Duolux 50

Valve set for two-pipe heating systems

HEIMEIER

Pressurisation & Water Quality › Balancing & Control › Thermostatic Control

ENGINEERING ADVANTAGE

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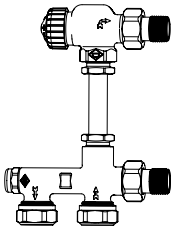
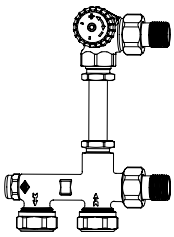
TA HYDRONICS

Valve overview

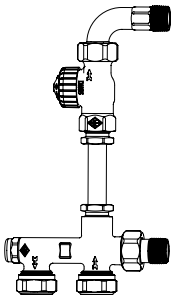
Two-pipe manifold – straight type



Two-pipe manifold, straight type.
Axial valve.
Riser and compression fittings.

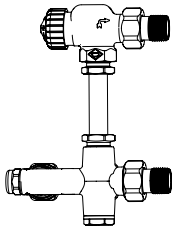


Two-pipe manifold, straight type.
Angle valve.
Riser and compression fittings.

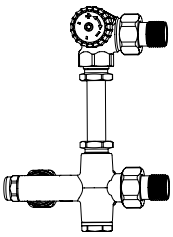


Two-pipe manifold, straight type.
Straight valve with bend fitting.
Riser and compression fittings.

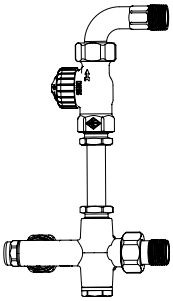
Two-pipe manifold – angle type



Two-pipe manifold, angle type.
Axial valve.
Riser and compression fittings.



Two-pipe manifold, angle type.
Double angle valve.
Riser and compression fittings.



Two-pipe manifold, angle type.
Straight valve with bend fitting.
Riser and compression fittings.

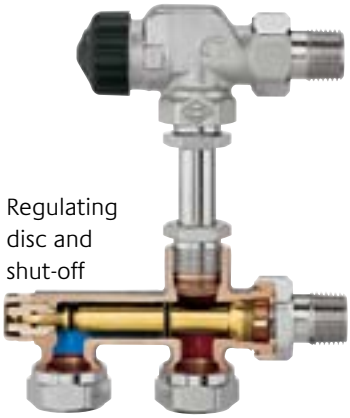
Description

HEIMEIER Duolux 50 is a complete valve set for two-pipe heating systems for attaching radiators to single-storey heating manifolds.
Duolux 50 comprises a two-pipe manifold of angle or straight type, riser and thermostatic valve body with black protective cap.
The angle type two-pipe manifold can be fitted both to the right and left of the radiator.
Pipe-side G 3/4 adaptor with cone – fits compression fittings for plastic, copper, precision steel and multi-layer pipe.
The centre-to-centre distance of the pipe connections is 50 mm.
For HEIMEIER valves, only use the corresponding, designated HEIMEIER compression fittings (designation e.g. 15 THE).
Thanks to the regulating disk directly on the radiator, the two-pipe manifold can be used for hydraulic balancing. At the same time, this pre-setting assumes the return flow shut-off function. As a result, the radiator can be detached without draining the system.

Assembly

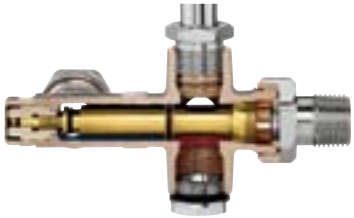
Duolux 50

Two-pipe manifold straight type
with axial thermostatic valve body



G 3/4 connection thread

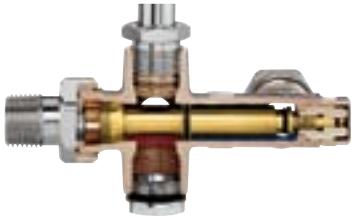
Two-pipe manifold of the angle type
Connection at radiator on the left



Sealing plugs

- **Body made of corrosion-resistant gunmetal, nickel-plated**
- **50 mm centre-to-centre distance of the pipe connections**
- **Angle type suitable for fitting left and right on the radiator**
- **Presetting with shutoff function, sealing softly**

Two-pipe manifold of the angle type
Connection at radiator on the right



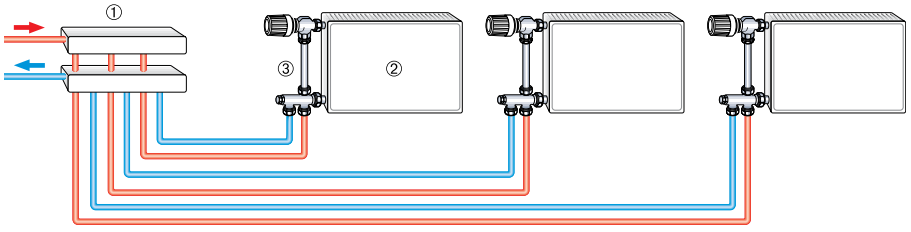
Sealing plugs

- **Compression fittings for atta-ching to all usual pipe types and connection diameters**
- **Fits every installation thanks to various thermostatic valve bodies**

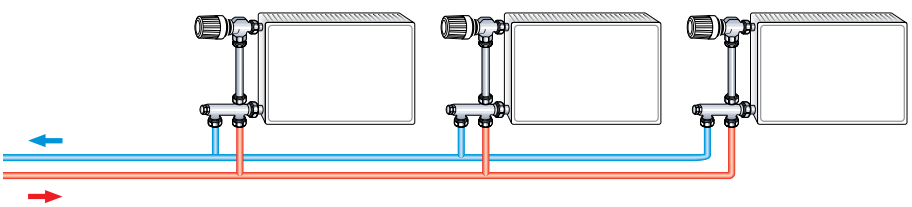
Application

Duolux 50 has been specially developed for rational and easy-installation radiator attachment. With this connecting system – also termed „spaghetti system“ – each radiator is directly attached with its own supply and return flow pipe to a central single-storey heating manifold.
If the single-storey manifold does not have controllable connection fittings, then the regulating disk in the Duolux 50 two-pipe manifold enables the radiators to be hydraulically balanced one to another.
The Duolux 50 manifold of the angle type can be fitted both to the right and left of the radiator. For installation on the right of the radiator, the sealing plug is to be unscrewed - using a SW 22 spanner - from its original position. It is then to be screwed in on the opposite side.

Sample application
Two-pipe connecting system Parallel arrangement of all radiators



„Classic“ two-pipe system Laying the supply and return flow pipes e.g. in the plinth



1. Single-storey heating manifold
2. Radiator
3. Duolux 50

Information

– To stop any damage and scale arising in hot water heating systems, the composition of the thermal fluid is to conform to VDI Directive 2035.
The VdTÜV instructional leaflet 1466/AGFW instructional leaflet 5/15 is to be heeded in respect of industrial and district heating systems. Mineral oil and/or all kinds of lubricants containing mineral oil in the thermal fluid produce considerable swelling and, in most cases, lead to the failure of EPDM seals.
When using non-nitrite anti-freeze and anti-corrosive based on ethylene glycol, the relative guide-lines - especially on additive concentration - are to be taken from the documentation of the antifreeze and anti-corrosive agent manufacturer.
– The thermostatic valve bodies fit all HEIMEIER thermostatic heads and thermic and/or motor-driven actuators.
Optimum adjustment of the components one to another ensures a maximum degree of safety. In using actuators from other manufacturers, it is to be ensured that their actuating power in the closing zone is suitable for thermostatic valve bodies with soft-sealing valve heads.

Operation

Presetting

Unscrew sealing cover (SW 19). With Allen key (3 mm) check 0 position - i.e. regulating disk must be fully opened, turning anti-clockwise. Necessary presetting is made according to diagram by turning clockwise. Screw on sealing cover and tighten.

Shutoff

Unscrew sealing cover (SW 19). Using Allen key (3 mm), shutoff return flow by fully turning clockwise. Screw on sealing cover. Exchange thermostatic head for protective cap, close valve and after detaching radiator secure valve body with G 3/4 sealing cap. Important: Before return flow shutoff, turn anti-clockwise to establish (number of revolutions) whether presetting has been undertaken. This is to ensure that once the radiator is in place the original presetting can be reset.

Article

Axial thermostatic valve body
With black protection cap.
Nickel-plated gunmetal. DN 15 (1/2").

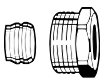
	Art. no.
	2225-02.000

Double angle thermostatic valve body
With black protection cap.
Nickel-plated gunmetal. DN 15 (1/2").

	Art. no.
Connection to radiator – left	2311-02.000
Connection to radiator – right	2310-02.000

Straight thermostatic valve body with bended nipple
With black protection cap.
Nickel-plated gunmetal. DN 15 (1/2").

	Art. no.
	2206-02.000

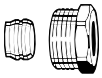


Compression fitting
for precision steel pipes.
Metal-to-metal joint. Brass nickel-plated.
Female thread connection Rp 1/2.

	Art. no.
	2201-15.351

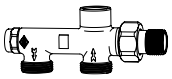
Precision steel pipe
For supply pipe. Chrome-plated.
Ø 15 mm. 1100 mm long.

Art. no.
3831-15.169



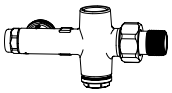
Compression fitting
for precision steel pipes. Metal-to-metal joint. Brass nickel-plated. Female thread connection Rp 1/2.

Art. no.
2201-15.351



Two-pipe manifold, straight type
with shut-off and presetting
DN 15 (1/2"). Gunmetal, nickel-plated.

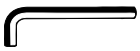
Art. no.
3810-50.000



Two-pipe manifold, angle type
with shut-off and presetting
DN 15 (1/2"). Gunmetal, nickel-plated.

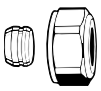
Art. no.
3811-50.000

Accessories



Allen key
size 3 DIN 911 for shut-off and adjustment.

Art. no.
3831-03.256

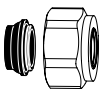


Compression fitting
for copper or precision steel pipe.
Nickel plated brass.
Connection male thread G3/4.
For pipe wall thickness of 0,8 – 1 mm supporting sleeves must be used. Pay attention to pipe manufacturer's details.

Ø Rohr	Art. no.
12	3831-12.351
15	3831-15.351
16	3831-16.351
18	3831-18.351

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

L	Ø Pipe	Art. no.
25.0	12	1300-12.170
26.0	15	1300-15.170
26.3	16	1300-16.170
26.8	18	1300-18.170



Compression fitting
for copper or precision steel pipe.
Nickel plated brass. Soft sealed.
Connection male thread G 3/4.

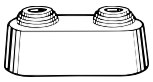
Ø Rohr	Art. no.
15	1313-15.351
18	1313-18.351

Compression fitting
for plastic pipes. Nickel-plated brass.
Connection male thread G 3/4.

Ø Pipe	Art. no.
14x2	1311-14.351
16x2	1311-16.351
17x2	1311-17.351
18x2	1311-18.351
20x2	1311-20.351

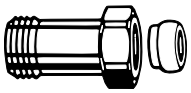
Compression fitting
for multi-layer pipes.
Nickel-plated brass.

Ø Pipe	Art. no.
16x2	1331-16.351



Double rosette
Dividable in the middle, made of plastic, white, for various pipe diameters. Centre distance 50 mm.
Overall height max. 31 mm.

	Art. no.
	0520-00.093

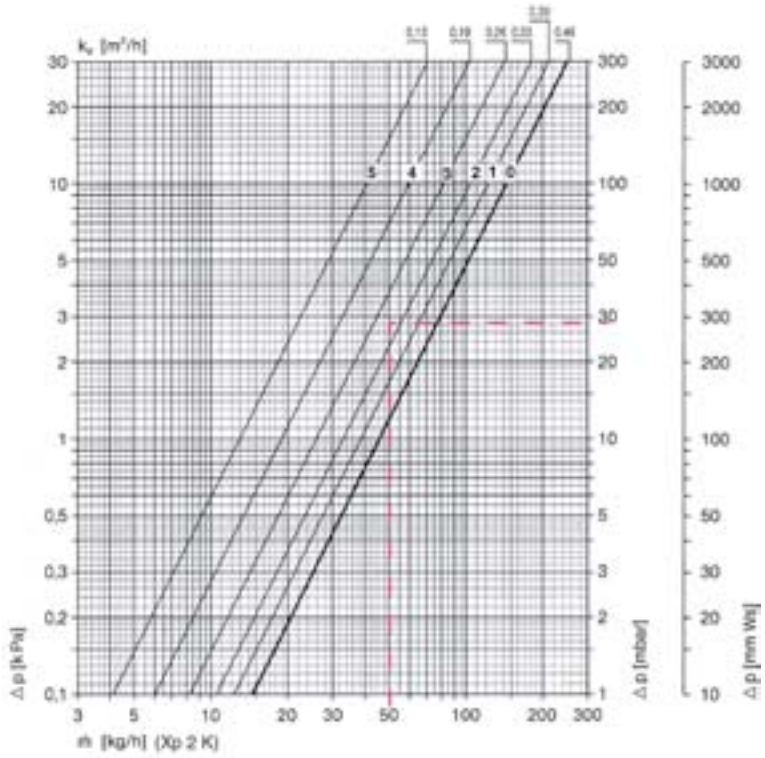


Length adjustment fitting
For clamping plastic, copper, precision steel or multi-layer pipes.
For valves with male thread connection G 3/4. Brass nickel-plated.

	L	Art. no.
G3/4 x G3/4	25	9713-02.354
G3/4 x G3/4	50	9714-02.354

Technical data

Diagram - Duolux 50 Two-pipe manifold with valve body and thermostatic head



Two-pipe manifold with valve body and thermostatic head	kv-value [m3/h] (at presetting 0) P-band [K]					Kvs [m³/h]		Kvs-value without thermostatic valve	Permitted operating temperature	Permitted operating gauge pressure	Permited differential pressure at which the valve can still be closed Δp [bar]		
DT, WET, AT	1,0	1,5	2,0	2,5	3,0	DT ADT	WET	[m³/h]	TB [°C]	PB [bar]	Th. head	EMO T/NC EMOtec /NC EMO 1/3 EMO EIB/LON	EMO T/ NO EMOtec /NO
DN 15 (1/2")	0,25	0,36	0,46	0,53	0,59	0,93	0,86	1,29	120*)	10	1,0	3,5	3,5

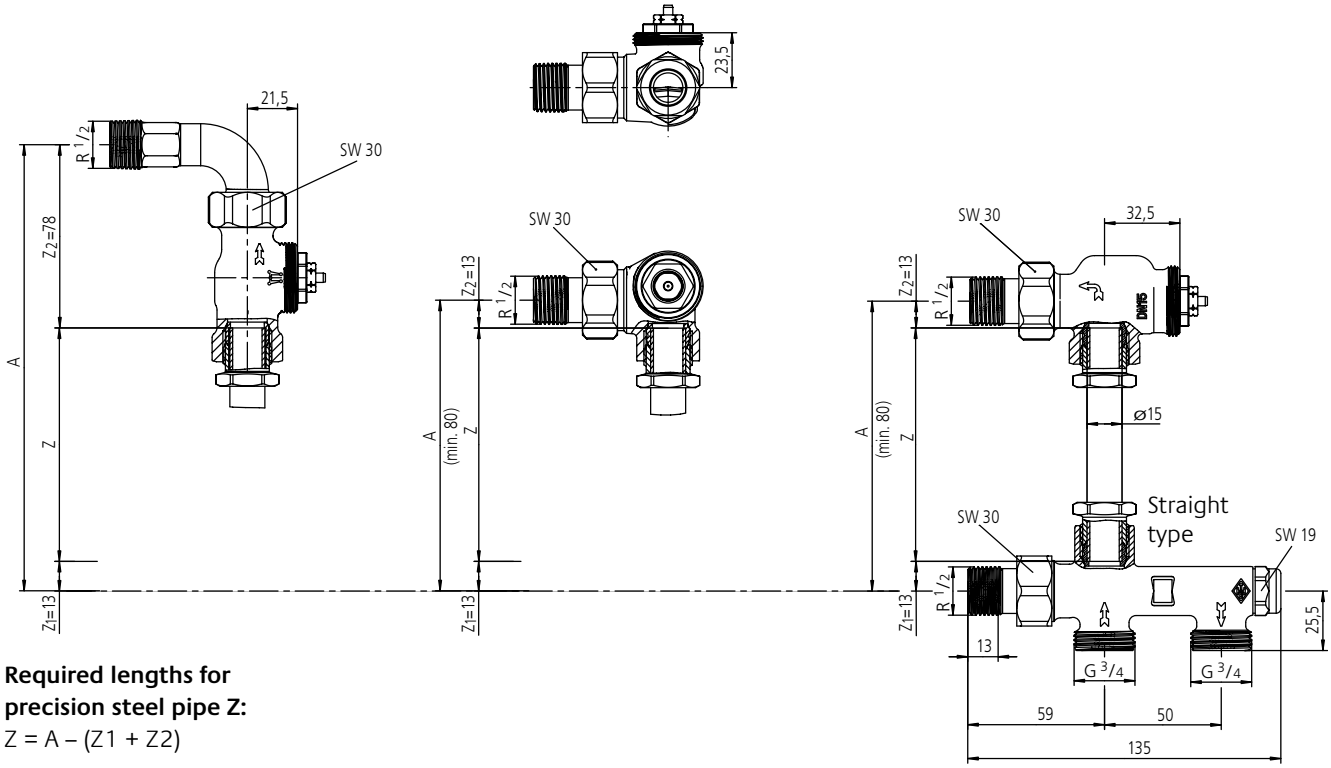
*) with protection cap or actuator 100 °C (212 °F).

Sample calculation

To find:	Presetting figure Duolux 50		
Given:	Heat flux	$\dot{Q}$	= 870 W
	Temperature spread	Δt	= 15 K (70/55°C)
	Pipe dimension	Ø	= 12 x 2 mm
	Pipe length	l	= 15 m
	Pressure loss unfav. radiator	Δp_{HK1}	= 53,5 mbar
Solution:	Mass flow	$\dot{m}$	= $\dot{Q}$ / (c·Δt) = 870 / (1,163·15) = 50 kg/h
	Pressure drop connecting line	R	= 1,7 mbar/m
	Pressure loss connecting line	Δp_R	= R·l = 1,7·15 = 25,5 mbar
	Pressure loss Duolux 50	Δp	= ΔpH_{K1} - Δp_R = 53,5-25,5 = 28,0 mbar
	Setting figure from diagram		2,5 revolutions

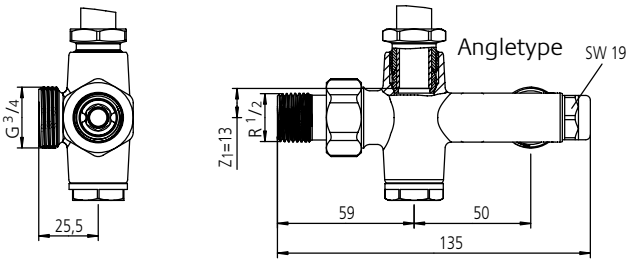
Dimensions

Duolux 50
Angle and straight type



Required lengths for precision steel pipe Z:
Z = A – (Z1 + Z2)

SW = size (spanner size)



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