Convertible radiator valves with thermostatic option
Thermostatic control heads

series 338 - 401

series 200

cert. n° 0003 ISO 9001

01009/01 GB

Function

The following series of convertible radiator valves are typically used for controlling the fluid in the emitters of central heating systems. These special valves can be converted from manual to thermostatic operation by simple replacement of the adjusting knob with a thermostatic control head. This means that the ambient temperature of any room in which they are installed can be constantly maintained at the set value.

These valves have a special tailpiece with rubber hydraulic seal, permitting quick, safe connection to the radiator without the use of additional sealing materials.

Product range

VALVES:

For copper and plastic piping: LINEA 3

Series 338	Elbow radiator valve with thermostatic option	Sizes 3/8", 1/2" radiator x 23 p.1,5 piping
Series 339	Straight radiator valve with thermostatic option	Sizes 3/8", 1/2" radiator x 23 p.1,5 piping
Series 342	Elbow radiator lockshield valve	Sizes 3/8", 1/2" radiator x 23 p.1,5 piping
Series 343	Straight radiator lockshield valve	Sizes 3/8", 1/2" radiator x 23 p.1,5 piping

For steel piping:

Series 401	Elbow radiator valve with thermostatic option	Sizes 3/8", 1/2", 3/4", 1" (*)
Series 402	Straight radiator valve with thermostatic option	Sizes 3/8", 1/2", 3/4", 1" (*)
Series 431	Elbow radiator lockshield valve	Sizes 3/8", 1/2", 3/4", 1" (*)
Series 432	Elbow radiator lockshield valve	Sizes 3/8", 1/2", 3/4", 1" (*)

THERMOSTATIC CONTROLS

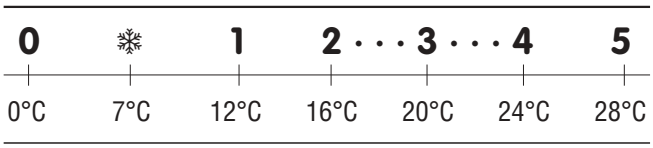
Series 200	Thermostatic head with built-in liquid-filled sensor	Regulating scale 0÷5 corresponding to 0÷28°C
Series 201	Thermostatic head with remote liquid-filled sensor	Regulating scale 0÷5 corresponding to 0÷28°C
Series 203	Thermostatic head with contact sensor for fluid temperature limitation	Graduated scale 20÷50°C, 40÷70°C
Series 209	Theft and tamper-proof cover for use in public places	For series 200 controls

* *3/4" and 1" have tailpieces without rubber seals*

Technical specification of radiator and lockshield valves

- Materials: - Body:	brass UNI EN 12165 CW617N, chrome plated
- Obturator control spindle:	stainless steel
- Hydraulic seals:	EPDM
- Control knob and cap:	ABS (RAL 9010)
Fluid:	water, glycol solutions
Max percentage of glycol:	30%
Max working pressure:	10 bar
Temperature range:	5÷100°C

Control adjustment scale, series 200/201



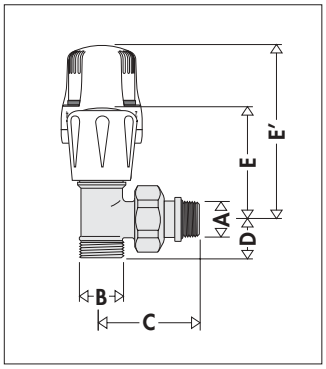
Technical specification of controls series 200/201

Scale of adjustment:	0÷5
Temperature adjustment range:	0÷28°C
Frost protection cut-in:	7°C
Max ambient temperature:	50°C
Length of capillary tube, series 201:	2 m

Technical specification of controls series 203

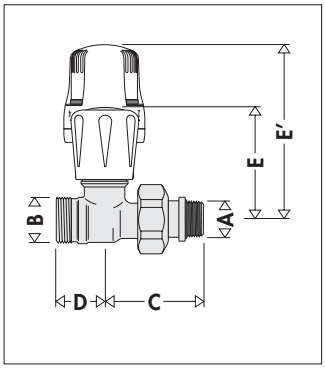
Temperature adjustment range:	- code 203502	20÷50°C
	- code 203702	40÷70°C
Max sensor temperature:		80°C
Max pocket pressure:		10 bar
Length of capillary tube:		2 m

Dimensions



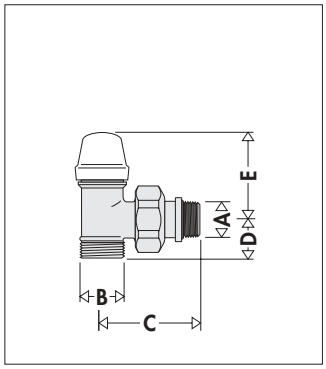
Code	A	B	C
338302	3/8"	23 p.1,5	47,5
338402	1/2"	23 p.1,5	53,5

Code	D	E	E'
338302	20,5	51,5	100
338402	20,5	51,5	100



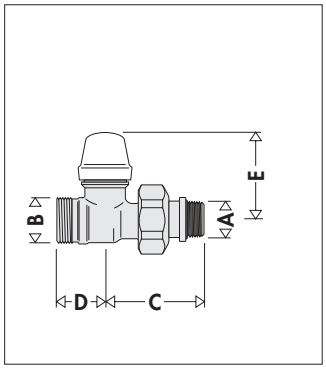
Code	A	B	C
339302	3/8"	23 p.1,5	47,5
339402	1/2"	23 p.1,5	53,5

Code	D	E	E'
339302	24	55	103
339402	24	55	103



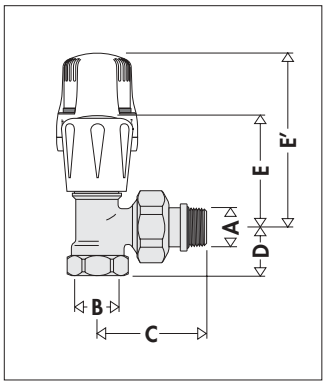
Code	A	B	C
342302	3/8"	23 p.1,5	47,5
342402	1/2"	23 p.1,5	53,5

Code	D	E
342302	20,5	39
342402	20,5	39



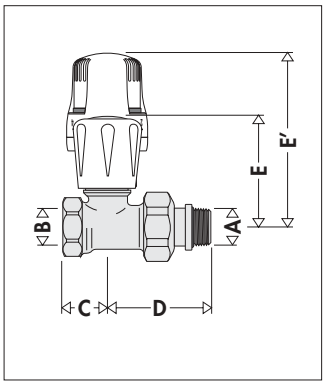
Code	A	B	C
343302	3/8"	23 p.1,5	47,5
343402	1/2"	23 p.1,5	53,5

Code	D	E
343302	24	44,5
343402	24	44,5



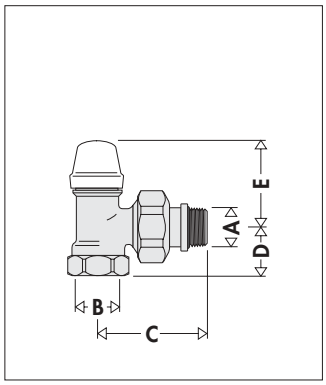
Code	A	B	C
401302	3/8"	3/8"	47,5
401402	1/2"	1/2"	53,5
401500	3/4"	3/4"	62,5
401603	1"	1"	70,5

Code	D	E	E'
401302	20	51,5	100
401402	23	51,5	100
401500	25	60,5	108
401603	30,5	77,5	125



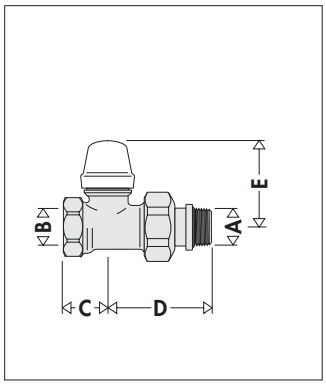
Code	A	B	C
402302	3/8"	3/8"	21
402402	1/2"	1/2"	22
402500	3/4"	3/4"	30
402603	1"	1"	38

Code	D	E	E'
402302	46,5	55	103
402402	52	55	103
402500	59,5	66	112
402603	63,5	81,5	127,5



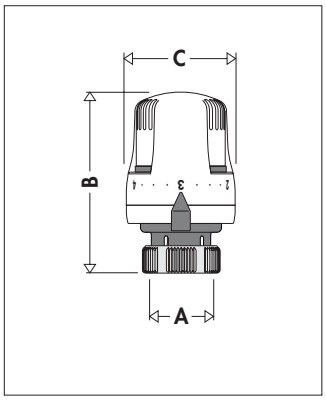
Code	A	B	C
431302	3/8"	3/8"	47,5
431402	1/2"	1/2"	53,5
431503	3/4"	3/4"	62,5
431603	1"	1"	70,5

Code	D	E
431302	20	38
431402	23	38
431503	25	47
431603	30,5	47,5

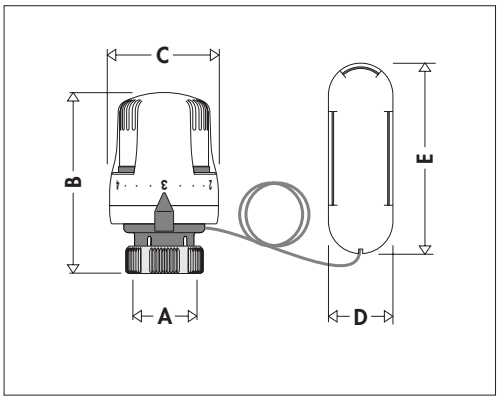


Code	A	B	C
432302	3/8"	3/8"	21
432402	1/2"	1/2"	22
432503	3/4"	3/4"	30
432603	1"	1"	38

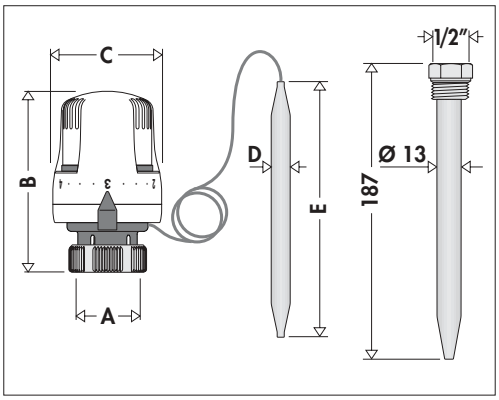
Code	D	E
432302	46,5	44,5
432402	52	44,5
432503	59,5	49,5
432603	63,5	51,5



Code	A	B	C
200000	30 p.1,5	80	48



Code	A	B	C	D	E
201000	30 p.1,5	80	48	33	95

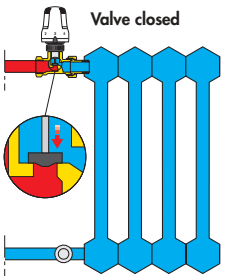


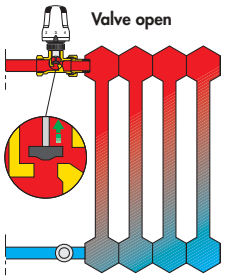
Code	A	B	C	D	E
203000	30 p.1,5	80	48	Ø 11	158

Operating principle of thermostatic control

The thermostatic valve control head is a proportional temperature regulator, consisting of bellows containing liquid.

When the ambient temperature increases, the consequent build-up in pressure causes an expansion in volume in the bellows, which, in turn, dilate. When the temperature falls, the reverse takes place; the bellows contract due to the effect of the thrust generated by the return spring. The axial movement of the sensitive element is trasmitted to the valve obturator through the connecting spindle, thus regulating the flow of liquid to the heat emitter.



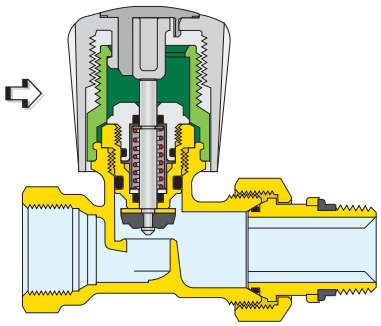


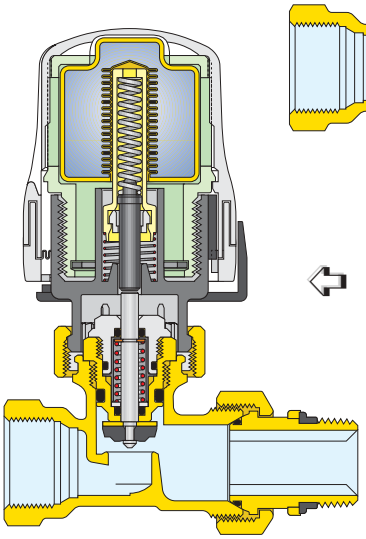
Construction details

Valve

The control spindle is stainless steel with EPDM O-Ring double seal. This means that the upper part of the control device can be replaced even when the system is in operation.
The obturator is shaped in such a way as to optimise the fluid-dynamic characteristics of the valve during the progressive opening and closing actions in thermostatic operation. The large passage between seat and obturator causes reduced pressure drops in manual use.

Convertible valve with manual control

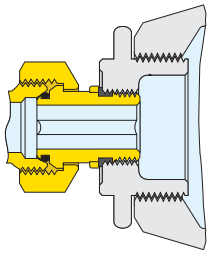




Convertible valve with thermostatic control

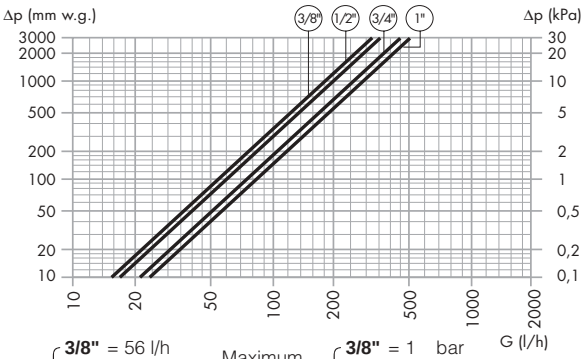
Tailpiece with rubber seal

The coupling union to the radiator connection thread has a specially shaped rubber ring. This system guarantees the hydraulic seal with no need for further sealing materials, such as PTFE tapes etc.



Hydraulic characteristics

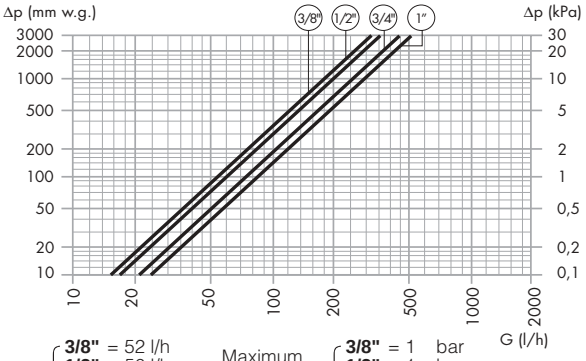
Convertible radiator valves with elbow connections, series 338 and series 401 with thermostatic regulation, proportional band 2K



$Kv_{0,01}$ { **3/8"** = 56 l/h; **1/2"** = 56 l/h; **3/4"** = 70 l/h; **1"** = 78 l/h }

Maximum differential pressure { **3/8"** = 1 bar; **1/2"** = 1 bar; **3/4"** = 1 bar; **1"** = 0,6 bar }

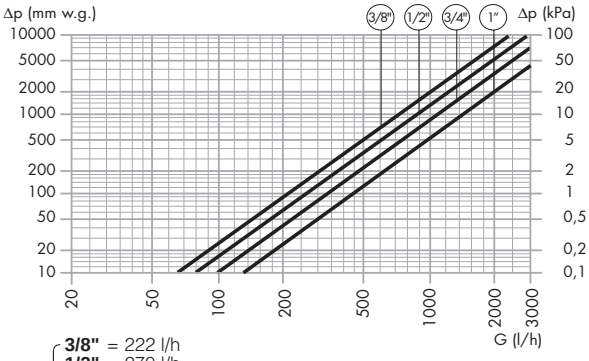
Convertible radiator valves with straight connections, series 339 and series 402 with thermostatic regulation, proportional band 2K



$Kv_{0,01}$ { **3/8"** = 52 l/h; **1/2"** = 56 l/h; **3/4"** = 65 l/h; **1"** = 77 l/h }

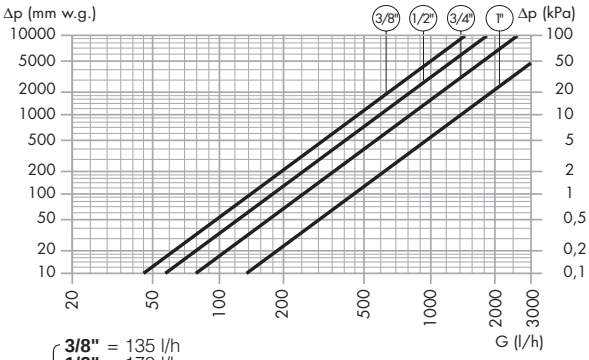
Maximum differential pressure { **3/8"** = 1 bar; **1/2"** = 1 bar; **3/4"** = 1 bar; **1"** = 0,6 bar }

Convertible radiator valves with elbow connections, series 338 and series 401 with manual regulation



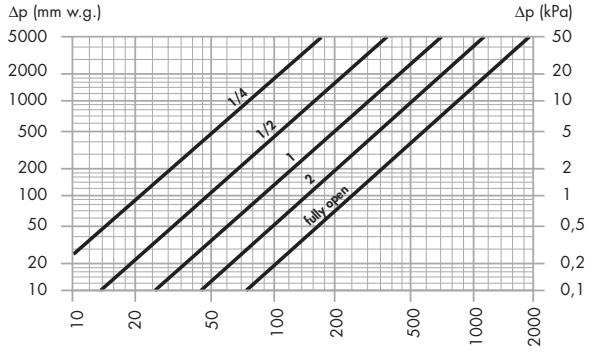
$Kv_{0,01}$ { **3/8"** = 222 l/h; **1/2"** = 270 l/h; **3/4"** = 336 l/h; **1"** = 447 l/h }

Convertible radiator valves with straight connections, series 339 and series 402 with manual regulation



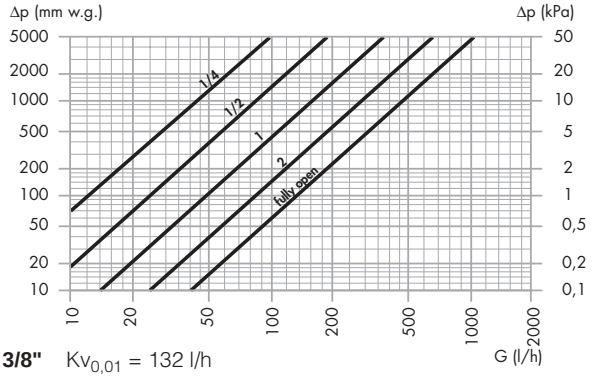
$Kv_{0,01}$ { **3/8"** = 135 l/h; **1/2"** = 179 l/h; **3/4"** = 258 l/h; **1"** = 443 l/h }

Elbow lockshield valves 3/8", series 342 and series 431



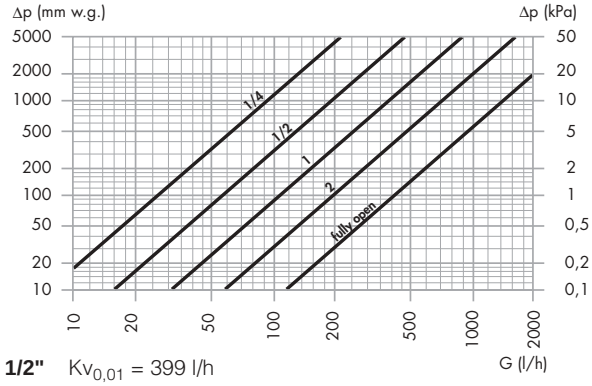
3/8" $Kv_{0,01}$ = 242 l/h

Straight lockshield valves 3/8", series 343 and series 432



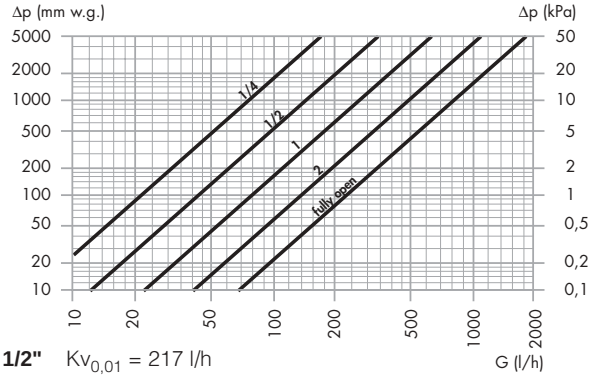
3/8" $Kv_{0,01}$ = 132 l/h

Elbow lockshield valves 1/2", series 342 and series 431



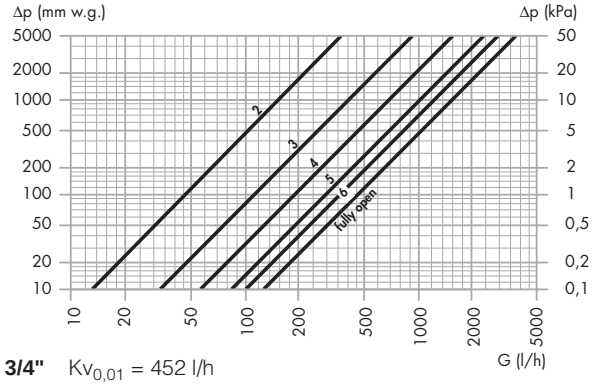
1/2" $Kv_{0,01}$ = 399 l/h

Straight lockshield valves 1/2", series 343 and series 432



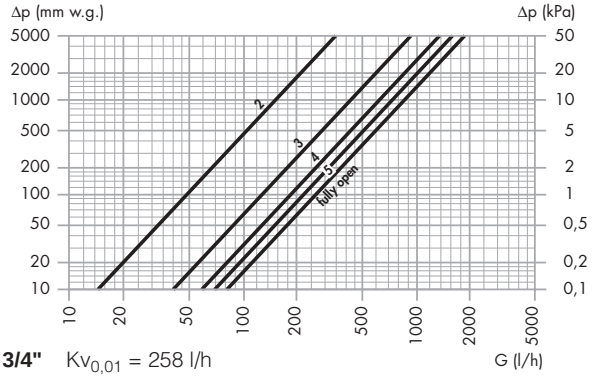
1/2" $Kv_{0,01}$ = 217 l/h

Elbow lockshield valves 3/4", series 431



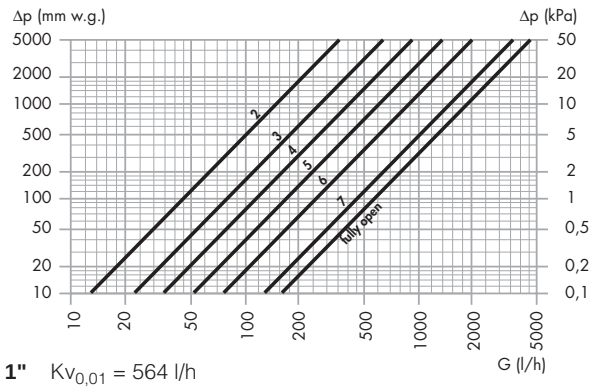
3/4" $Kv_{0,01}$ = 452 l/h

Straight lockshield valves 3/4", series 432



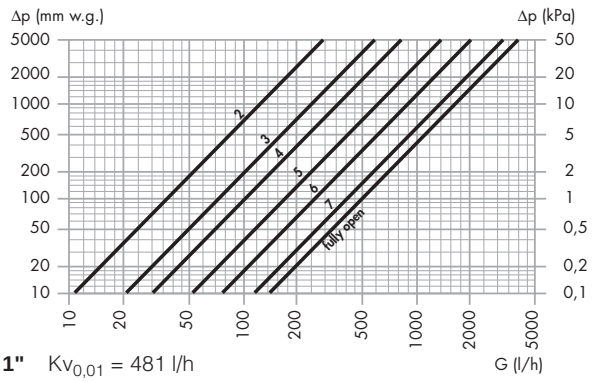
3/4" $Kv_{0,01}$ = 258 l/h

Elbow lockshield valves 1", series 431



1" $Kv_{0,01}$ = 564 l/h

Straight lockshield valves 1", series 432



1" $Kv_{0,01}$ = 481 l/h

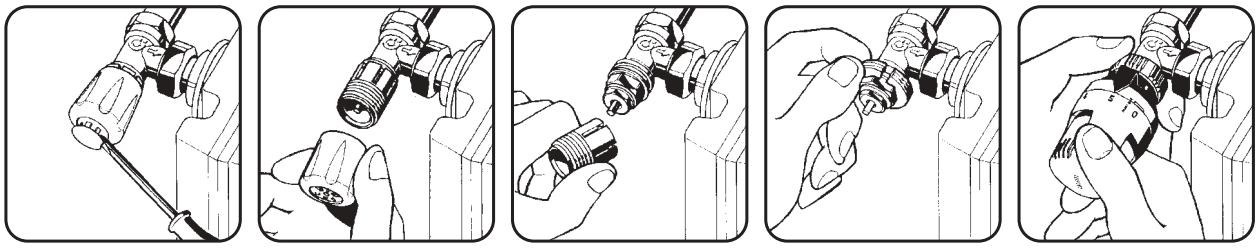
Values of nominal capacities and equivalent lengths

COPPER PIPING							
TYPE	Rad. con.	Pipe con.	Int/ext pipe ∅ (mm)	STRAIGHT		ELBOW	
				$Kv_{0,01}$ (l/h)	e.l. (m)	$Kv_{0,01}$ (l/h)	e.l. (m)
Manually adjustable convertible valve	3/8"	23 p.1,5	8/10	135	0,8	222	0,3
Manually adjustable convertible valve	3/8"	23 p.1,5	10/12	135	2,5	222	0,9
Manually adjustable convertible valve	3/8"	23 p.1,5	12/14	135	6,6	222	2,4
Manually adjustable convertible valve	3/8"	23 p.1,5	13/15	135	10,1	222	3,7
Manually adjustable convertible valve	3/8"	23 p.1,5	14/16	135	14,8	222	5,5
Manually adjustable convertible valve	3/8"	23 p.1,5	16/18	135	29,9	222	11,1
Manually adjustable convertible valve	1/2"	23 p.1,5	8/10	179	0,5	270	0,2
Manually adjustable convertible valve	1/2"	23 p.1,5	10/12	179	1,4	270	0,6
Manually adjustable convertible valve	1/2"	23 p.1,5	12/14	179	3,7	270	1,6
Manually adjustable convertible valve	1/2"	23 p.1,5	13/15	179	5,7	270	2,5
Manually adjustable convertible valve	1/2"	23 p.1,5	14/16	179	8,4	270	3,7
Manually adjustable convertible valve	1/2"	23 p.1,5	16/18	179	17,0	270	7,5

STEEL PIPING							
TYPE	Rad. con.	Pipe con.	Int/ext pipe ∅ (mm)	STRAIGHT		ELBOW	
				$Kv_{0,01}$ (l/h)	e.l. (m)	$Kv_{0,01}$ (l/h)	e.l. (m)
Manually adjustable convertible valve	3/8"	3/8"	12,7/16,7	135	7,2	222	2,7
Manually adjustable convertible valve	1/2"	1/2"	16,3/21,0	179	15,3	270	6,7
Manually adjustable convertible valve	3/4"	3/4"	21,7/26,4	258	33,2	336	19,6
Manually adjustable convertible valve	1"	1"	27,4/33,2	443	38,5	447	37,8

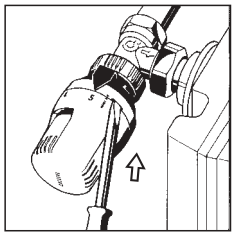
PLASTIC PIPING							
Manually adjustable convertible valve	3/8"	23 p.1,5	8/12	135	0,8	222	0,3
Manually adjustable convertible valve	3/8"	23 p.1,5	10/15	135	2,5	222	0,9
Manually adjustable convertible valve	3/8"	23 p.1,5	12/16	135	6,6	222	2,4
Manually adjustable convertible valve	3/8"	23 p.1,5	13/18	135	10,1	222	3,7
Manually adjustable convertible valve	3/8"	23 p.1,5	14/18	135	14,8	222	5,5
Manually adjustable convertible valve	1/2"	23 p.1,5	8/12	179	0,5	270	0,2
Manually adjustable convertible valve	1/2"	23 p.1,5	10/15	179	1,4	270	0,6
Manually adjustable convertible valve	1/2"	23 p.1,5	12/16	179	3,7	270	1,6
Manually adjustable convertible valve	1/2"	23 p.1,5	13/18	179	5,7	270	2,5
Manually adjustable convertible valve	1/2"	23 p.1,5	14/18	179	8,4	270	3,7

Converting manual valves to thermostatic control

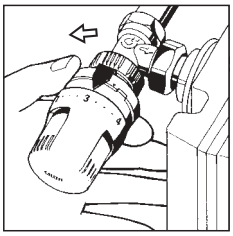


Locking and restricting the thermostat control temperature

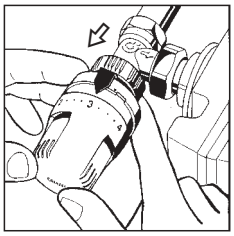
Temperature restriction



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.

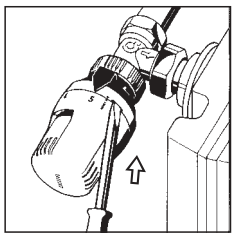


2. Turn the knob to the new maximum open position required (e.g. Pos. 3). Turn the ring **anti-clockwise** up to the stop.

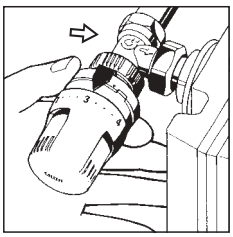


3. Re-lock the ring. The valve will now have a temperature range restriction from 0 to the set value.

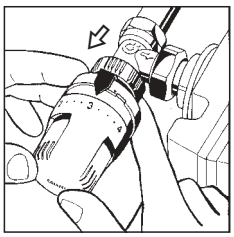
Locking the temperature



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.

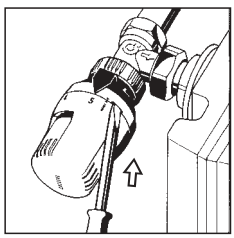


2. Position the valve at the required temperature and turn the ring **clockwise** up to the stop.

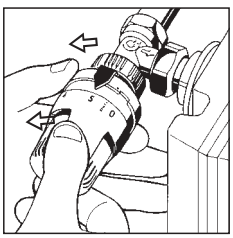


3. Re-lock the ring. The valve will now be locked at the set temperature.

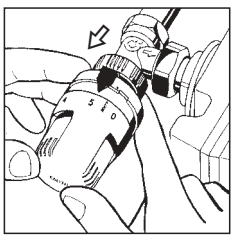
Resetting the temperature restriction and temperature lock



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.

SPECIFICATION SUMMARIES

Series 338
Convertible valve for radiators suitable for thermo-electric actuator and thermostatic controls. Elbow connections for copper and single and multilayer plastic pipes 23 p.1,5 for sizes from 10 to 18 mm. Radiator connection 3/8" and 1/2" M with tailpiece provided with EPDM seal. Brass body. Chrome plated. Control knob white RAL 9010, for manual control, in ABS. Stainless steel control spindle. Double seal on control spindle with EPDM O-Rings. Maximum working temperature 100°C. Maximum working pressure 10 bar.

Series 339
Convertible valve for radiators suitable for thermo-electric actuator and thermostatic controls. Straight connections for copper and single and multilayer plastic pipes 23 p.1,5 for sizes from 10 to 18 mm. Radiator connection 3/8" or 1/2" M with tailpiece provided with EPDM seal. Brass body. Chrome plated. Control knob white RAL 9010, for manual control, in ABS. Stainless steel control spindle. Double seal on control spindle with EPDM O-Rings. Maximum working temperature 100°C. Maximum working pressure 10 bar.

Series 342
Lockshield valve. Elbow connections for copper and single and multilayer plastic pipes 23 p.1,5 for sizes from 10 to 18 mm. Radiator connection 3/8" or 1/2" M with tailpiece provided with EPDM seal. Brass body. Chrome plated. Cap white RAL 9010 in ABS. Outward seal consisting of EPDM O-Ring on control spindle. Maximum working temperature 100°C. Maximum working pressure 10 bar.

Series 343
Lockshield valve. Straight connections for copper and single and multilayer plastic pipes 23 p.1,5 for sizes from 10 to 18 mm. Radiator connection 3/8" and 1/2" M with tailpiece provided with EPDM seal. Brass body. Chrome plated. Cap white RAL 9010 in ABS. Outward seal consisting of EPDM O-Ring on control spindle. Maximum working temperature 100°C. Maximum working pressure 10 bar.

Series 401
Convertible valve for radiators suitable for thermo-electric actuator and thermostatic controls. Elbow connections for steel pipes 3/8", 1/2", 3/4" or 1" F. Radiator connection 3/8" or 1/2" M with tailpiece provided with EPDM seal, 3/4" and 1" M with tailpiece without seal. Brass body. Chrome plated. Control knob white RAL 9010, for manual control, in ABS. Stainless steel control spindle. Double seal on control spindle with EPDM O-Rings. Maximum working temperature 100°C. Maximum working pressure 10 bar.

Series 402
Convertible valve for radiators suitable for thermo-electric actuator and thermostatic controls. Straight connections for steel pipes 3/8", 1/2", 3/4" or 1" F. Radiator connection 3/8" or 1/2" M with tailpiece provided with EPDM seal, 3/4" and 1" M with tailpiece without seal. Brass body. Chrome plated. Control knob white RAL 9010, for manual control, in ABS. Stainless steel control spindle. Double seal on control spindle with EPDM O-Rings. Maximum working temperature 100°C. Maximum working pressure 10 bar.

Series 431
Lockshield valve. Elbow connections for steel pipes 3/8", 1/2", 3/4" or 1" F. Radiator connection 3/8" or 1/2" M with tailpiece provided with EPDM seal, 3/4" and 1" M with tailpiece without seal. Brass body. Chrome plated. Cap white RAL 9010 in ABS. Outward seal consisting of EPDM O-Ring on control spindle. Maximum working temperature 100°C. Maximum working pressure 10 bar.

Series 432
Lockshield valve. Straight connections for steel pipes 3/8", 1/2", 3/4" or 1" F. Radiator connection 3/8" or 1/2" M with tailpiece provided with EPDM seal, 3/4" and 1" M with tailpiece without seal. Brass body. Chrome plated. Cap white RAL 9010 in ABS. Outward seal consisting of EPDM O-Ring on control spindle. Maximum working temperature 100°C. Maximum working pressure 10 bar.

Series 200
Thermostatic control head for convertible radiator valves. Sensor built-in with liquid-filled element. Maximum ambient temperature 50°C. Graduated scale from 0 to 5 corresponding to a temperature range of 0 to 28°C, with possibility of temperature restriction and locking. Frost protection cut-in at 7°C.

Series 201
Thermostatic control head for convertible radiator valves. Remote sensor incorporated with liquid-filled element. Maximum ambient temperature 50°C. Graduated scale from 0 to 5 corresponding to a temperature range of 0 to 28°C, with possibility of temperature restriction and locking. Frost protection cut-in at 7°C.

Series 203
Thermostatic control head with contact probe, for fluid temperature restriction. Range of temperature adjusment 20÷50°C (40÷70°C). Maximum sensor temperature 80°C. Numbered scale, with possibility of temperature restriction and locking. Capillary length 2m.

Series 209
Theft and tamper-proof cover for thermostatic control head, for use in public places.

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

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