Climate
Control

IMI Heimeier

E-Z System

Thermostatic valves with radiator connection systems

Valve set for one- and two-pipe heating systems

Breakthrough
engineering for
a better world

E-Z System

The E-Z System is a universally useable valve for all radiators with a two point connection in one- and two-pipe heating systems. Centre-to-centre distance of pipe connections 58 mm.

Key features

Convertible from one-pipe to two-pipe operation

Especially low flow resistance

Fits in every installation situation thanks to different structural shapes of the thermostatic valve bodies

No return circulation thanks to integrated gravity brakes in the E-Z distributor

Technical description

Applications area:
One- and two-pipe heating systems

Function:
Control
Shut-off

Dimensions:
DN 15

Pressure class:
PN 10

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

Materials:
Distributor:
Valve body: Corrosion resistant Gunmetal.
O-rings: EPDM rubber
Valve disc: EPDM rubber
Spindle: Brass

Thermostatic valve body:
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.
Spindle: Niro-steel spindle with double O-ring sealing. The outer O-ring can be replaced under pressure.

Other:
See “Articles” and “Accessories”.

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

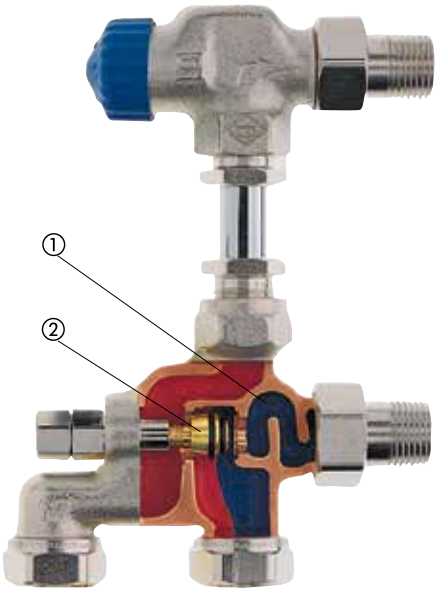
Marking:
Distributor:
THE, flow direction arrow.
Thermostatic valve body:
THE, flow direction arrow.
Axial and straight: Blue protection cap. Blue stuffing box.
Double angle: Black protection cap. Black stuffing box.

Pipe connection:
G3/4 male thread for compression fittings for plastic, copper, precision steel or multi-layer pipe.

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

Construction

E-Z System
with axial thermostatic valve body and blue protection cap

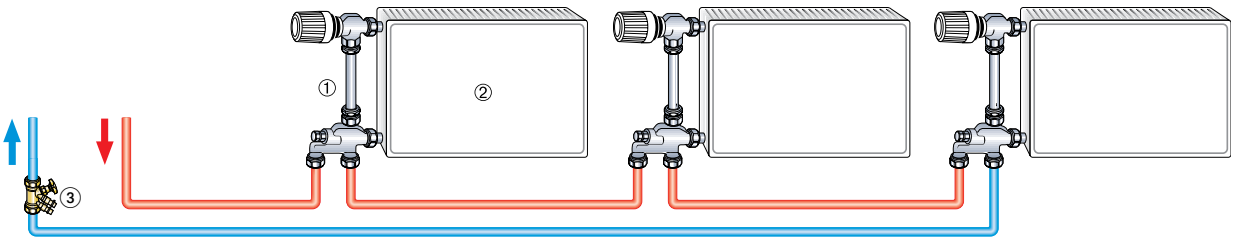


1. Gravity brake
2. Regulating cone

Application

The E-Z System is a universally useable valve for all radiators with a two point connection in one- and two-pipe heating systems. The system consists of an E-Z distributor, thermostatic valve body, alternatively with axial, angle or straight form with bend nipple, as well as precision steel pipe and compression fittings.
In one-pipe operation, the mass flow to the radiators can be set anywhere in the area between 30–60%. Factory settings: 35% to the radiator.
The distributor can be reset by turning the regulating cone to the left as far as it will go to two-pipe operation (100% mass flow through the radiator, by-pass closed).
By turning the regulating cone all the way to the right, the return is shut off, the supply by closing the thermostatic valve body, as a result of which the radiator is detachable without emptying the unit. The by-pass stays opened in one-pipe operation regardless of the shut-off, so that the circulation of the circular pipeline is not interrupted.
The flow direction marked on the E-Z distributor should be followed, since the flow through the radiator is not optimal with a switched connection.
Important for one-pipe heating: Always use thermostatic valve bodies with blue or black protection cap and stuffing box (gravity model).

Sample application
One-pipe system



1. E-Z System
2. Radiator
3. STAD balancing valve

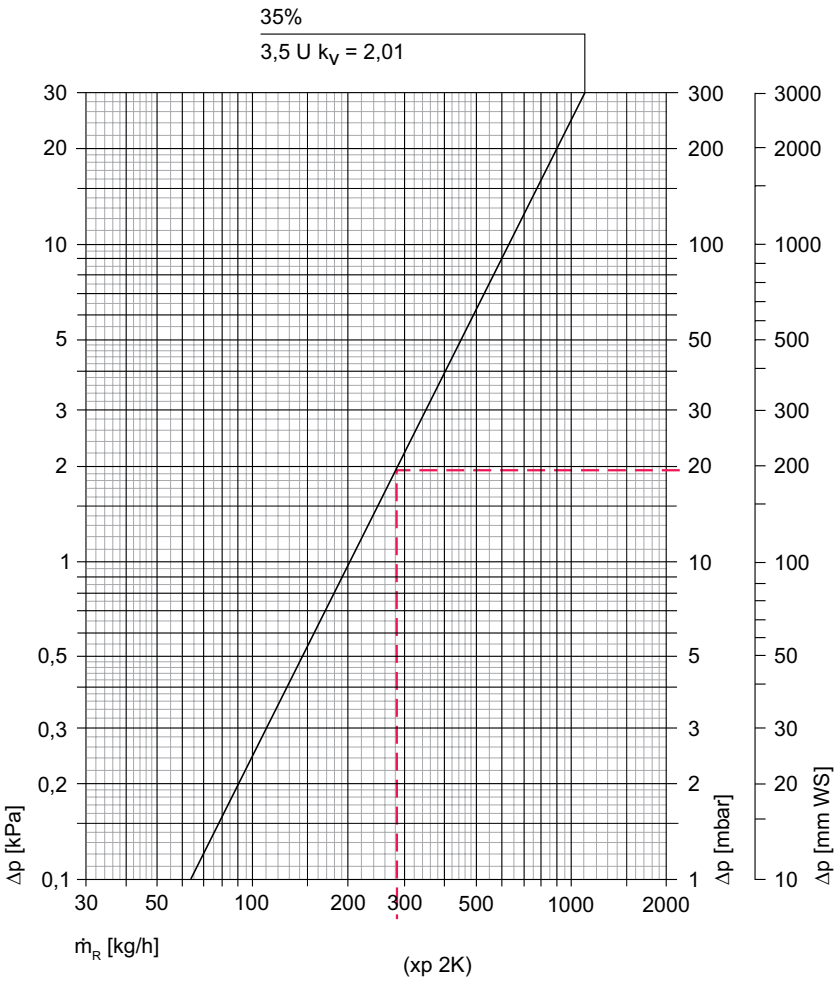
Notes

– 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.

– Flush the system before changing thermostatic valves in heavy polluted existing systems.

– The thermostatic valve bodies can be used with all IMI Heimeier thermostatic heads and IMI Heimeier or IMI TA thermal actuators or motorized. 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.

Technical data



Equivalent pipe lengths [m]

Kv	12 x 1	14 x 1	15 x 1	16 x 1	18 x 1
2,01	1,3	3,4	5,1	7,7	14,9

Copper pipe
t = 80 °C (176 °F)
v = 0,5 m/s

With the thermostatic head and with 2 K actuating variable

	kv-value							
	Radiator setting [%]							
	30	**35**	**40**	**45**	**50**	**55**	**60**	**100**
	Settings E-Z distributor [U]							
	4,25	**3,50**	**3,00**	**2,50**	**2,25**	**1,90**	**1,50**	**0**
E-Z distributor and thermostatic valve body DN 15 (1/2")	2,15	2,01	1,91	1,80	1,71	1,57	1,44	1,42 [1)]

1) Two-pipe operation, without thermostatic valve body

Sample calculation
Goal:
Pressure loss in single pipe circuit

Given:
Heat flow in closed circuit Q = 6510 W
Temp. flux in circuit Δt = 20 K (70/50°C)
Precision steel pipe Ø = 15 x 1 mm
Length in curcuit l = 25 m
Total individual resistors ∑ζ= 7.0
Number of radiators n = 5
Radiator portion m_{HK} = 35%

Solution:
Mass flow rate in circuit $m_R = Q / (c \cdot \Delta t) = 6510 / (1{,}163 \cdot 20) = 280$ kg/h
Pressure drop in line R = 3.6 mbar/m (v = 0.6 m/s)
Pressure loss in line $\Delta p_R = R \cdot l = 3.6 \cdot 25 = 90$ mbar
Pressure loss individual resistors $Z = 5 \cdot \sum\zeta \cdot v^2 = 5 \cdot 7.0 \cdot 0.6^2 = 12.6$ mbar
Pressure loss E-Z System Δp_V = 19.4 mbar
Pressure loss one-pipe flow circuit $\Delta p_{ges} = \Delta p_V \cdot n + \Delta p_R + Z = 19.4 \cdot 5 + 90 + 12.6 = 200$ mbar

Operation

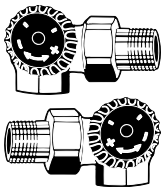
Setting for the E-Z distributor
Turn the regulating cone all the way to the left with a screwdriver to the position 0. Set the required radiator settings by turning the regulating cone to the right (factory setting: 3.5 revolutions 35 % radiator setting).

Attention: Before the return shut-off, determine the preset radiator setting (setting “U”) by turning the regulating cone all the way to the left. This will insure that the original radiator settings can be reset after the return shut-off.

Articles – E-Z System

Axial thermostatic valve body
With protection cap and stuffing box blue. Nickel-plated gunmetal.

	EAN	Article No
DN 15 (1⁄2")	4024052180516	2245-02.000

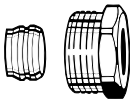


Double angle thermostatic valve body
With protection cap and stuffing box black. Nickel-plated gunmetal.

		EAN	Article No
DN 15 (1⁄2")	Connection to radiator left	4024052184118	2341-02.000
DN 15 (1⁄2")	Connection to radiator right	4024052183616	2340-02.000

Straight thermostatic valve body with bended nipple
With protection cap and stuffing box blue. Nickel-plated gunmetal.

	EAN	Article No
DN 15 (1⁄2")	4024052180110	2244-02.000

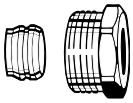


Compression fitting
for precision steel pipes. Internal thread connection Rp1/2. Metal-to-metal joint. Brass nickel-plated.

EAN	Article No
4024052175017	2201-15.351

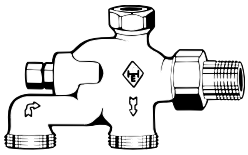
Precision steel pipe
For supply pipe. Chrome-plated. Ø 15 mm. 1100 mm long.

EAN	Article No
4024052214518	3831-15.169



Compression fitting
for precision steel pipes. Internal thread connection Rp1/2. Metal-to-metal joint. Brass nickel-plated.

EAN	Article No
4024052175017	2201-15.351

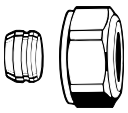


E-Z distributor
For one- and two-pipe heating systems. Nickel-plated gunmetal.

	EAN	Article No
DN 15 (1⁄2")	4024052216512	3891-02.000

Compression fitting for plastic, copper, precision steel or multi-layer pipes see Accessories.

Accessories

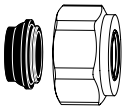


Compression fitting
for copper or precision steel pipe according to DIN EN 1057/10305-1/2.
Connection external thread G3/4 according to DIN EN 16313 (Eurocone).
Metal-to-metal joint.
Brass nickel-plated.
With a pipe wall thickness of 0.8-1 mm insert supporting sleeves. Heed pipe manufacturer's technical 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

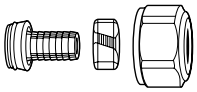
Supporting sleeves
for copper or precision steel pipe with a wall thickness of 1 mm.

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 copper or precision steel pipe according to DIN EN 1057/10305-1/2 and stainless steel pipe.
Connection external thread G3/4 according to DIN EN 16313 (Eurocone).
Soft sealed, max. 95°C.
Nickel-plated brass.

Ø Pipe	EAN	Article No
15	4024052515851	1313-15.351
18	4024052516056	1313-18.351

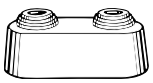


Compression fitting
for plastic pipe according to DIN 4726, ISO 10508. PE-X: DIN 16892/16893, EN ISO 15875; PB: DIN 16968/16969.
Connection external thread G3/4 according to DIN EN 16313 (Eurocone).
Nickel plated brass.

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

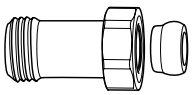
Compression fitting
for Alu/PEX multi-layer pipe according to DIN 16836.
Connection external thread G3/4 according to DIN EN 16313 (Eurocone).
Nickel-plated brass.

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



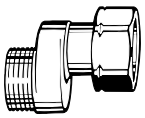
Double rosette
white plastic, can be divided in the centre, for various pipe diameters, distance between center points 58 mm, total height max. 31 mm.

	EAN	Article No
	4024052213214	3831-00.093



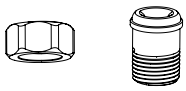
Length adjustment fitting
For connecting to plastic, copper, precision steel or multi-layer pipes.
For valves with external thread connection G3/4.
Brass nickel-plated.

	L	EAN	Article No
G3/4 x G3/4	25	4024052298310	9713-02.354
G3/4 x G3/4	50	4024052298419	9714-02.354



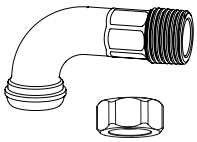
S-connection
For compensating different pipe distances, e. g. when replacing old one-pipe valves.
Note flow direction!
Brass, nickel-plated.

	Axial distance [mm]	Total length [mm]	EAN	Article No
G3/4 x G3/4	11,5	43	4024052139217	1351-02.362



Union threading for the circular pipeline

	EAN	Article No
Union nut	4024052111114	0121-02.011
Screw nipple R1/2	4024052111015	0121-02.010

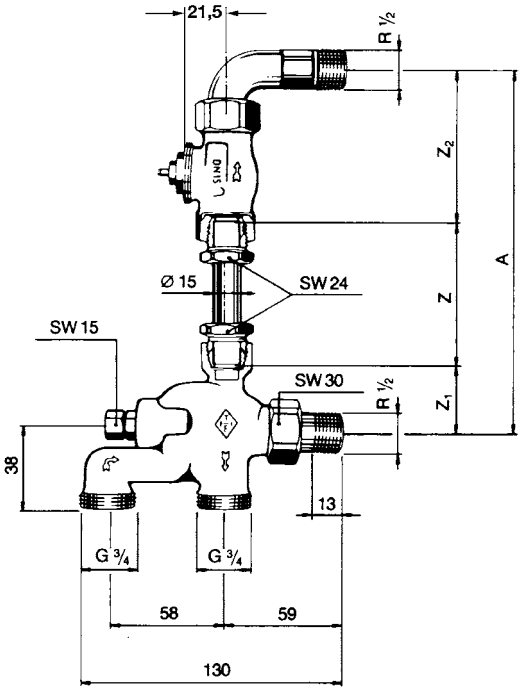


Bend fitting and union nut
For e. g. E-Z System or Duolux.
Bend fitting: Gunmetal nickel-plated.
Union nut: Nickel-plated.

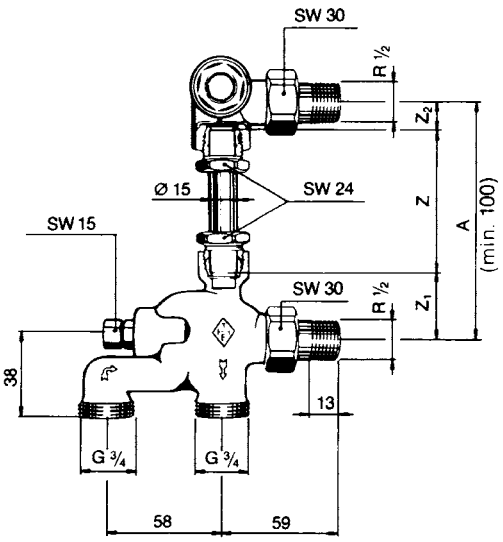
	EAN	Article No
Union nut	4024052111114	0121-02.011
Bend fitting R1/2	4024052317813	2244-02.355

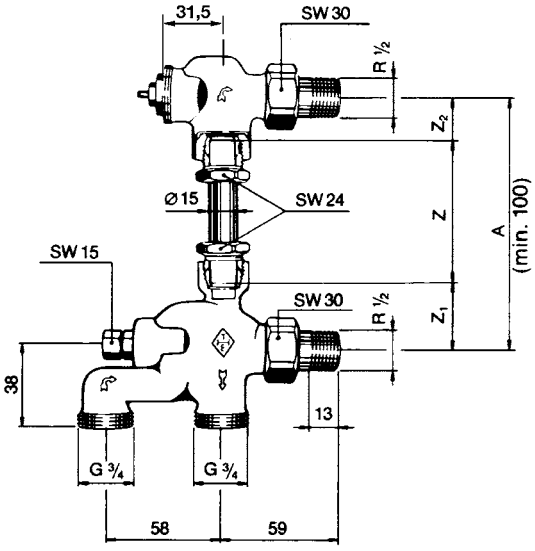
Dimensions

E-Z System
for one- and two-pipe pipe heating systems



Required length for the precision steel pipe Z:
$Z = A – (Z_1 + Z_2)$
$Z_1 = 30$
$Z_2 = 78$





$Z = A – (Z_1 + Z_2)$
$Z_1 = 30$
$Z_2 = 13$

1 mm = 0,0394 inch

E-Z System ed.2 09.2022