

Thermostatic radiator valves for towel warmer style radiators

338–343, 200 series



01009/13 NA



Function

Convertible radiator valves are typically used in North America for controlling the fluid to towel warmer style radiators. 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.

The radiator isolation and balancing valves have a removal protective cap, when removed exposes the allen head screw for adjusting the valve plug position.

Product range

VALVES:

For copper, single and multi-layer PEX pipes

338 series	Angled convertible radiator valve body	metric connections 1/2" radiator x 3/4" conical pipe
339 series	Straight convertible radiator valve body	metric connections 1/2" radiator x 3/4" conical pipe
342 series	Angled radiator isolation and balancing valves	metric connections 1/2" radiator x 3/4" conical pipe
343 series	Straight radiator isolation and balancing valves	metric connections 1/2" radiator x 3/4" conical pipe

THERMOSTATIC CONTROL HEADS:

200 series	Thermostatic control head, built-in sensor with liquid-filled element	graduated scale *–5 corresponding to 45–82°F (7–28°C)
------------	---	---

Technical specification of radiator valve bodies and isolation/balancing valves

Materials - body:	brass chrome plated
- valve control stem:	stainless steel
- seals:	EPDM
- valve control knob and cap:	ABS (RAL 9010)

Performance

Suitable fluids:	water, glycol solutions
Max. percentage of glycol:	30%
Max. differential pressure assembled with control head:	15 psi (1 bar)
Max. working pressure:	150 psi (10 bar)
Temperature range:	40–212°F (5–100°C)

Technical specification of control head 200000

Scale of adjustment:	0–5
Setting temperature range:	45–82°F (7–28°C)
Frost protection cut-in:	45°F (7°C)
Max. ambient temperature:	120°F (50°C)

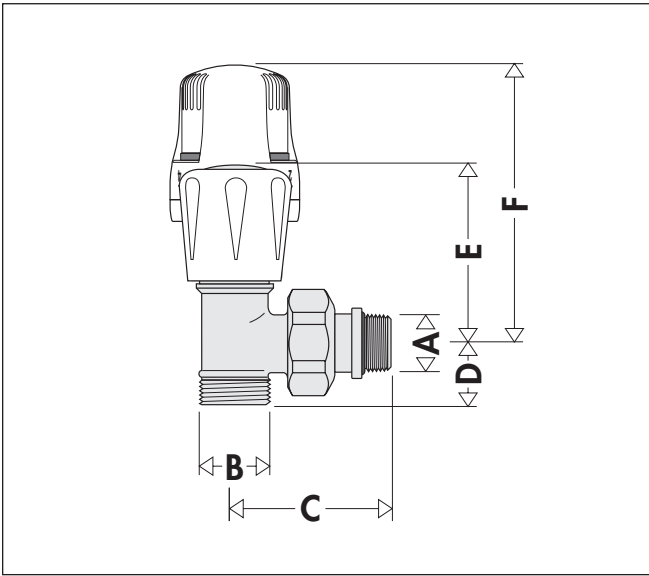
Approval:

Combined with 338/339 valve bodies: UNI EN 215: 1990

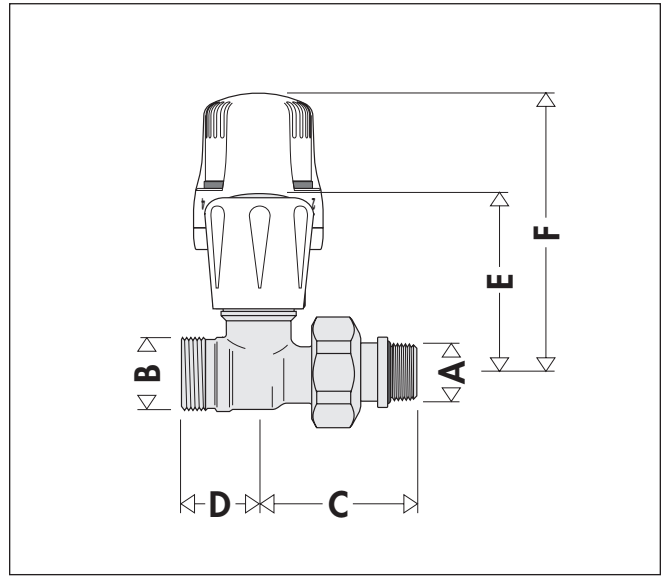
Control adjustment scale, control head 200000

0	*	1	2	3	4	5
32°F	45°F	55°F	60°F	68°F	75°F	82°F
0°C	7°C	12°C	16°C	20°C	24°C	28°C

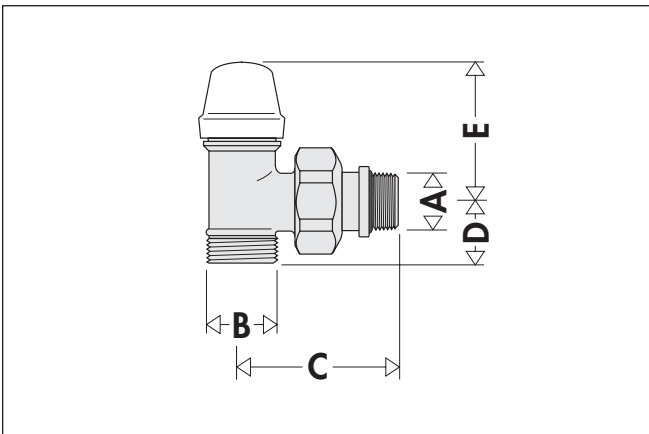
Dimensions



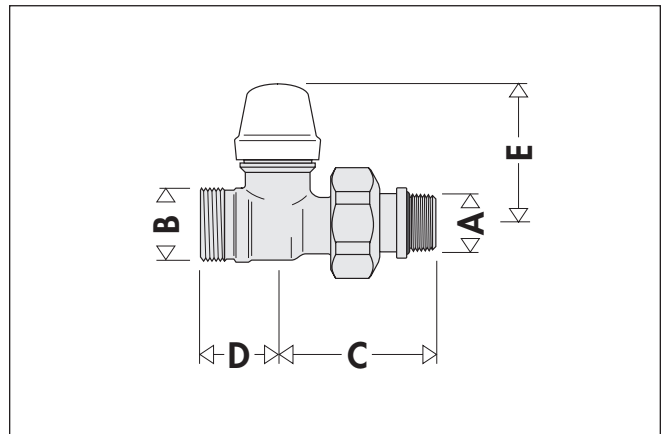
Code	A	B	C	D	E	F	Wt. (lb.)
338452	1/2" straight	3/4" conical	2 1/8"	7/8"	2 1/32"	3 15/16"	0.5



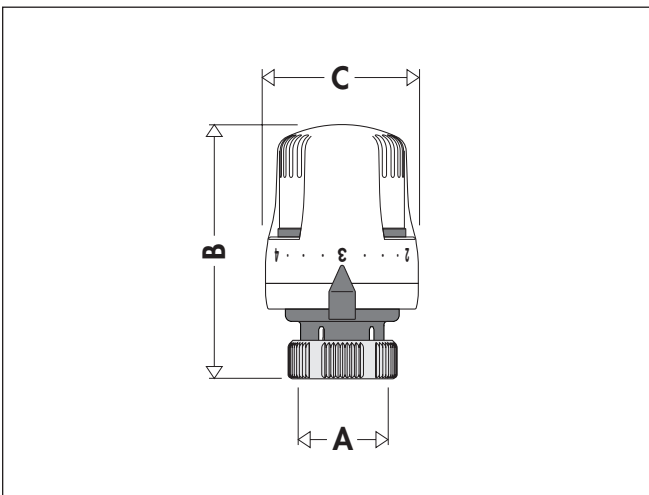
Code	A	B	C	D	E	F	Wt. (lb.)
339452	1/2" straight	3/4" conical	2 1/8"	1"	2 3/16"	4 1/16"	0.5



Code	A	B	C	D	E	Wt. (lb.)
342452	1/2" straight	3/4" conical	2 1/8"	7/8"	1 1/2"	0.5



Code	A	B	C	D	E	Wt. (lb.)
343452	1/2" straight	3/4" conical	2 1/8"	1"	1 3/4"	0.5



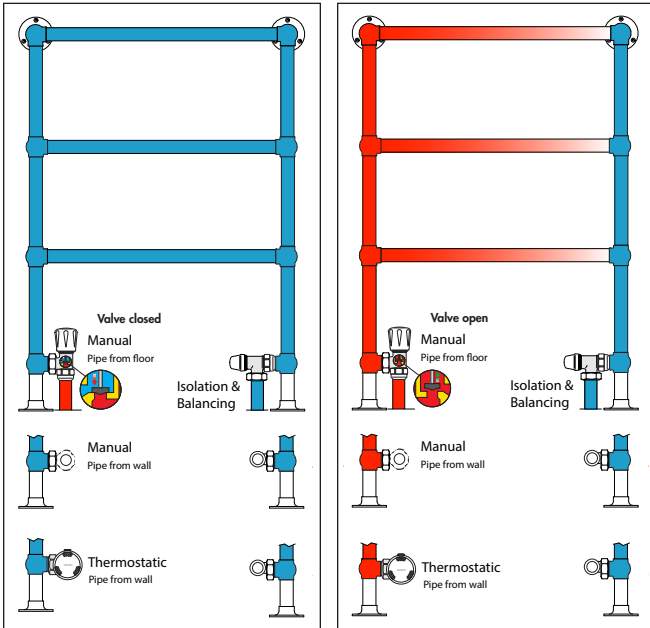
Code	A	B	C
200000	M30 x 1.5	3 1/8"	2"

Principle of Operation

The thermostatic control head is a proportional temperature controller, containing a liquid-filled bellows thermostatic sensor.

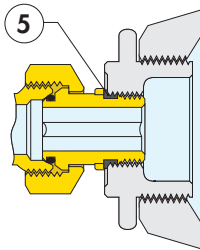
The valve plug is normally in the spring-to-open (normally open) position (1) without the control head, or when the control head is in the maximum open position (setting 5). Under operation the ambient room temperature of air passing around the sensor rises causing the liquid in the bellows to expand, pushing the valve control stem down against the return spring. This closes the valve, reducing fluid flow to the radiator to cool the room, in proportion to the deviation from the desired temperature setting. When the room temperature decreases, the reverse occurs; the bellows contracts, which in turn allows the valve spring to open the valve, increasing the fluid flow to the radiator to warm the room.

NOTE: The valve must be installed with the valve plug closing against incoming flow.



Tailpiece with rubber seal

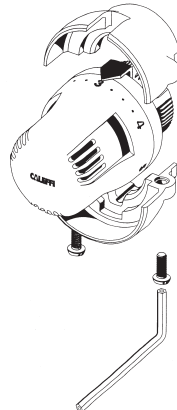
The radiator connection thread coupling union is equipped with a special shaped rubber ring (5). This system ensures a hydraulic seal without using additional sealing materials such as hemp or PTFE tape.



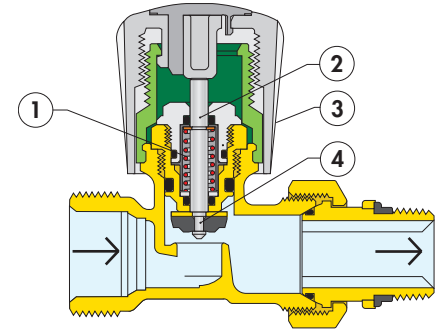
Tamper-proof cap

The thermostatic control head can be protected against tampering and theft by mounting the tamper-proof cap, code 209000, on the knob as shown.

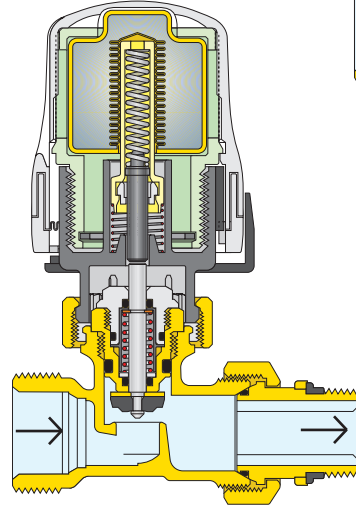
The cover is fastened with two screws with special heads that can only be tightened or loosened with the special hex key, code 209001.



The valve control stem (2) is stainless steel with an EPDM o-ring double seal. This allows for replacement of the control head (3) even with the system operating. The valve plug (4) is shaped to provide an optimal flow characteristic throughout the opening and closing stroke under proportional thermostatic operation. The wide passageway between the seat and the valve plug causes reduced head losses in manual operation.



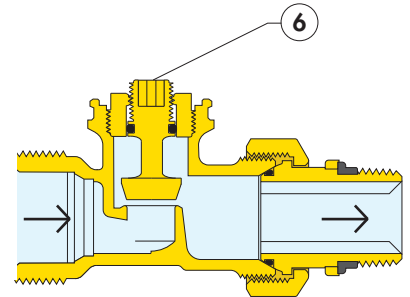
Convertible valve with manual control (339452 pictured)



Convertible valve with thermostatic control head (339452 with 200000 pictured)

Isolation and balancing valve

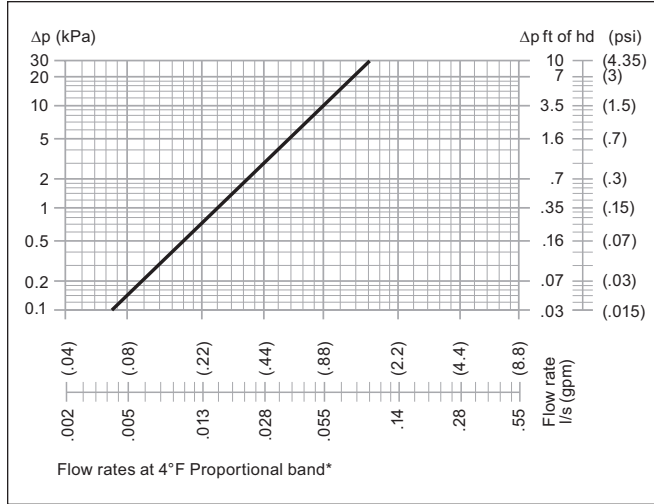
The isolation and balancing valve, without spring-return action, is adjusted to either shutoff flow (isolation) or modulate flow rate (balancing) with a 5 mm (3/16") allen head wrench (6). The valve must be installed with the plug closing against incoming flow, as shown.



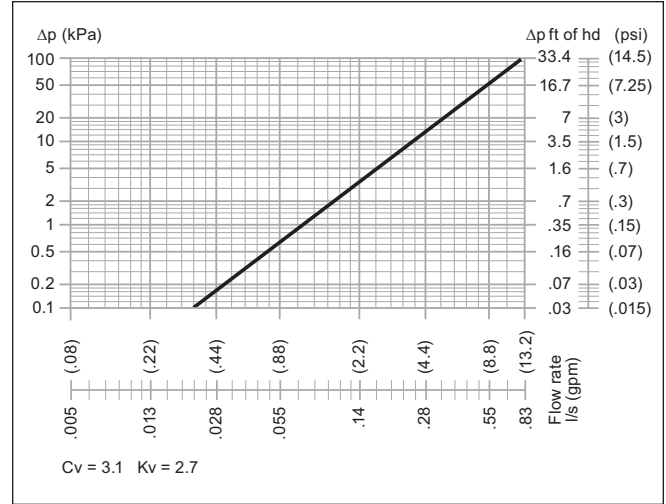
(343452 pictured)

Hydraulic characteristics

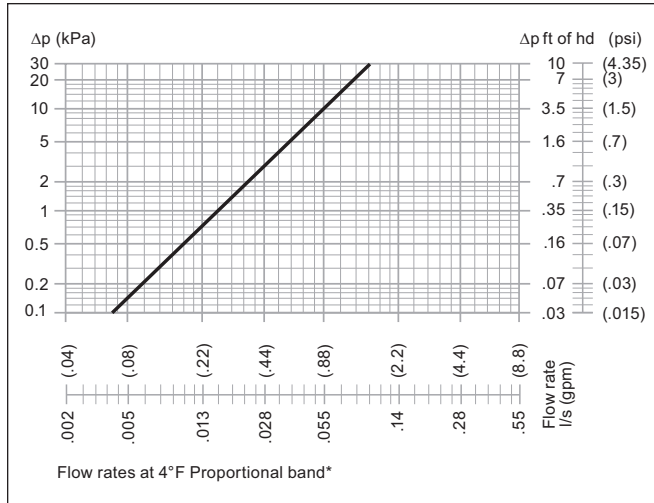
Convertible radiator valve with angled connections, code 338452 with thermostatic control head, proportional band 4°F



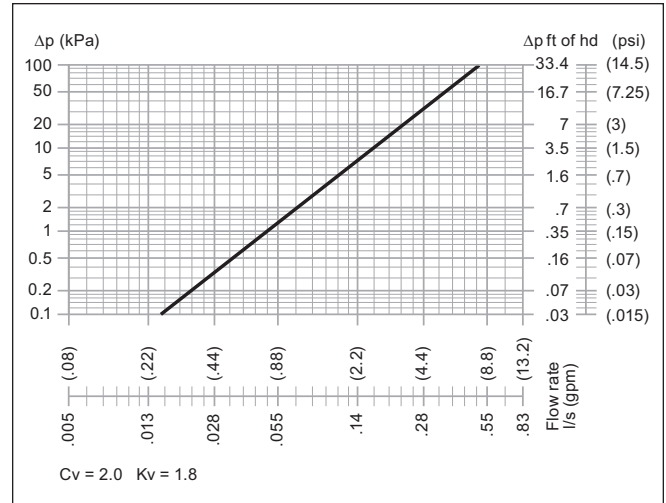
Convertible radiator valve with angled connections, code 338452 with manual operation



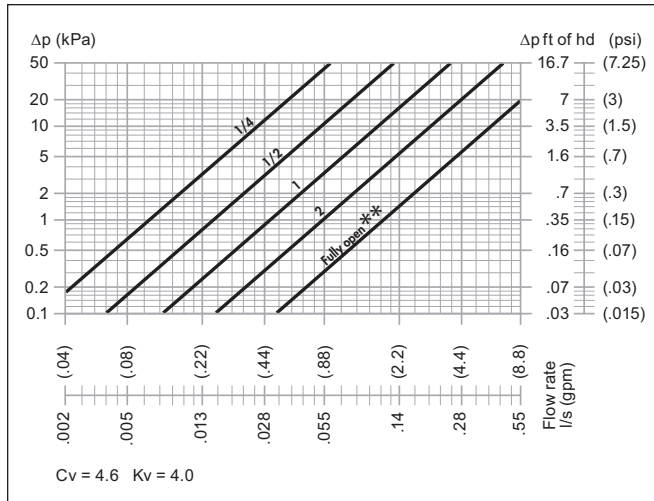
Convertible radiator valve with straight connections, code 339452 with thermostatic control head, proportional band 4°F



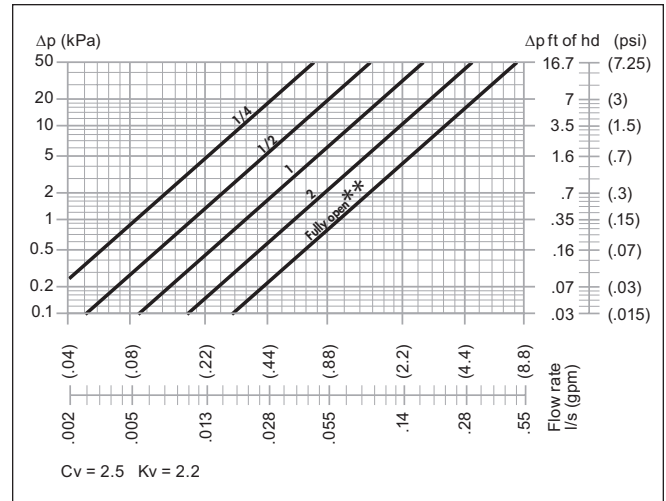
Convertible radiator valve with straight connections, code 339452 with manual operation



Isolation and balancing valve with angled connections, code 342452 and control head



Isolation and balancing valve with straight connections, code 343452

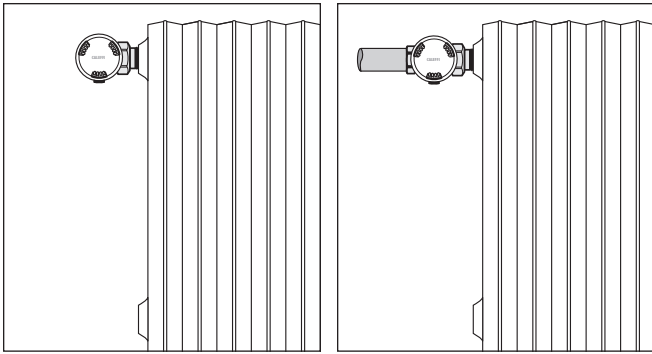


*Proportional band is the difference between the thermostatic radiator valve control head setting and the actual room temperature.

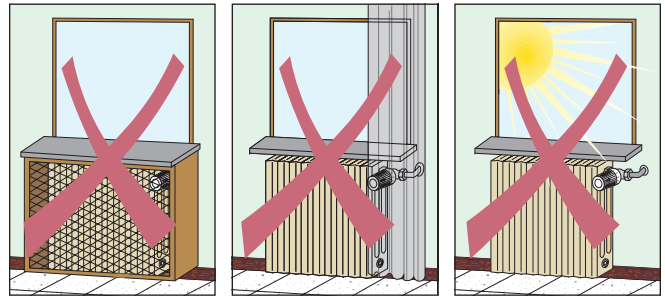
**7 full turns with 5 mm (3/16") allen head wrench fully, opens the code 342452 and 343452 valves.

Installation

Thermostatic control heads should be installed in the horizontal position.

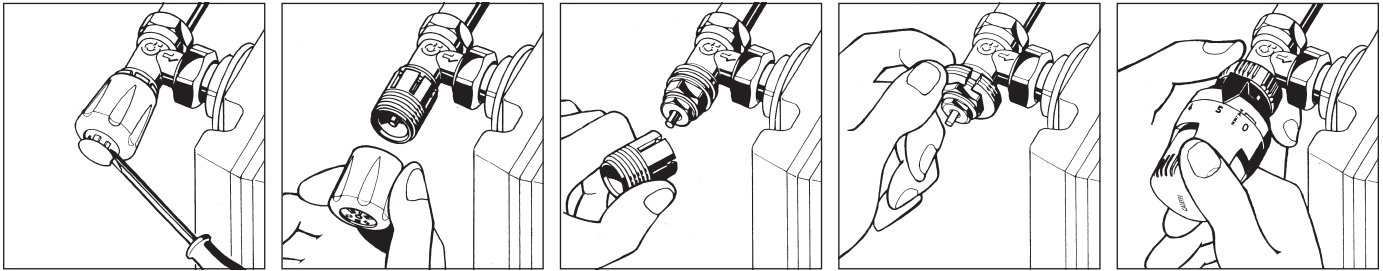


The sensitive element of the thermostatic control head must not be installed in niches, alcoves, behind curtains or directly exposed to sunlight, any of which would sense incorrect temperature values.



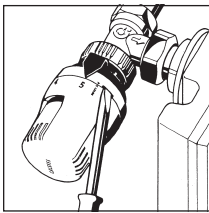
Converting valves from manual to thermostatic control

Before installing the thermostatic control head, turn the control knob to the number 5 position.

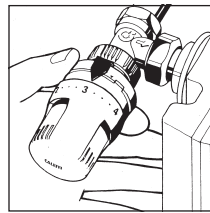


Locking and restricting the thermostat control temperature

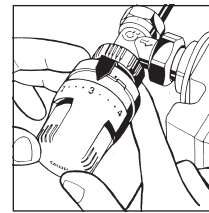
Temperature restriction



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.

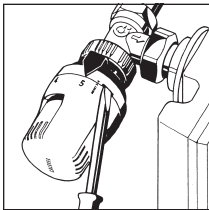


2. Turn the knob to the new maximum open position required (e.g. Pos. 3). Turn the ring **counter-clockwise** up to the stop.

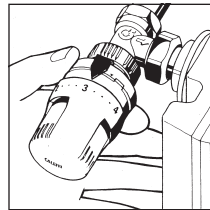


3. Re-lock the ring. The valve will now have a temperature range restriction from 0 to the set value.

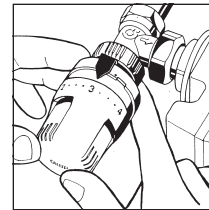
Locking the temperature



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.

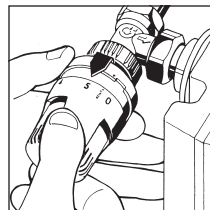


3. Re-lock the ring. The valve will now be locked at the set temperature.

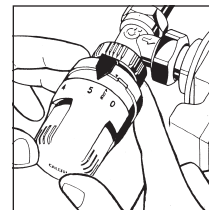
Resetting the temperature restriction and temperature lock



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 **counter-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.

Fittings

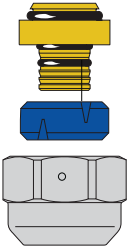
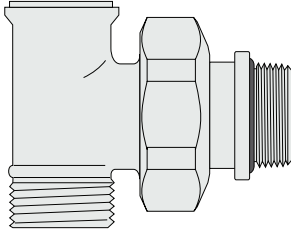


681

Universal PEX fittings

681 series fittings are compatible with any ASTM F876 single layer PEX. Max. working pressure: 150 psi. Working temperature for ASTM F876 PEX piping: -41–180°F. Chrome plated.

Code	Description
681524	1/2" nominal PEX, 3/4" straight thread female nut



682

Universal PEX-AL-PEX fittings

682 series fittings are compatible with any ASTM F1281 multilayer PEX-AL-PEX pipe. Max. working pressure: 150 psi. Working temperature for ASTM F1281 multilayer PEX-AL-PEX piping: -41–167°F with tubing rated 200°F.

Code	Description
682540	1/2" nominal PEX-AL-PEX, 3/4" straight thread female nut



NA102

Sweat connection fitting.

Code	Description
NA10262	1/2" sweat, 3/4" straight thread female nut



437

Compression fitting, for 1/2" hard copper. With o-ring seal. Max. working pressure: 150 psi (10 bar). Temperature range: -13–250°F (-25–120°C). Chrome plated. For connecting copper to valve 338 and 339 series.

Code	Description
437516	1/2" compression, 3/4" straight thread female nut

SPECIFICATION SUMMARIES

338 series

Radiator valve body convertible from standard manual operation to thermostatic control heads and thermo-electric actuators. Angled connections for copper and single and multilayer PEX pipes. Radiator connection 1/2" straight threads with tailpiece equipped with EPDM seal. Pipe connection 3/4" conical. Brass body. Chrome plated. Control knob white RAL 9010, for manual control, in ABS. Stainless steel control stem. Double seal on control stem with EPDM o-rings. Maximum working temperature 212°F (100°C). Maximum working pressure 150 psi (10 bar).

339 series

Radiator valve body convertible from standard manual operation to thermostatic control heads and thermo-electric actuators. Straight connections for copper and single and multilayer PEX pipes. Radiator connection 1/2" straight threads with tailpiece equipped with EPDM seal. Pipe connection 3/4" conical. Brass body. Chrome plated. Control knob white RAL 9010, for manual control, in ABS. Stainless steel control stem. Double seal on control stem with EPDM o-rings. Maximum working temperature 212°F (100°C). Maximum working pressure 150 psi (10 bar).

342 series

Isolation and balancing valve. Angled connections for copper and single and multilayer PEX pipes. Radiator connection 1/2" straight threads with tailpiece equipped with EPDM seal. Pipe connection 3/4" conical. Brass body. Chrome plated. Cap white RAL 9010 in ABS. Double seal on control stem with EPDM o-rings. Maximum working temperature 212°F (100°C). Maximum working pressure 150 psi (10 bar).

343 series

Isolation and balancing valve. Straight connections for copper and single and multilayer PEX pipes. Radiator connection 1/2" straight threads with tailpiece equipped with EPDM seal. Pipe connection 3/4" conical. Brass body. Chrome plated. Cap white RAL 9010 in ABS. Double seal on control stem with EPDM o-rings. Maximum working temperature 212°F (100°C). Maximum working pressure 150 psi (10 bar).

200 series

Thermostatic control head for thermostatic and convertible radiator valves. Sensor incorporated with liquid-filled element. Maximum ambient temperature 120°F (50°C). Graduated scale from * to 5 corresponding to a temperature range of 45 to 82°F (7 to 28°C), with possibility of temperature restriction and locking. Frost protection cut-in at 45°F (7°C).

209 series

Tamper-proof cap for thermostatic control head 200 series, 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.



Caleffi North America, Inc.
3883 W. Milwaukee Road
Milwaukee, WI 53208
Tel: 414-238-2360 · Fax: 414-238-2366
sales@caleffi.com · www.caleffi.us
© Copyright 2012 Caleffi North America, Inc.