Standard

Thermostatic Radiator Valves
Thermostatic valve body without presetting

Engineering **GREAT** *Solutions*

Standard

The Standard thermostatic valve bodies are used in two-pipe pump heating systems with normal temperature spread. The double O-ring sealing and the the valve body made of corrosion-resistant gunmetal ensure a long-life and maintenance-free operation.

Key features

> **Double O-ring seal**
  For durable and maintenance free operation

> **Valve body in gunmetal**
  Corrosion-resistant and safe

> **Thermostatic insert replaceable under pressure**
  with DN 10 to DN 20

> **Also available in press version with Viega SC-Contur**
  For a quick and secure connection

Technical description

Applications area:
Heating and cooling systems.

Function:
Control
Shut-off

Dimensions:
DN 10-32

Pressure class:
PN 10

Temperature:
Max. working temperature: 120°C, with protection cap or actuator 100°C, with press connection 110°C.
Min. working temperature: -10°C.

Materials:
Valve body: corrosion resistant Gunmetal
O-rings: EPDM rubber
Valve disc: EPDM rubber
Return spring: Stainless steel
Valve insert: Brass
The complete thermostatic insert can be replaced using the fitting tool without draining the system (DN 10 - DN 20).
Spindle: Niro-steel spindle with double O-ring sealing. The outer O-ring can be replaced under pressure.

Surface treatment:
Valve body and fittings are nickel-plated.

Marking:
THE, country code, flow direction arrow, DN and KEYMARK-Designation.
I+ -Designation.
Black protection cap. Stuffing box with black label (DN 10 - DN 20).

Standards:
The thermostatic valve bodies meet the following requirements:
– KEYMARK certified and tested
  to DIN EN 215.
KEYMARK-certified thermostatic heads and thermostatic valve bodies see also technical leaflet "Thermostatic Heads".

011

Pipe connection:
The female-threaded version is designed for connection to threaded pipe, or in conjunction with compression fittings, to copper precision steel or multi-layer pipe (only DN 15). The male-threaded version, in conjunction with the appropriate compression fittings, permits connection to plastic pipe. Versions with Viega press connection (15 mm) with SC-Contur are suitable for copper, Viega Sanpress stainless-steel, and Prestabo steel pipe.

Connection to thermostatic head and actuator:
IMI Heimeier M30x1.5

Construction
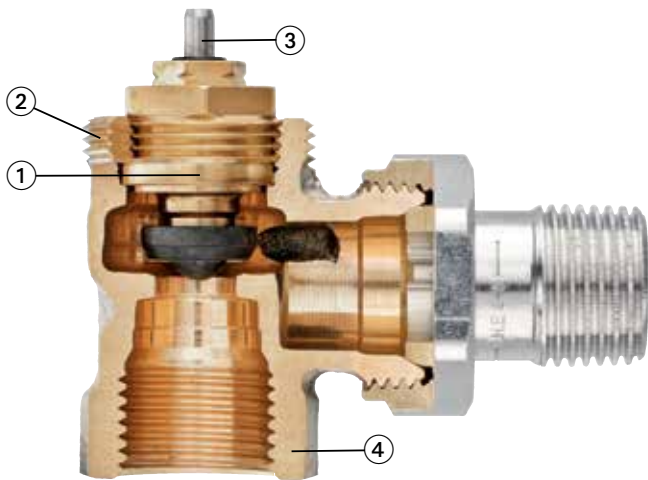
1. The insert can be replaced without draining off the system with the IMI Heimeier fitting tool
2. IMI Heimeier M30x1.5 connection technology
3. Niro-steel spindle with long-life double O-ring sealing
4. Body made of corrosion-resistant gunmetal

Application

The Standard thermostatic valve bodies are used in two-pipe pump heating systems with normal temperature spread. Corresponding to the standards EnEV and DIN V 4701-10, the valve bodies can be designed with a p-band from 1 K to 2 K thus enabling a broad flow spectrum. A hydraulic balance, which is an additional requirement, can be reached with the appropriate lockshields e. g. Regulux.

Noise behaviour
To ensure low-noise performance, the following conditions must be met:
• On the basis of experience, the differential pressure over the thermostatic valves should not exceed about 20 kPa = 200 mbar = 0.2 bar. If in designing the system, higher transient differentials might be experienced in the part-load flow range, differential pressure control equipment such as a STAP Differential Pressure Controller or Hydrolux bypass valves can be used.
• Mass-flow must be correctly adjusted.
• The system must be completely deaerated.

Sample application
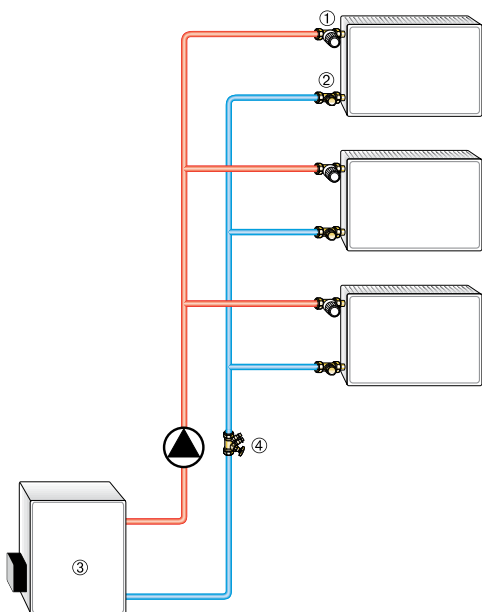
1. Standard thermostatic valve body
2. Regulux lockshield
3. Boiler
4. STAD balancing valve

Notes

– To avoid damage and the formation of scale deposit in the hot water heating system, the composition of the heat transfer medium should be in accordance with the VDI guideline 2035. For industrial and long-distance energy systems, see the applicable codes VdTÜV and 1466/AGFW FW 510. A heat transfer medium containing mineral oils, or any type of lubricant containing mineral oil can have extremely negative effects and usually lead to the disintegration of EPDM seals. When using nitrite-free frost and corrosion resistance solutions with an ethylene glycol base, pay close attention to the details outlined in the manufacturers' documentation, particularly concerning concentration and specific additives.

– The thermostatic valve bodies can be used with all IMI Heimeier thermostatic heads and IMI Heimeier or IMI TA thermal or motorized actuators. The optimal tuning of the components guarantees maximum safety. When using actuators from other manufacturers, make sure that the pressure power is appropriate for thermostatic valve bodies with soft sealing valve discs.

Press-Line Connection with Viega SC-Contur

Thermostatic valve bodies with 15 mm Viega press connection are suitable for copper pipes conforming to EN 1057 as well as Viega Sanpress stainless steel and Prestabo steel pipes. All press connections as well as the valve bodies are made of corrosion-resistant, dezincification-free gunmetal. Since this a Viega press connection, all suitable Viega press-fitting jaws can be used. This means there is no need to purchase costly press-fitting tools and jaws.

The pressing action is produced by a formed hexagon recess before and after the beading of the connector and gives the press-fitted joint the necessary strength. In addition, the press-fitting beading is specifically formed such as to give the highgrade EPDM sealing element its defined shape.

In the interest of safety, the press connections are equipped with SC-Contur (SC = safety connection) which makes it possible to detect non-pressed joints by visible leaks when filling the system. During the press-fitting operation, the SC-Contur is practically reformed and looses its effect in the process, thus producing a permanent, tight and positive joint connection.

Initially, press-fitting joints that do not feature SC-Contur can appear to be tight in the non-pressed state, however, they can slide apart during subsequent operation of the system. The hexagon on the valve bodies is a particularly practical feature for holding the fittings while tightening the union nut.

The following press-fitting tools can be used, e.g.
- Viega: Type 2, PT3-H, PT3-EH, PT3-AH, battery-powered Presshandy, Pressgun 4E/4B
- Geberit: PWH 75
- Geberit /Novopress: Type N 230V, Type N battery-powered
- Mapress/Novopress: EFP 2, ACO 1/ ECO 1
- Klauke: UAP 2

The suitability of other press-fitting tools should be verified with the respective manufacturer.

We recommend using only Viega press-fitting jaws to make Viega press connections.

Technical data

Diagram DN 10 (3/8") to DN 25 (1"), valve body with thermostatic head
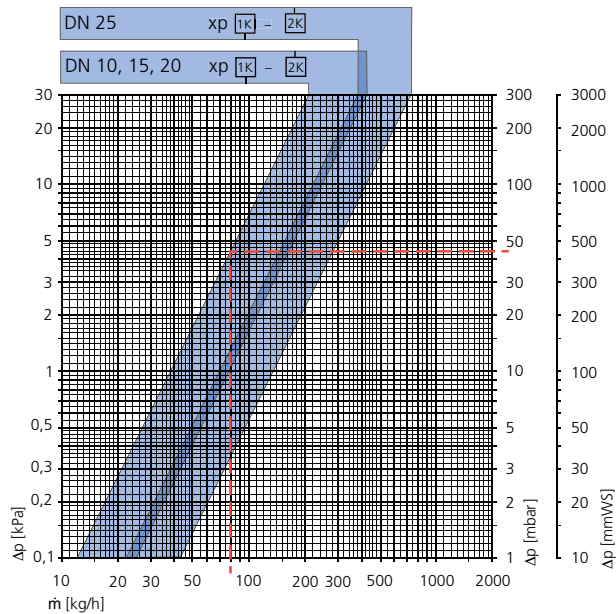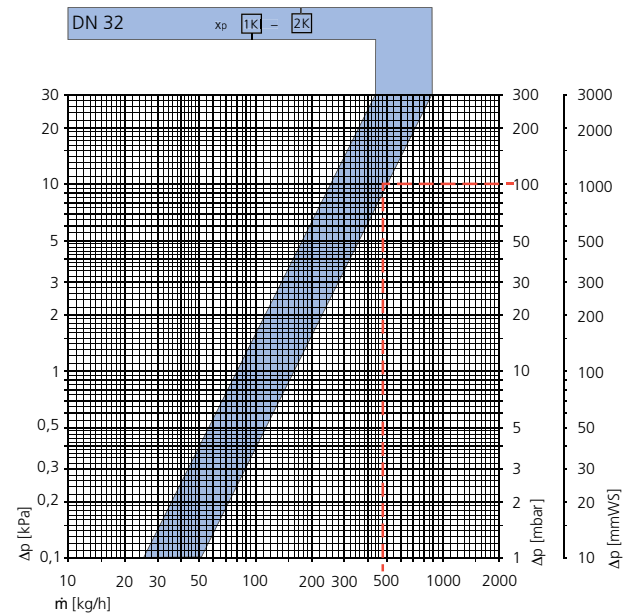

Diagram DN 32 (1 1/4"), valve body with thermostatic head

Valve body with thermostatic head	Kv P-band xp [K]			Kvs				Permitted differential pressure, during which the valve is kept closed Δp [bar]		
	1,0	**1,5**	**2,0**	Angle	Straight	Axial	Double angle	Th.-head	EMO T-TM/NC EMOtec/NC EMO 1/3 EMO EIB/LON	EMO T/NO EMOtec/NO
DN 10 (3/8")	0,38	0,59	0,79	2,00	1,50	1,50	1,30	1,00	3,50	3,50
DN 15 (1/2")	0,38	0,59	0,79	2,00	2,00	1,50	1,50	1,00	3,50	3,50
DN 20 (3/4")	0,38	0,59	0,79	2,50	2,50	-	-	1,00	3,50	3,50
DN 25 (1")	0,70	1,04	1,35	5,70	5,70	-	-	0,25	0,80	1,60
DN 32 (1 1/4")	0,80	1,10	1,60	6,70	6,70	-	-	0,25	0,50	1,00

Kv/Kvs = m^3/h at a pressure drop of 1 bar.

Sample calculation 1
Target:
Pressure loss of Standard thermostatic valve body DN 15 with a p-band of 1 K
Given:
Heat flow Q = 1395 W
Temperature spread Δt = 15 K (65/50°C)
Solution:
Mass flow m = Q / (c · Δt) = 1395 / (1,163 · 15) = 80 kg/h
Pressure loss from diagram Δp_V = 44 mbar

Sample calculation 2
Target:
Appropriate Standard thermostatic valve body

Given:
Heat flow Q = 8375 W
Temperature spread Δt = 15 K (70/55°C)
Pressure loss, thermostatic valve Δp_V = 100 mbar

Solution:
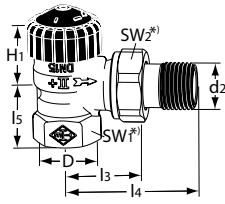Mass flow m = Q / (c · Δt) = 8375 / (1,163 · 15) = 480 kg/h
Standard thermostatic valve body from diagram: DN 32 (1 1/4")

$$Cv = \frac{Kv}{0,86}$$

$$Kv = Cv \cdot 0,86$$
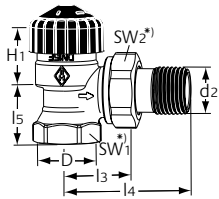
Articles

Angle

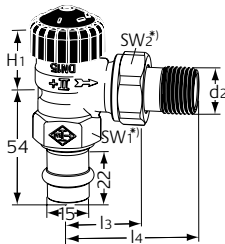| DN	D	d2	l3	l4	l5	H1	Kv [xp] 1 K / 2 K	Kvs	EAN	Article No
10	Rp3/8	R3/8	26	52	23,5	23,5	0,38 / 0,79	2,00	4024052173716	2201-01.000
15	Rp1/2	R1/2	29	58	27	23,5	0,38 / 0,79	2,00	4024052173914	2201-02.000
20	Rp3/4	R3/4	34	66	29	21,5	0,38 / 0,79	2,50	4024052174119	2201-03.000
25	Rp1	R1	40	75	32,5	23	0,70 / 1,35	5,70	4024052174317	2201-04.000
32	Rp1 1/4	R1 1/4	46	85	39	23	0,80 / 1,60	6,70	4024052174416	2201-05.000

Angle
with reduced lengths.
Brass. Not suitable for compression fitting for multi layer pipes.

DN	D	d2	l3	l4	l5	H1	Kv [xp] 1 K / 2 K	Kvs	EAN	Article No
10	Rp3/8	R3/8	24	49	20	24	0,38 / 0,79	2,00	4024052922611	3441-01.000
15	Rp1/2	R1/2	26	53	23	23,5	0,38 / 0,79	2,00	4024052922819	3441-02.000
20	Rp3/4	R3/4	30	63	26	21,5	0,38 / 0,79	2,50	4024052927319	3441-03.000

Angle
with Viega press connection 15 mm

DN	d2	l3	l4	H1	Kv [xp] 1 K / 2 K	Kvs	EAN	Article No
15	R1/2	29	58	23,5	0,38 / 0,79	2,00	4024052545520	2291-15.000
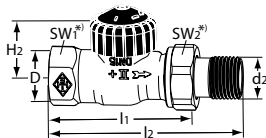
Straight

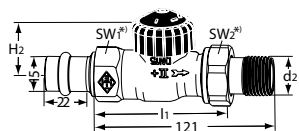| DN	D	d2	l1	l2	H2	Kv [xp] 1 K / 2 K	Kvs	EAN	Article No
10	Rp3/8	R3/8	59	85	21,5	0,38 / 0,79	1,50	4024052175611	2202-01.000
15	Rp1/2	R1/2	66	95	21,5	0,38 / 0,79	2,00	4024052175819	2202-02.000
20	Rp3/4	R3/4	74	106	23,5	0,38 / 0,79	2,50	4024052176014	2202-03.000
25	Rp1	R1	84	118	30,5	0,70 / 1,35	5,70	4024052176212	2202-04.000
32	Rp1 1/4	R1 1/4	95	135	30,5	0,80 / 1,60	6,70	4024052176311	2202-05.000
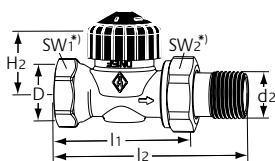
Straight
with reduced lengths.
Brass. Not suitable for compression fitting for multi layer pipes.

DN	D	d2	l1	l2	H2	Kv [xp] 1 K / 2 K	Kvs	EAN	Article No
10	Rp3/8	R3/8	50	76	22,5	0,38 / 0,79	1,50	4024052926619	3442-01.000
15	Rp1/2	R1/2	55	83	22,5	0,38 / 0,79	2,00	4024052926718	3442-02.000
20	Rp3/4	R3/4	65	97	22,5	0,38 / 0,79	2,50	4024052927418	3442-03.000

Straight
with Viega press connection 15 mm

DN	d2	l1	H2	Kv [xp] 1 K / 2 K	Kvs	EAN	Article No
15	R1/2	66	21,5	0,38 / 0,79	2,00	4024052545612	2292-15.000
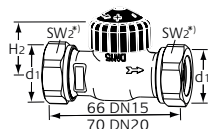
Straight
flat sealing

DN	d1	H2	Kv [xp] 1 K / 2 K	Kvs	EAN	Article No
15	G3/4	21,5	0,38 / 0,79	2,00	4024052547722	2274-02.000
20	G1	23,5	0,38 / 0,79	2,50	4024052547623	2272-03.000
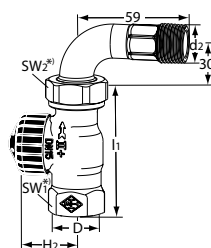
Straight
with bended nipple

DN	D	d2	l1	H2	kv [xp] 1 K / 2 K	Kvs	EAN	Article No
15	Rp1/2	R1/2	66	21,5	0,38 / 0,79	2,00	4024052176915	2206-02.000
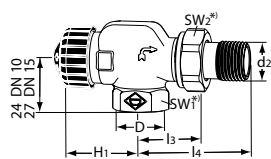
Axial

DN	D	d2	l3	l4	H1	Kv [xp] 1 K / 2 K	Kvs	EAN	Article No
10	Rp3/8	R3/8	26	52	31,5	0,38 / 0,79	1,50	4024052178711	2225-01.000
15	Rp1/2	R1/2	29	58	31,5	0,38 / 0,79	1,50	4024052178810	2225-02.000
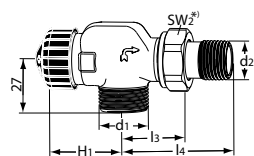
Axial
with male thread G3/4

DN	d1	d2	l3	l4	H1	Kv [xp] 1 K / 2 K	Kvs	EAN	Article No
15	G3/4	R1/2	29	58	31,5	0,38 / 0,79	1,50	4024052179114	2235-02.000
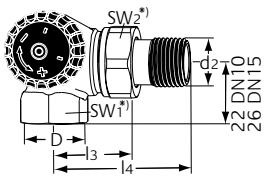
Double angle
Connection to radiator left

DN	D	d2	l3	l4	Kv [xp] 1 K / 2 K	Kvs	EAN	Article No
10	Rp3/8	R3/8	26	52	0,38 / 0,79	1,30	4024052182312	2311-01.000
15	Rp1/2	R1/2	29	58	0,38 / 0,79	1,50	4024052182411	2311-02.000
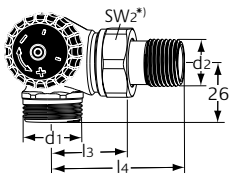
Double angle
with male thread G 3/4
Connection to radiator left

DN	d1	d2	l3	l4	Kv [xp] 1 K / 2 K	Kvs	EAN	Article No
15	G3/4	R1/2	29	58	0,38 / 0,79	1,50	4024052182619	2313-02.000
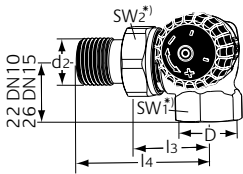
Double angle
Connection to radiator right

DN	D	d2	l3	l4	Kv [xp] 1 K / 2 K	Kvs	EAN	Article No
10	Rp3/8	R3/8	26	52	0,38 / 0,79	1,30	4024052182114	2310-01.000
15	Rp1/2	R1/2	29	58	0,38 / 0,79	1,50	4024052182213	2310-02.000
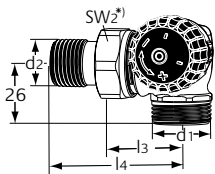
Double angle
with male thread G 3/4
Connection to radiator right

| DN	d1	d2	l3	l4	Kv [xp] 1 K / 2 K	Kvs	EAN	Article No
15	G3/4	R1/2	29	58	0,38 / 0,79	1,50	4024052182510	2312-02.000

*) SW1: DN 10 = 22 mm, DN 15 = 27 mm, DN 20 = 32 mm, DN 25 = 41 mm, DN 32 = 49 mm
   SW2: DN 10 = 27 mm, DN 15 = 30 mm, DN 20 = 37 mm, DN 25 = 47 mm, DN 32 = 52 mm

Values H1 and H2 are at the bearing surface thermostatic head or actuator.

Kvs = m^3/h at a pressure drop of 1 bar and fully open valve.

Kv [xp] max. 1 K / 2 K = m^3/h at a pressure drop of 1 bar with thermostatic head.
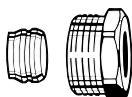
Accessories
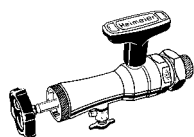
Fitting tool
complete with case, box spanner
and replacement seals, for replacing
thermostatic inserts without draining off
the heating system (for DN 10 to DN 20).

	EAN	Article No
Fitting tool	4024052298914	9721-00.000
Replacement seals	4024052299010	9721-00.514

Compression fitting
for copper or precision steel pipe
according to DIN EN 1057/10305-1/2.
Female thread connection
Rp 3/8 – Rp 3/4.
Metal-to-metal joint. Brass nickel-plated.
Support sleeves should be used for a pipe
wall thickness of 0.8 – 1 mm. Follow the
specifications of the pipe manufacturer.

Ø Pipe	DN	EAN	Article No
12	10 (3/8")	4024052174614	2201-12.351
14	15 (1/2")	4024052174713	2201-14.351
15	15 (1/2")	4024052175017	2201-15.351
16	15 (1/2")	4024052175116	2201-16.351
18	20 (3/4")	4024052175215	2201-18.351
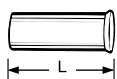
Support sleeve
for copper or precision steel pipe with
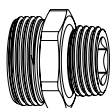a 1 mm wall thickness.
Brass.

Ø Pipe	L	EAN	Article No
12	25,0	4024052127016	1300-12.170
15	26,0	4024052127917	1300-15.170
16	26,3	4024052128419	1300-16.170
18	26,8	4024052128815	1300-18.170
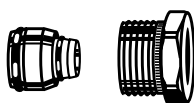
Compression fitting
for Alu/PEX multi-layer pipe according to
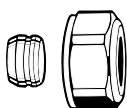DIN 16836.
Female thread connection Rp 1/2.
Nickel-plated brass.

Ø Pipe	EAN	Article No
16 x 2	4024052138616	1335-16.351

Double connection fitting
For clamping plastic, copper, precision
steel or multi-layer pipes.
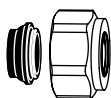Brass, nickel-plated.

	L	EAN	Article No
G3/4 x R1/2	26	4024052308415	1321-12.083

Compression fitting
for copper or precision steel pipe
according to DIN EN 1057/10305-1/2.
Connection male thread G 3/4 according
to DIN EN 16313 (Eurocone).
Metal-to-metal joint. Brass nickel-plated.
With a pipe wall thickness of 0.8-1 mm
insert supporting sleeves. Heed pipe
manufacturer's technical advice.

Ø Pipe	EAN	Article No
12	4024052214211	3831-12.351
14	4024052214310	3831-14.351
15	4024052214617	3831-15.351
16	4024052214914	3831-16.351
18	4024052215218	3831-18.351

Compression fitting
for copper or precision steel pipe
according to DIN EN 1057/10305-1/2.
Connection male thread G 3/4 according
to DIN EN 16313 (Eurocone).
Soft sealed, max. 95°C. Nickel-plated
brass.

Ø Pipe	EAN	Article No
15	4024052515851	1313-15.351
16	4024052515950	1313-16.351
18	4024052516056	1313-18.351
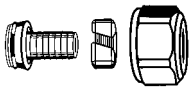
Compression fitting
for plastic pipe according to DIN 4726,
ISO 10508. *PE-X*: DIN 16892/16893,
EN ISO 15875; *PB*: DIN 16968/16969.
Connection male thread G 3/4 according
to DIN EN 16313 (Eurocone).
Nickel plated brass.

Ø Pipe	EAN	Article No
12x1,1	4024052136018	1315-12.351
14x2	4024052134618	1311-14.351
16x1,5	4024052136117	1315-16.351
16x2	4024052134816	1311-16.351
17x2	4024052134915	1311-17.351
18x2	4024052135110	1311-18.351
20x2	4024052135318	1311-20.351

Compression fitting
for Alu/PEX multi-layer pipe according to
DIN 16836.
Connection male thread G 3/4 according
to DIN EN 16313 (Eurocone).
Nickel-plated brass.

Ø Pipe	EAN	Article No
14x2	4024052137213	1331-14.351
16x2	4024052137312	1331-16.351
18x2	4024052137411	1331-18.351

Other accessories, see catalogue leaflet "Accessories and spare parts for thermostatic radiator valves".