IMI HEIMEIER

Duolux 50

Thermostatic valves with radiator connection systems

Valve set for two-pipe heating systems

IMI Hydronic Engineering

Breakthrough Engineering

Duolux 50

Duolux 50 for two-pipe systems has been specially developed for rational and easy-installation radiator attachment. With this connecting system each radiator is directly attached with its own supply and return flow pipe to a central single-storey heating manifold. Centre-to-centre distance of connections 50 mm. Angle type suitable for fitting left and right on the radiator.

Key features

- **50 mm centre-to-centre distance of the pipe connections**
- **Angle type suitable for fitting left and right on the radiator**
- **With V-exact II presetting and manifold with shut-off function**
- **Fits every installation thanks to various thermostatic valve bodies**

Technical description

Applications area:
Two-pipe heating systems

Function:
Control
Stepless presetting
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 V-exact II: Brass, PPS (polyphenylsulphide) and SPS (syndiotactic polystyrene).
The complete thermostatic insert can be replaced using the fitting tool without draining the system.
Spindle: Niro-steel spindle with double O-ring sealing.

Other:
See “Articles” and “Accessories”.

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

Marking:
Thermostatic valve body:
THE, country code, II+ Designation and flow direction arrow.
White protection cap.

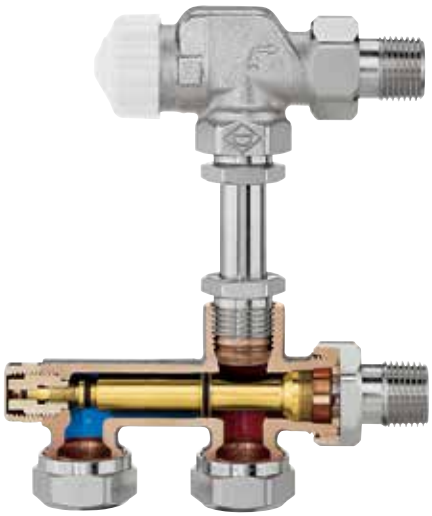
Manifold:
THE and flow direction arrows.

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

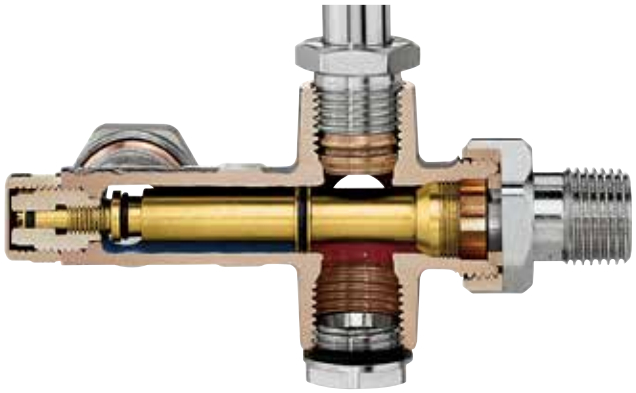
Connection to thermostatic head and actuator:
HEIMEIER M30x1,5

Contruction

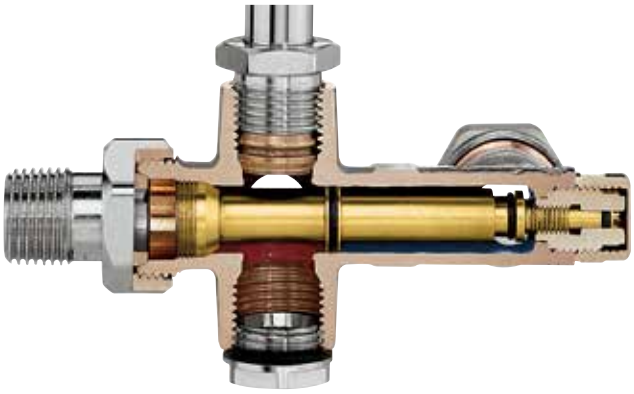
Duolux 50
Two-pipe manifold straight type with axial thermostatic valve body



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



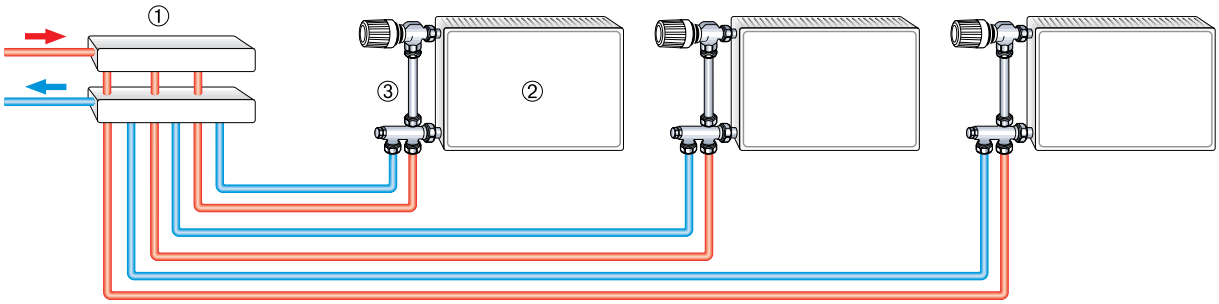
Connection at radiator on the right



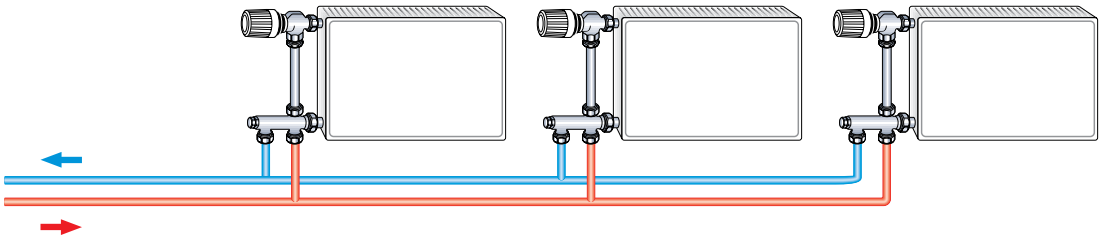
Application

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 manifold does not include presetting connection devices, Duolux 50 two-pipe distributors equipped with V-exact II thermostatic valve bodies with stepless precision presetting enable an hydraulic balancing between the radiators. The Duolux 50 two-pipe distributor with shut-off assumes the function of the return shut-off so that the radiator can be removed without draining the system.
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 (see also “Construction”).

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

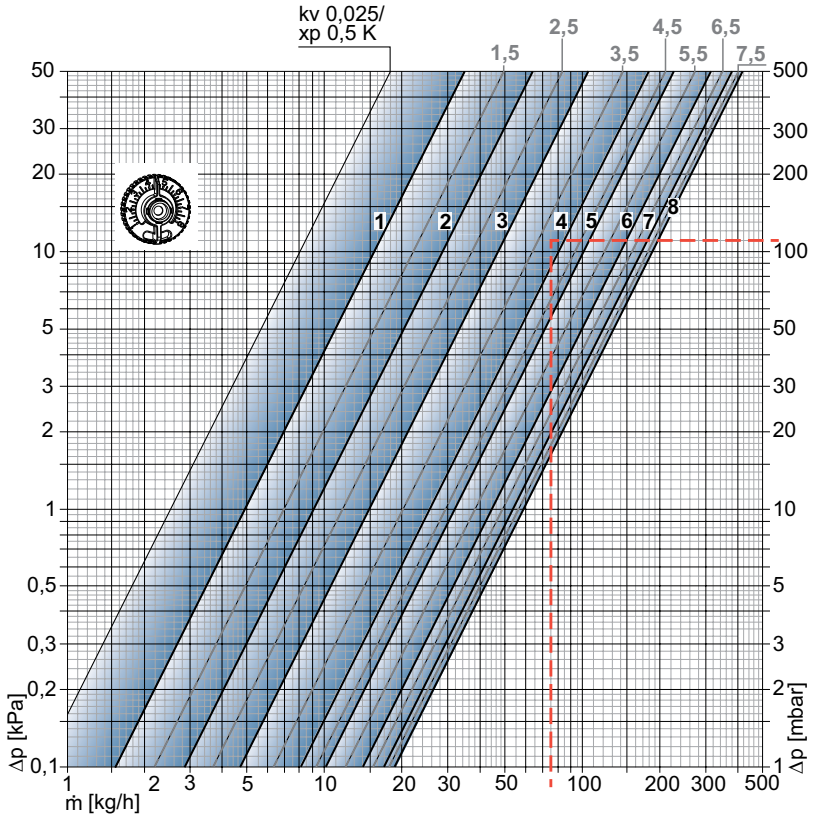


1. Single-storey heating manifold
2. Radiator
3. Duolux 50

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 HEIMEIER thermostatic heads and HEIMEIER or 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

Diagram - Duolux 50 Two-pipe manifold with valve body and thermostatic head
P-band [xp] **2,0 K**



Two-pipe distributor with thermostatic head and valve body

DN 15 (1/2")	Presetting								Kvs without thermostatic valvel	Permitted differential pressure, during which the valve is kept closed Δp [bar]	
	1	2	3	4	5	6	7	8		Th.-Kopf	EMO T/TM EMOtec TA-TRI TA-Slider 160
Kv-value	0,049	0,090	0,149	0,260	0,320	0,442	0,540	0,595	1,29	1,0	3,5
Kvs-value	0,049	0,102	0,183	0,304	0,399	0,518	0,642	0,712			

Kv/Kvs = m^3/h at a pressure drop of 1 bar.
Kv [xp] max. 2 K = m^3/h at a pressure drop of 1 bar with thermostatic head.

Sample calculation
Target:
Setting range V-exact II

Given:
Heat flow Q = 1308 W
Temperature spread Δt = 15 K (65/50 °C)
Pressure loss, thermostatic valve ΔpV = 110 mbar
Solution:
Mass flow m = Q / (c · Δt) = 1308 / (1,163 · 15) = 75 kg/h

Setting range from Diagram: 4

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

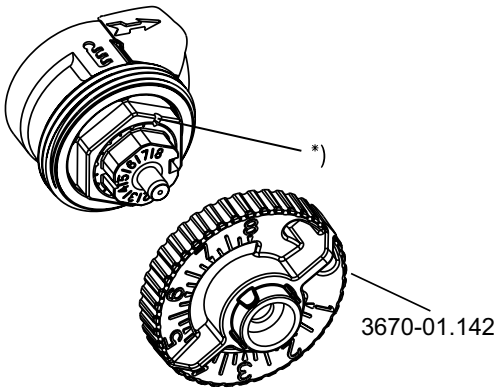
$$Kv = Cv \cdot 0{,}86$$

Operation

V-exact II presetting
The presetting can be selected steplessly between 1 and 8. There are 7 additional marks between the preset values, thus enabling exact setting. Setting 8 corresponds to the standard setting (factory setting). The technician can undertake or change the setting with the setting key or spanner (13 mm). This ensures unauthorised persons cannot tamper with the setting.

- Plug the setting key or universal key into the valve insert and turn until it engages in position.
- Turn the index of the desired setting value to the index figure of the valve insert.
- Withdraw the key. The setting on the valve insert is visible from the actuating direction (see fig.).

Front-end visibility

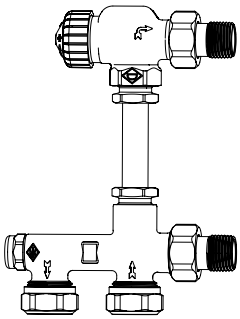


*) Index

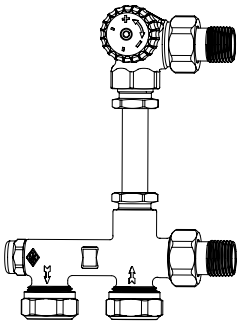
Shut-off
Release and unscrew blanking plug (size 19). Using a hexagon key (3 mm), shut off return by turning all the way right. Screw off blanking plug.
Exchange protection cap for thermostatic head, close valve and secure valve body with a plug cap G3/4 once the radiator has been removed.

Valve overview

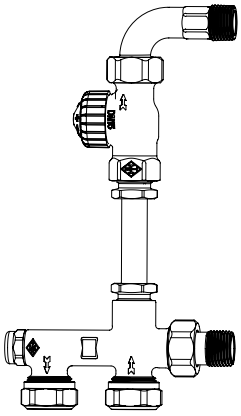
Two-pipe manifold – straight type



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

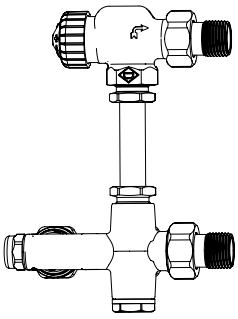


Two-pipe manifold, straight type.
Angle valve.
Riser and compression fittings.

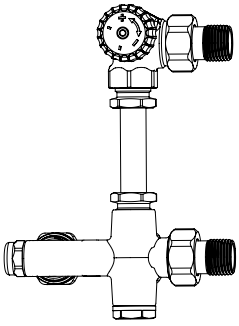


Two-pipe manifold, straight type.
Straight valve with bend fitting.
Riser and compression fittings.

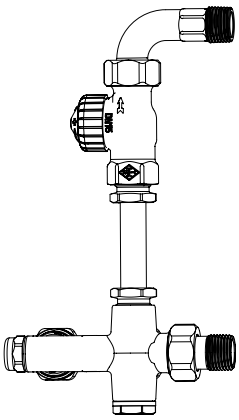
Two-pipe manifold – angle type



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

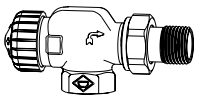


Two-pipe manifold, angle type.
Double angle valve.
Riser and compression fittings.



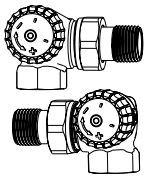
Two-pipe manifold, angle type.
Straight valve with bend fitting.
Riser and compression fittings.

Articles



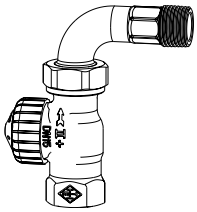
Axial thermostatic valve body V-exact II
With white protection cap.
Nickel-plated gunmetal.

		EAN	Article No
DN 15 (1/2")		4024052838110	3710-02.000



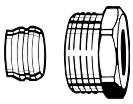
Double angle thermostatic valve body V-exact II
With white protection cap.
Nickel-plated gunmetal.

		EAN	Article No
DN 15 (1/2")	Connection to radiator – left	4024052839117	3713-02.000
DN 15 (1/2")	Connection to radiator – right	4024052839414	3714-02.000



Straight thermostatic valve body with bended nipple V-exact II
With white protection cap.
Nickel-plated gunmetal.

	EAN	Article No
DN 15 (1/2")	4024052840717	3756-02.000

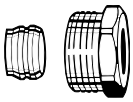


Compression fitting
for precision steel pipes.
Female thread connection Rp 1/2.
Metal-to-metal joint.
Brass nickel-plated.

	EAN	Article No
	4024052175017	2201-15.351

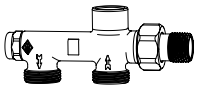
Precision steel pipe
For supply pipe.
Chrome-plated.
Ø 15 mm. 1100 mm long.

	EAN	Article No
	4024052214518	3831-15.169



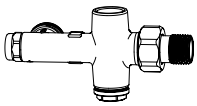
Compression fitting
for precision steel pipes.
Female thread connection Rp 1/2.
Metal-to-metal joint.
Brass nickel-plated.

	EAN	Article No
	4024052175017	2201-15.351



Two-pipe manifold, straight type
with shut-off and presetting.
Gunmetal, nickel-plated.

	EAN	Article No
DN 15 (1/2")		3810-50.000



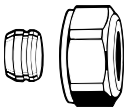
Two-pipe manifold, angle type
with shut-off and presetting.
Gunmetal, nickel-plated.

	EAN	Article No
DN 15 (1/2")		3811-50.000

Accessories

Setting key
for Multilux and V-exact II.

EAN	Article No
4024052035823	3670-01.142

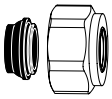


Compression fitting
for copper or precision steel pipe.
Connection male thread G3/4.
Metal-to-metal joint.
Nickel plated brass.
For pipe wall thickness of 0,8 – 1 mm supporting sleeves must be used.
Pay attention to pipe manufacturer's details.

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

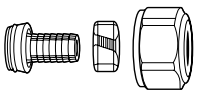
Supporting sleeves
for copper or precision steel pipe with a wall thickness of 1 mm.

L	Ø	EAN	Article No
25,0	12	4024052127016	1300-12.170
26,0	15	4024052127917	1300-15.170
26,3	16	4024052128419	1300-16.170
26,8	18	4024052128815	1300-18.170



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

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

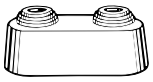


Compression fitting
for plastic pipes.
Connection male thread G 3/4.
Nickel-plated brass.

Ø Pipe	EAN	Article No
14x2	4024052134618	1311-14.351
16x2	4024052134816	1311-16.351
17x2	4024052134915	1311-17.351
18x2	4024052135110	1311-18.351
20x2	4024052135318	1311-20.351

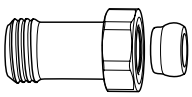
Compression fitting
for multi-layer pipes.
Male thread connection G 3/4.
Nickel-plated brass.

Ø Pipe	Article 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.

EAN	Article No
4024052120710	0520-00.093

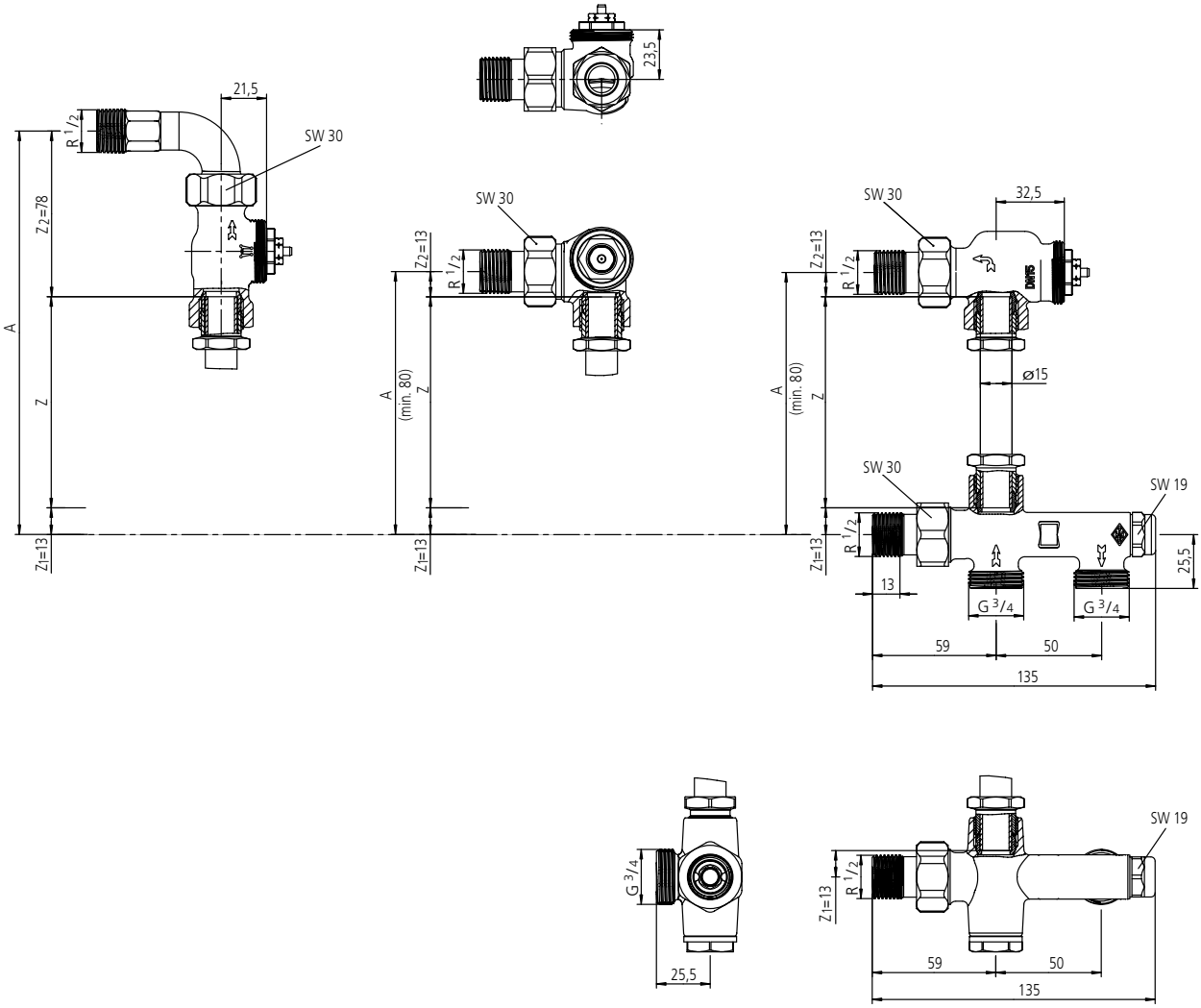


Length adjustment fitting
For clamping plastic, copper, precision steel or multi-layer pipes.
For valves with male thread connection G 3/4.
Brass nickel-plated.

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

Dimensions

Duolux 50
Angle and straight type



Required lengths for precision steel pipe Z:
$Z = A - (Z_1 + Z_2)$

SW = Spanner opening

1 mm = 0,0394 inch

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