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English

Installation and Operation Instructions Return distribution set Friwa, compatible with



FriwaMini / FriwaMidi



FriwaMidi cascade / FriwaMaxi



FriwaMaxi cascade



FriwaMega / cascade

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1 General Information



Carefully read these instructions before installation and commissioning.

Save these instructions in the vicinity of the installation for future reference.

1.1 Scope of these instructions

These instructions describe the assembly and the function of the return distribution set for the domestic hot water module FriwaMini, FriwaMidi, FriwaMaxi or FriwaMega.

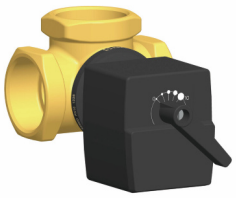
The chapters marked with [specialist] are intended for specialists only.

The commissioning of the domestic hot water modules is described in their respective instructions, which are enclosed with the individual modules.

For other components of the installation, such as storage tanks, controllers or pumps, please refer to the instructions of the corresponding manufacturer.

This product complies with the relevant directives and is therefore labelled with the CE mark. The Declaration of Conformity is available upon request, please contact the manufacturer.

These instructions refer to the following return distribution sets:

item no.	compatible with	illustration	item no.	compatible with	illustration
5675431	FriwaMini FriwaMidi		5675532	FriwaMaxi cascade	
5675531	FriwaMidi cascade FriwaMaxi		6404244	FriwaMega FriwaMega cascade	

2 Safety instructions

The installation and commissioning as well as the connection of electrical components require technical knowledge commensurate with a recognised vocational qualification as a fitter for plumbing, heating and air conditioning technology, or a profession requiring a comparable level of knowledge [specialist].

The following must be observed during installation and commissioning:

- relevant local and national regulations
- accident prevention regulations of the professional association
- instructions and safety instructions mentioned in these instructions

⚠ WARNING



Risk to life and limb due to electric shock!

► Prior to commencing electrical work on the controller, pull the mains plug!

► Only after completing all work, plug the mains plug into a socket. This avoids an unintentional start of the motors.

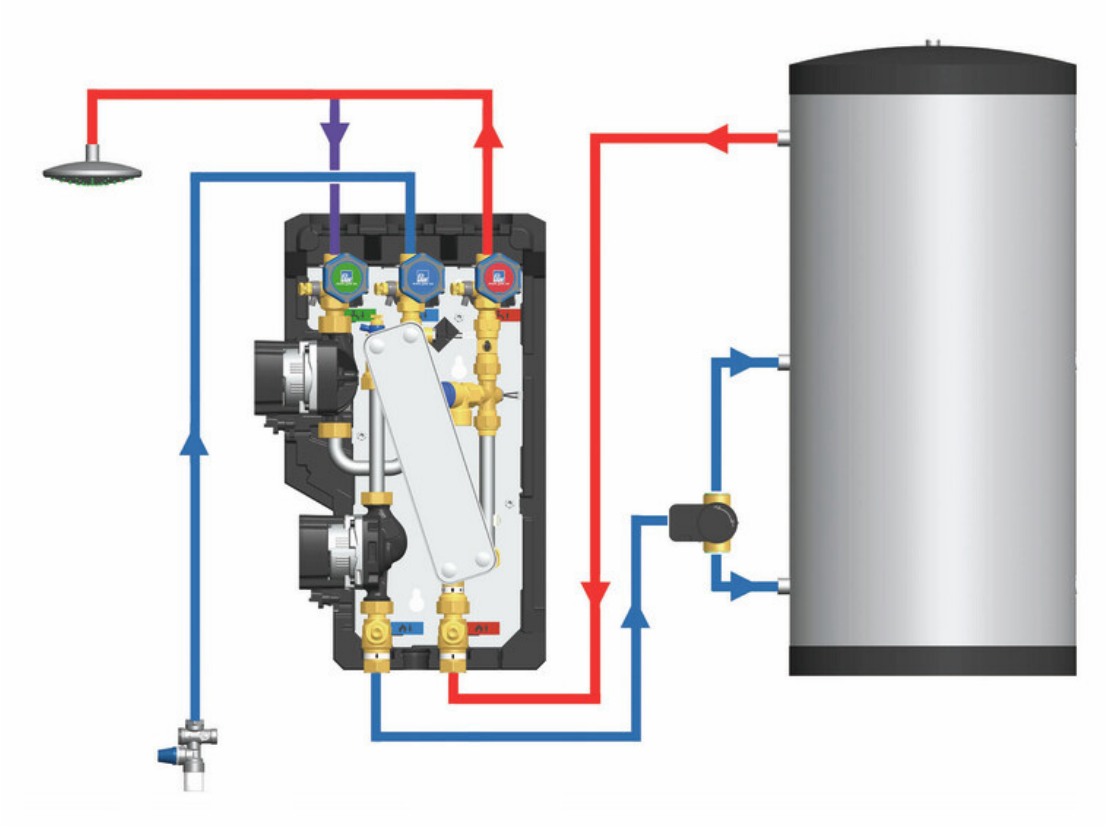
3 Product description

In circulation mode, the return temperatures of the domestic hot water module are relatively high. To prevent the return water from mixing with the cold water in the lower section of the storage tank, the return distribution set allows to feed the warm water into the upper section. The return distribution set contains a three-way valve with an electric actuator (depending on the size).

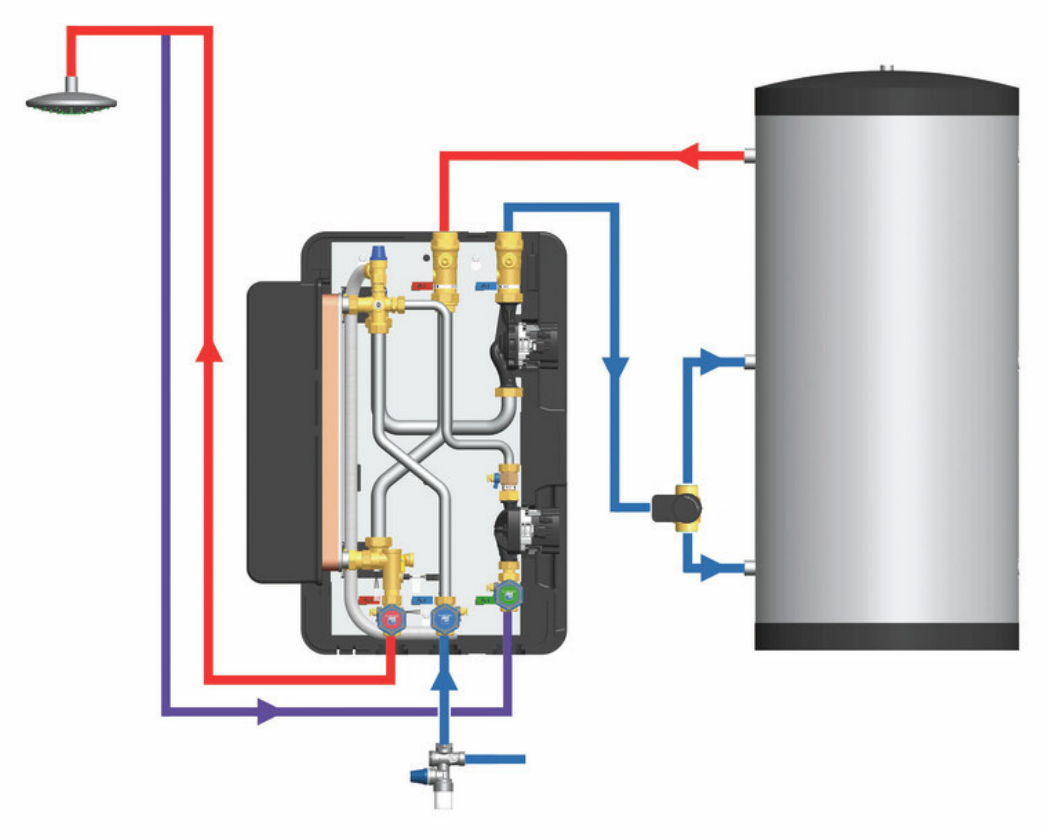
4 Mounting example for FriwaMini, FriwaMidi and FriwaMaxi

This mounting examples refer to the following switch valves:

- 5675431 - compatible with FriwaMini and FriwaMidi
- 5675531 - compatible with FriwaMidi cascade and FriwaMaxi
- 5675532 - compatible with FriwaMaxi cascade

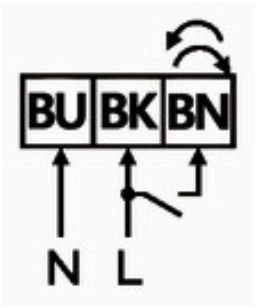


FriwaMini with circulation



FriwaMidi with circulation

Adjust the flow direction of the switch valve depending on how the domestic hot water module is connected to the storage tank (see separate instructions for the switch valve).

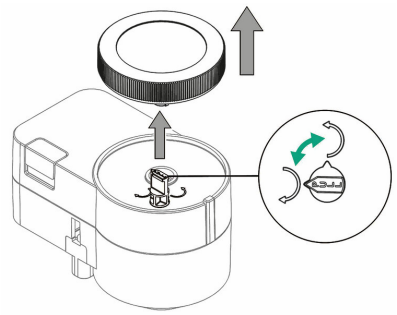


Wire colour:

1 blue (BU)
2 black (BK)
3 brown (BN)

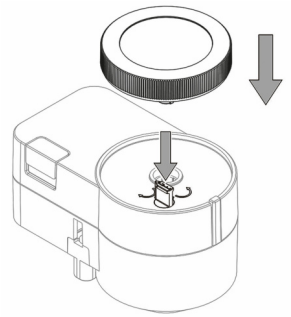
Note: Only use the original PAW connection cable supplied with the product.

Setting the opening direction of the valve



1. Remove the rotary knob and pull the jumper upwards. Turn the jumper so that the arrow points to the desired direction of rotation of the valve.

   When delivered, the actuator rotates clockwise.



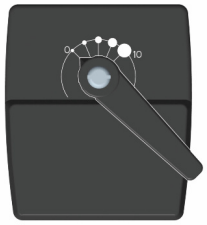
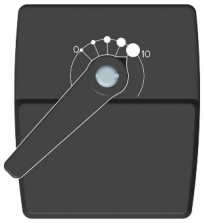
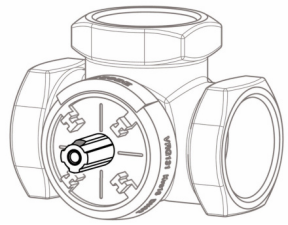
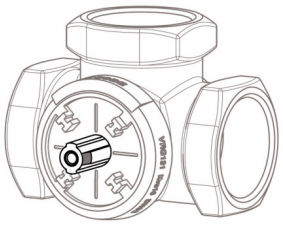
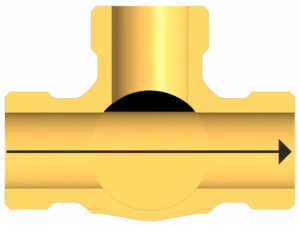
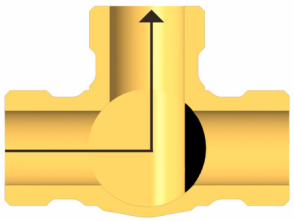
2. Push the jumper back into position and then put on the rotary knob.

5 Mounting example for FriwaMega

This mounting example relates to the return distribution set 6404244 – compatible with FriwaMega and FriwaMega cascade.



Adjust the direction of rotation of the actuator depending on how the domestic hot water module is connected to the storage tank (see separate instructions for the actuator).

Priority (actuator de-energised)	**Secondary (actuator energised)**
	
position 0	position 10
	
Valve knob at the top	Valve knob on the right
	

Ensure that the tab is in the correct position!

6 Electrical connection [specialist]

⚠ WARNING



Risk to life and limb due to electric shock!

- ► Prior to commencing electrical work on the controller, pull the mains plug!
- ► Only after completing all installation work, plug the mains plug of the controller into a socket. An unintentional start of the motors is thus avoided.

6.1 Connection to the FC3.10 controller



The following section explains how to connect the 3-way valve electrically to the controller and how to link the controllers together to enable communication between them.

Single controller: Connect the 3-way valve to relay 2.

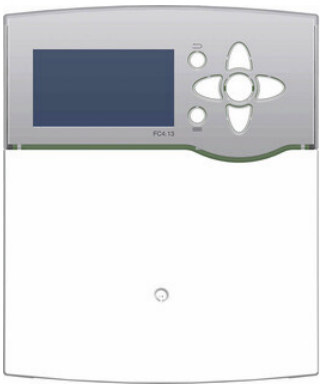
Cascade: The 3-way valve must only be connected to relay 2 on server 1. Crimp the two conductors (L_{const}) from the 3-way valve (return stratification) and the 2-way zone valve (cascade valve) together using the enclosed twin ferrule, and then connect them to terminal "L". Then connect the switched live and neutral conductor of the 2-way zone valve (cascade valve) to relay R1, and the switched live and neutral conductor of the 3-way valve (return stratification) to relay R2.

This table shows how to wire the 3-way valve to the FC3.10 controller.

Switch valve	5675431, 5675531, 5675532	6404244
permanent live (L)	black	brown
neutral conductor (N to R2)	blue	blue
switched live (L an R2)	brown	white

You will find a detailed description of the operation of the controller and its functions in the controller instructions.

6.2 Connection to the FC4.13 controller



This table shows how to wire the 3-way valve to the FC4.13 controller.

Switch valve	**5675431, 5675531, 5675532**	**6404244**
permanent live (L')	black	brown
neutral conductor (N)	blue	blue
switched live (R2)	brown	white

You will find a detailed description of the operation of the controller and its functions in the controller instructions.

7 Controller adjustment [specialist]

FC3.10 controller:

Activate the "Stratification return" function on the controller. To do this, navigate to the following in the controller menu: Menu / Functions / Stratification return

Please also refer to the separate instructions of the controller!

FC4.13 controller:

Activate the "Stratification return" function on the controller. To do this, navigate to the following in the controller menu: Menu / Main menu / Circulation / Return stratification / Yes

Please also refer to the separate instructions of the controller!

8 Scope of delivery [specialist]

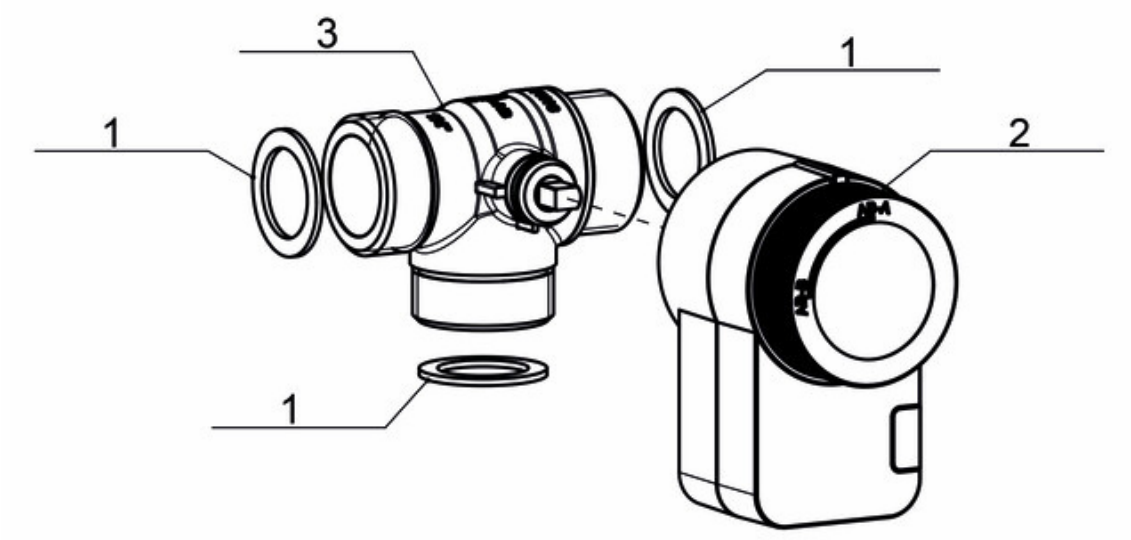
NOTICE

Serial number

Complaints and requests / orders of spare parts will only be processed with information on the serial number! The serial number is placed at the actuator.

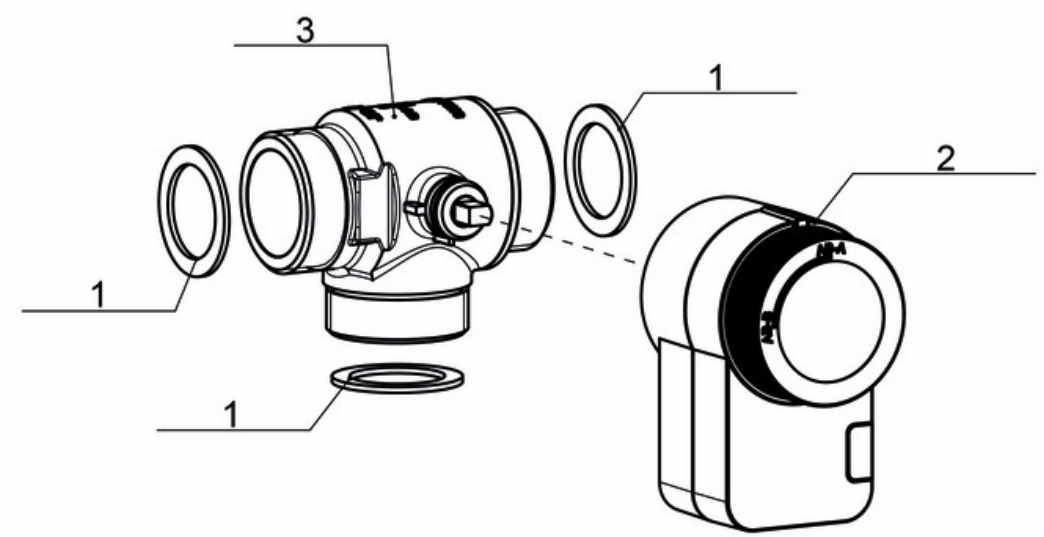
8.1 Spare parts DN 25

Switch valve with external thread G 1¼", item no. 5675431

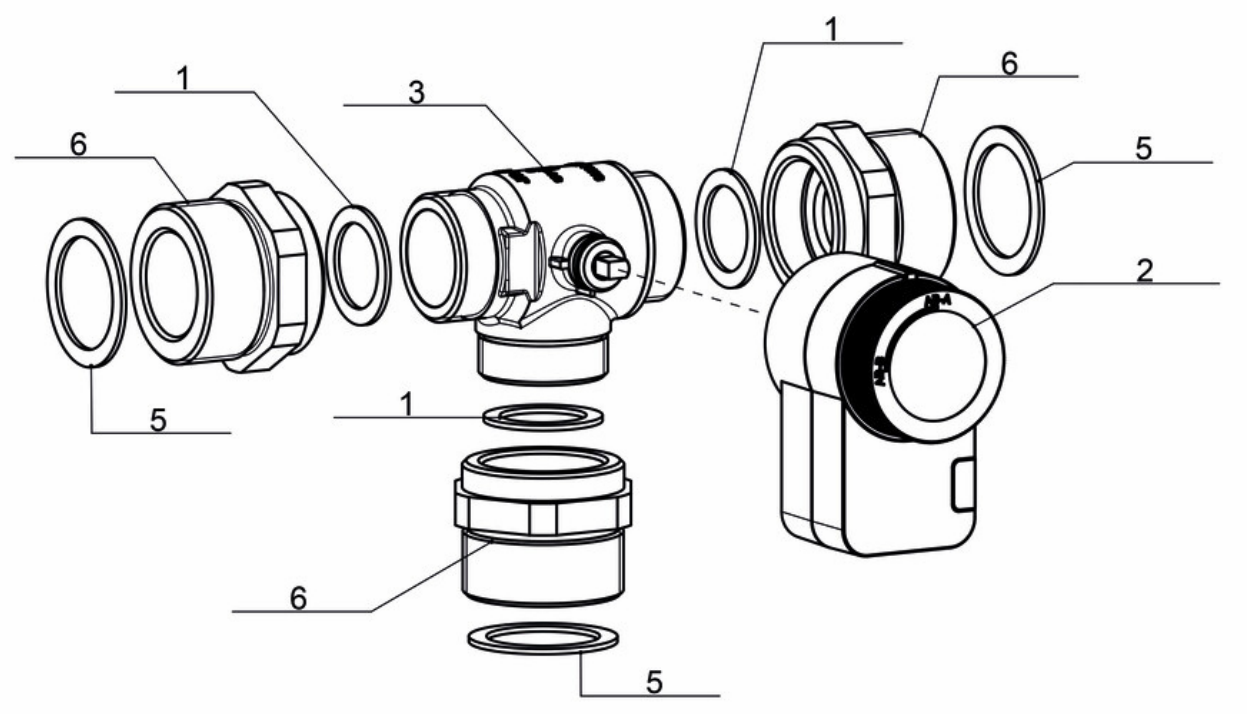


8.2 Spare parts DN 32

Switch valve with external thread G 1½", item no. 5675531

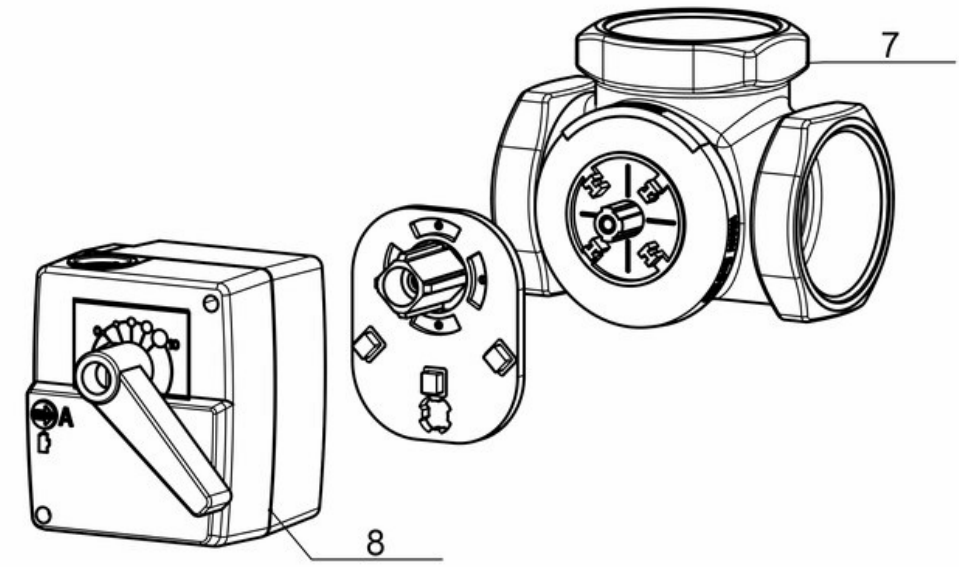


Switch valve with external thread G 1½" on external thread G 2" / DN 50, item no. 5675532



8.3 Spare parts DN 50

Return distribution set 2" int. thread, item no. 6404244



Pos.	Spare part	Item no.
1	Seal 38.0 x 27.0 x 2.0, ¾", for thread connection 1¼"; 10 pieces (for DN 25)	N00174
	Seal 44.0 x 32.0 x 2.0; 1", for thread connection 1½"; 10 pieces (for DN 32)	N00036
2	Actuator PS5-230-2P; 230 V, 5 Nm, 13 s / 90°; snap-in mechanism, 2-point control, for DN 25	N00599
	Actuator PS8-230-2P; 230 V, 8 Nm, 13 s / 90°; snap-in mechanism, 2-point control, for DN 32	N00729
3	3-way switch valve DN 25; 3x 1¼" ext. thread, Kvs 15.5; L-type ball, seals; for 5675431 and 5675433	N00681
	3-way switch valve DN 25; 3x 1¼" union nut, Kvs 15.5; L-type ball, seals; for 5675432	N00732
	3-way switch valve DN 32; 3x 1½" ext. thread, Kvs 27.6; L-type ball, seals; for 5675531 and 5675532	N00733
5	Seal 55.0 x 42.0 x 2.0, 1¼", for thread connection 2", uncoated, 10 pieces	N00047
6	Reducer; 2" ext. thread flat-sealing x 1½" int. thread flat-sealing	N00734
7	3-way mixing valve DN 50, type VRG 131-50-40, 3 x 2" int. thread	N00785
8	Actuator NR230E, 230V, 5 Nm, 35s / 90°, 1.5 m cable	7053
no pos.	Connection cable 6-fold; 3.07 m; Molex MicroFit female; 3x 0.5 mm^2; UL2517, wire end ferrules	N00635

9 Technical data

Technical data actuator	5675431	5675531	5675532	6404244
Electr. connection	230 V - 50 Hz			
Control signal	2-point			
Power consumption	< 5 W	< 8 W		2.5 W
Torque	5 Nm	8 Nm		5 Nm
Setting time	13 s			35 s
Rotation angle	90°			
Protection category	IP42			IP40
Protection class	II in accordance with EN60730-1 (actuators with 230 V ~ supply)			II, reinforced insulation
Ambient temperature	0 °C – 70 °C			0 °C – 50 °C

Technical data valve	5675431	5675531	5675532	6404244
Nominal pressure	PN 16			PN 10
K_{VS} value	15.5	27.6		40
Leakage rate	leakage rate A according to DIN EN 12266-1			< 0.02 % of the flow
Medium temperature	0 °C – 95 °C			110 °C
Medium temperature, max. temporary	110 °C			130 °C
Base position	AB-A			A-AB

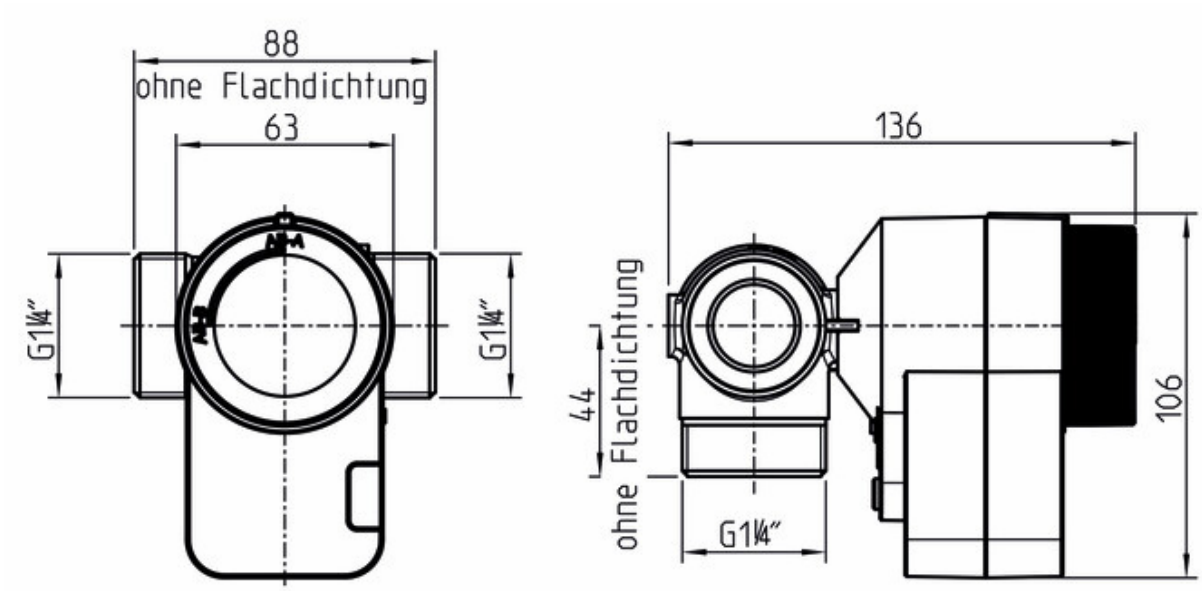
Connections / dimensions valve	5675431	5675531	5675532	6404244
Connections	3x G 1¼" ext. thread	3x G 1½" ext. thread	3x G 1½" ext. thread 3x reducer G2" ext. thread*	Rp 2"
Installation length (A-B)	88 mm	96 mm	96 / 170 mm*	120 mm
Width	88 mm	96 mm	96 / 170 mm*	120 mm
Height	106 mm		106 / 116 mm*	120 mm
Depth	136 mm	146 mm	146 / 150 mm*	176 mm
Weight	1.26 kg	1.6 kg	1.6 kg / 3.7 kg*	2.3 kg

*with thread connection / reducers

Materials	5675431	5675531	5675532	6404244
Housing	actuator: PC ABS, thermoplastic valve: CuZn39Pb2			actuator: polycarbonate valve: CuZn36Pb2As
Valves and fittings	brass			
Seals	novapress® UNIVERSAL / EPDM / PTFE			-

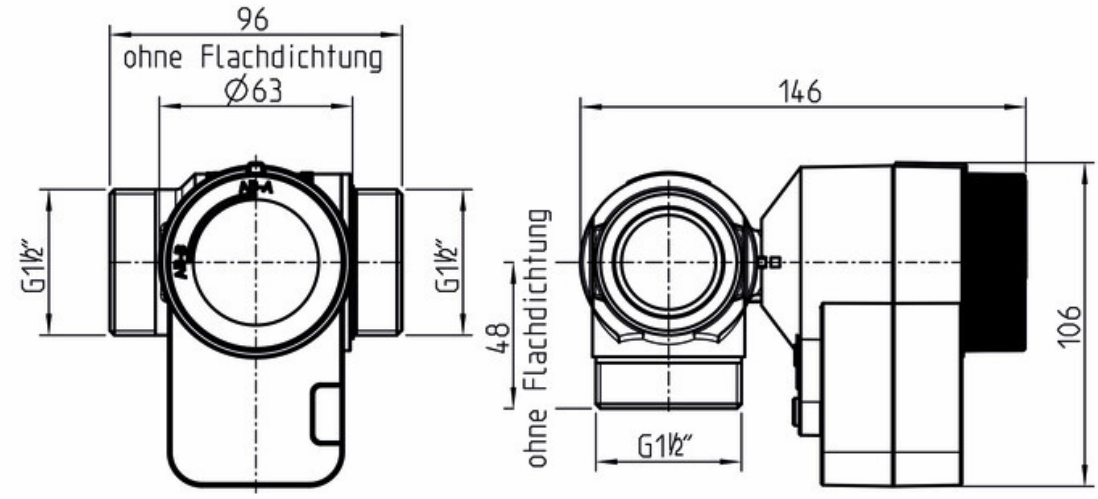
9.1 Dimensional drawings DN 25

Switch valve with external thread G 1¼", item no. 5675431

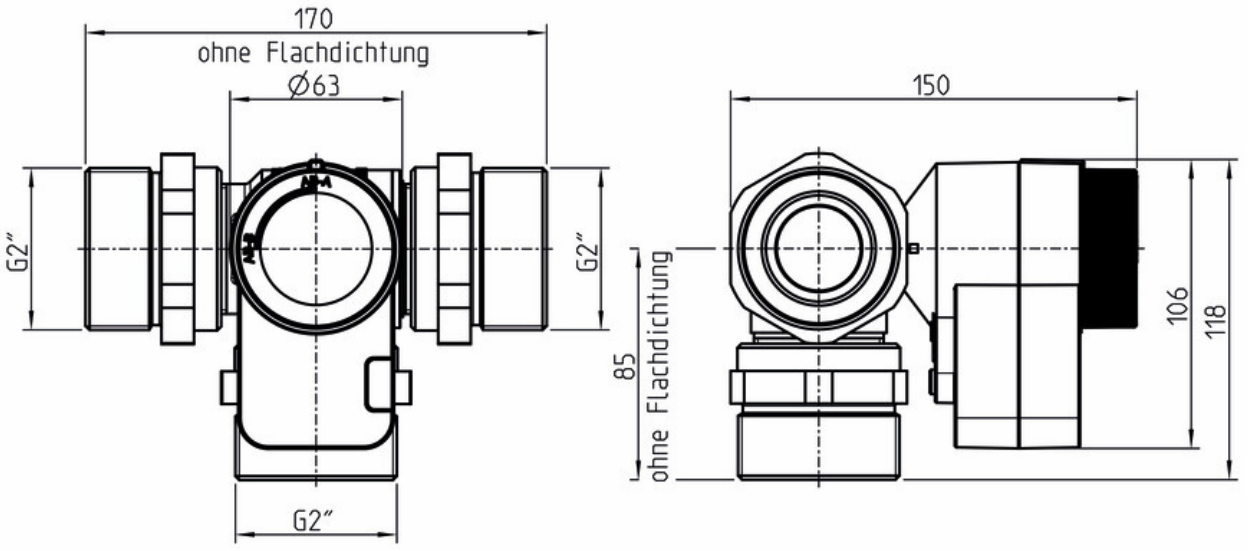


9.2 Dimensional drawings DN 32

Switch valve with external thread G 1½", item no. 5675531

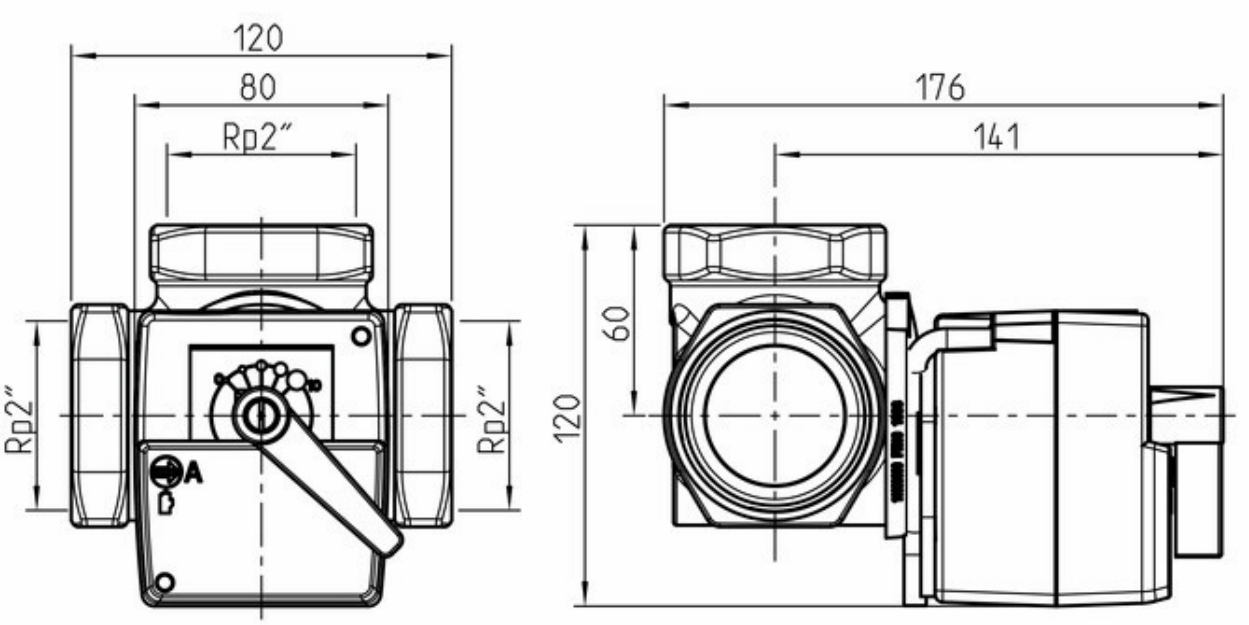


Switch valve with external thread G 1½" on external thread G 2" / DN 50, item no. 5675532



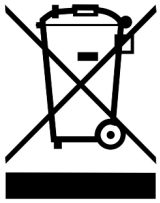
9.3 Dimensional drawings DN 50

Return distribution set 2" int. thread, item no. 6404244



ohne Flachdichtung = without flat seal

10 Disposal

NOTICE	
	Electrical and electronic devices must not be disposed of in the household waste. For your return, there are free collection points for electrical appliances and, if necessary, additional points of acceptance for the reuse of the devices in your area. The addresses can be obtained from your city or communal administration. If the old electrical or electronic device contains personal data, you are responsible for deleting it before returning the device. Batteries and rechargeable batteries must be removed prior to the disposal of the product. Depending on the product equipment (partly with optional accessories), single components can also contain batteries and rechargeable batteries. Please observe the disposal symbols on the components.

NOTICE	
	**Disposal of transport and packaging materials** The packaging materials are made of recyclable materials and can be disposed of with recyclable materials.

9964042x-mub-en – V04

Translation of the original instructions

We reserve the right to make technical changes without notice!

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