- Thermostatic control for HIGH-STYLE convertible radiator valves or thermostatic radiator valves for designer heating systems. Sensor incorporated with liquid-sensitive element. High chrome finish. Maximum working pressure 10 bar. Max differential pressure with control fitted 1 bar. Temperature range 5÷100°C. Max ambient temperature 50°C. Graduated scale from 0 to 5 corresponding to a temperature adjustment range from 0 to 28°C, with the possibility of locking and limiting the temperature. Antifreeze trigger ~7°C.
- Tamperproof antitheft cap for thermostatic control head, for use in public places, high chrome finish.
- Special wrench for tightening tamperproof antitheft cap, code 209004.

### Code 387127

Multipurpose wrench. Can be used for unions from 3/8" to 1".

*We reserve the right to change our products and their relevant technical data contained in this publication at any time and without prior notice.*

