Kieback&Peter

OPERATING INSTRUCTIONS

DS5

**Actuator for CBV15..20, HW-218234,
HW-218240 and HW-218241 6-way control ball valves**

This document replaces all versions with an older release date. This version is not updated automatically. Subject to change.

The figures in this document were created with the utmost care. Nevertheless, we cannot guarantee that the delivered product will not differ from these figures.

The original operating instructions were composed in German.

Documentation in other languages has been translated from German.

Kieback&Peter is not liable for damages that result directly or indirectly from the improper use of this device.

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IMPORTANT

READ CAREFULLY BEFORE USE

RETAIN FOR LATER REFERENCE

Table of Contents

1 Notes on these operating instructions

NOTE

If you have any questions that cannot be clarified with these operating instructions, you can obtain further information from your Kieback&Peter contact person.

1.1 Validity of the operating instructions

These Betriebsanleitung are part of the DS5 actuator for CBVXX and HW-2xxxxx 6-way control ball valves and is valid only for these actuators and the described 6-way control ball valves.

To make the document easier to read, the DS5 actuator is referred to in the text below as the “actuator.” The CBVXX and HW-2xxxxx 6-way control ball valve is referred to as the “ball valve” in the text.

The positions and figures of the components in the operating instructions may differ depending on the choice of ball valve.

1.2 Display elements

NOTE

Notes provide you with important information.

You can find the following display elements in these instructions:

- List point

► Step or measure for avoiding danger

2 Safety

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2.1 Explanation of safety instructions and warnings

The basic safety instructions include instructions that apply generally for the safe use or for maintaining the safe condition of the actuator with 6-way control ball valve.

The action-specific warnings warn of residual dangers and are shown before any dangerous step.

Presentation and structure of warnings

The warnings are action-related and are structured as follows.

CAUTION

Type and source of danger!

Potential consequences when the danger occurs or the warning is not observed.

► Measures to avoid the danger.

Warnings are classified according to the severity of the hazard. The hazard levels and their corresponding signal words and warning symbols are described below:

WARNING

Indicates a hazard of medium risk which can result in **death or serious bodily injury** if not avoided.

CAUTION

Indicates a hazard of low risk which can result in **minor or medium bodily injury** if not avoided.

CAUTION

Indicates a hazard which can result in **material damage or malfunctions** if not avoided.

2.2 Basic safety instructions

Safety in the workplace depends on the attention, care and rationality of all the persons involved. To prevent damage and injury, read and follow the safety instructions below, the safety instructions in the documentation on using the components and the applicable local regulations.

Sharp edges and corners

There is a risk of skin abrasions and cuts due to sharp edges and corners, for example, on the cast body or male threads of the ball valve or individual parts of the actuator.

- ► Proceed with care.
- ► Wear protective gloves.

Parts toppling over, falling down or being thrown out

Severe injuries and property damage due to:

- The parts of the ball valve or actuator toppling over or falling down
- The parts being thrown out due to impermissible increases in pressure (bursting components)
- Impermissible drops in pressure (e.g. when using clamping devices)

- ► Secure the safety area against unauthorized entry.
- ► Secure parts against toppling over and falling down.
- ► Do not exceed the maximum operating pressure of the ball valve.

Pressurized liquids

There is a risk of severe burns and fluid jet injuries due to faulty connections.

- ► Do not exceed the maximum operating pressure of the ball valve.
- ► Check all connections after filling the system.
- ► Secure the safety area against unauthorized entry.

Hot or cold surfaces

There is a risk of severe burns or hypothermia if contact is made with hot or cold surfaces at ball valves and pipelines.

- ► Before starting the work, wait until the temperature of the pipelines and ball valves is around 5 to 35 °C.

Muscoloskeletal disorders

There is a risk of severe of musculoskeletal disorders (e.g. back injuries) due to incorrect posture or excessive exertion (e.g. due to weight loads).

- ► Proceed with care.

2.3 Responsibilities of the Operator

The actuator with ball valve must only be operated in a technically flawless and safe condition. The operator must observe the following points:

- Make sure that the operating instructions are available to all persons who carry out work on the actuator and ball valve.
- Make sure that everyone has read and understood the operating instructions before working on the actuator and ball valve.
- Ensure the required ambient conditions and clearances at the mounting location.
- Make sure that mounting, installation and commissioning are carried out only by an installer or electrical specialist, depending on the task.
- In the event of damage to the actuator and/or ball valve, inform your Kieback&Peter contact person.
- Ensure that personnel are provided with the personal protective equipment (PPE) stipulated in the specific country and use it at all times.

2.4 Qualification of personnel

Fitter

The fitter is a person who is familiar with and understands heating, ventilation and air conditioning systems. Based on his or her professional training, sufficient knowledge and experience, he or she is familiar with the actuator and ball valve described. The fitter knows the applicable regulations, can assess the work assigned and identify possible hazards.

Electrical specialist

An electrical specialist is a person who is familiar with the described actuator. Based on his or her professional training, knowledge and experience, he or she has a very good command of cabling, wiring and routing systems and has a good level of knowledge in the fields of electrical engineering and electrical machines and actuators. The electrical specialist knows the applicable regulations, can assess the work assigned and identify possible hazards.

Who is permitted to perform which tasks?

Task	Fitter	Electrical specialist
Mounting		
Mounting the ball valve	x	
Mounting the actuator	x	
Commissioning		
Electrical connection		x
Adjusting actuator functions		x
Faults and corrective measures based on the fault type		
Finding and rectifying faults	x	x
Decommissioning, disassembly and disposal		
Decommissioning the actuator		x
Disassembling the actuator	x	
Disassembling the ball valve	x	
Disposal	x	

2.5 Intended use

- The actuator with ball valve is intended for the regulation of the flow rate or the precise mixing of fluids for heating, ventilation and air conditioning systems.
- In four-line heating and cooling systems, the combination of the actuator and ball valve is used to connect heating and cooling ceilings or fan coils.
- Only operate the actuator with one of the specified ball valves and the original ball valve accessories.
- The actuator with ball valve is intended exclusively for industrial and commercial use. Do not operate the actuator with ball valve in private or household applications.
- Only operate the actuator with ball valve indoors.
- During operation, transport and storage, maintain the specified ambient conditions.
- Use only a suitable operating medium.
- Operate the actuator with ball valve only in its original condition. Modifications to the actuator and/or ball valve may cause unforeseen hazards and are therefore not permitted.

2.6 Transport and storage

Unpacking

- ► Do not use damaged deliveries and get in touch with your contact at Kieback&Peter.
- ► Dispose of packaging material according to local regulations.

Transport

- ► Maintain the specified ambient temperature of -25..+60 °C and ambient humidity of 5..95 % r.h. non-condensing.
- ► Avoid slipping.

Storage

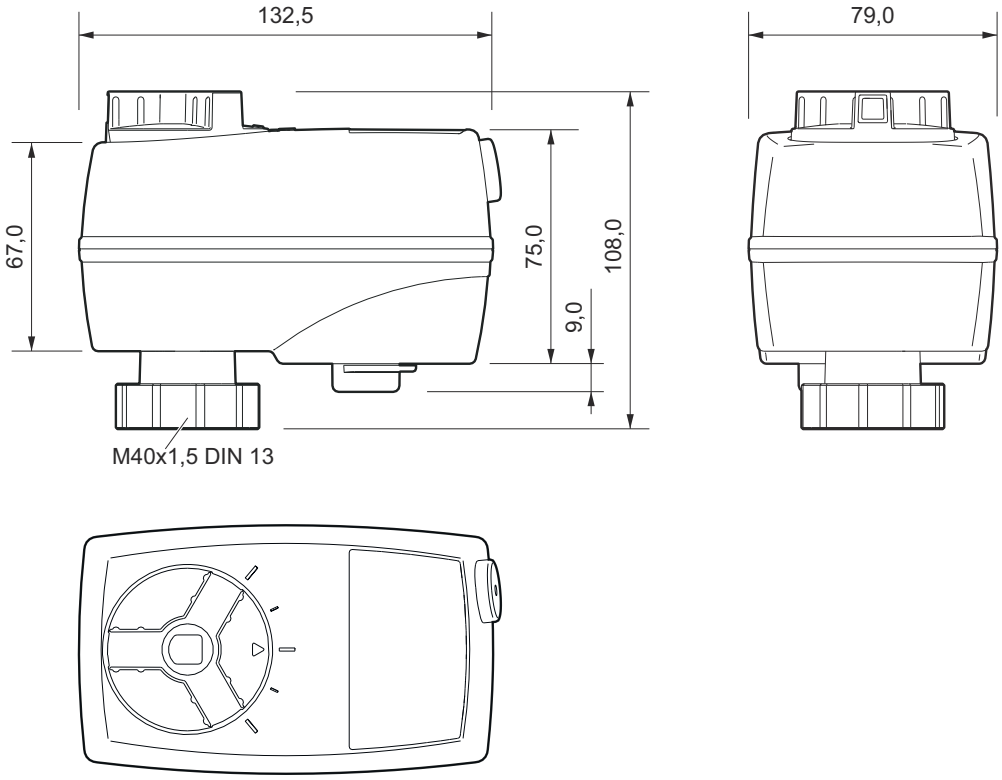
- ► Maintain the specified ambient temperature of -20..+70 °C and ambient humidity of 5..95 % r.h. non-condensing.

3 Technical features and functions

3.1 Technical data

Nominal voltage	24 V AC ±10 %; 50/60 Hz; 24 V DC ±10 %
Dimensioning	8.5 VA (24 V AC); 4.1 W (24 V DC)
Power consumption	Nominal: 6.0 VA (24 V AC); 2.6 W (24 V DC) Sleep mode: 0.7 VA (AC); 0.3 W (DC)
Control	Continuous control 0..10 V DC; < 0.5 mA or 2-point control
Position feedback	0..10 V DC, 5 mA for 0..100 % stroke, only with continuous control
Connection	Built-in connection cable, 1.5 m long; 5 x 0.5 mm^2
Torque	5 Nm
Sound power	Typically <26 dB (A)
Stroke	0..90°
Positioning time	60 s for 90° rotational angle
Position indicator	Mechanical position indicator on the housing and position marker on the handwheel
Manual mode	Only when disconnected from the power supply, with gear unit decoupled
Initialization	Automatic end position detection by initialization after switching on the operating voltage
Housing	Plastic
Adaptation	Square, wrench size 9
Color	Housing: RAL 9010 (white), RAL 7035 (gray) Release button: RAL 2009 (orange)
Maintenance	Maintenance-free
Ambient temperature	0..55 °C during operation
Ambient humidity	5..95 % r.h. during operation
Degree of protection	IP54
Protection class	III
Installation position	Vertically above the ball valve, up to 90° in any direction
Dimensions W x H x D	79 x 108 x 132.5 mm
Weight	Approx. 0.9 kg

3.2 Dimensions

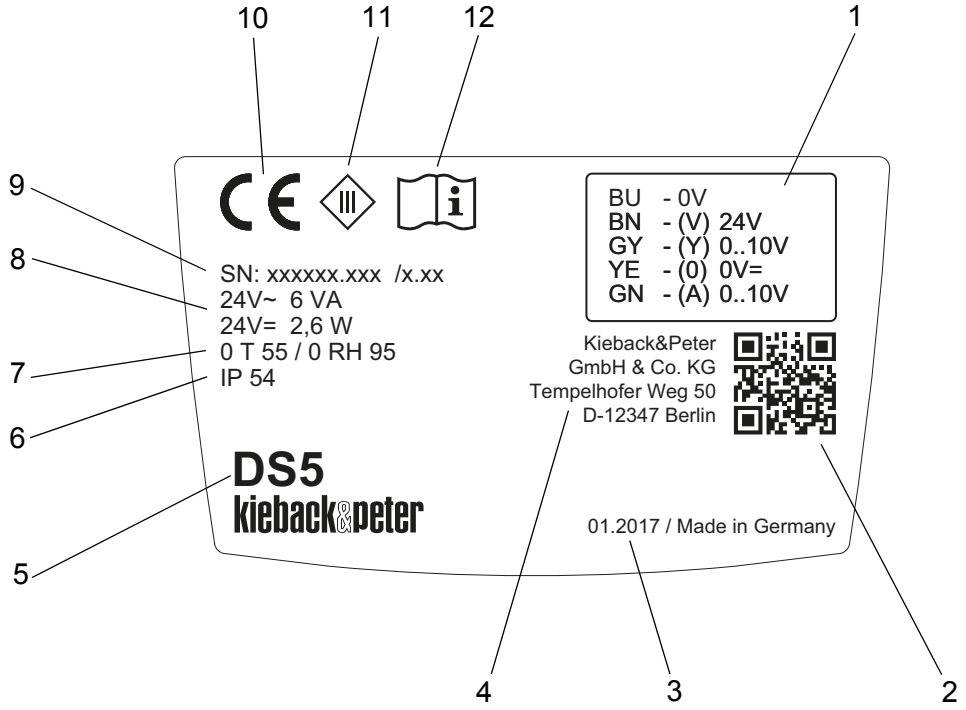


3.3 Scope of delivery

- DS5 actuator
- Operating instructions for actuator for CBV15..20, HW-218234, HW-218240 and HW-218241 6-way control ball valves
- DS5 mounting instructions

3.4 Identification

The actuator can be clearly identified by the type plate.
The type plate includes specifications for the serial number and other important information.
The type plate is mounted on the top of the actuator housing.



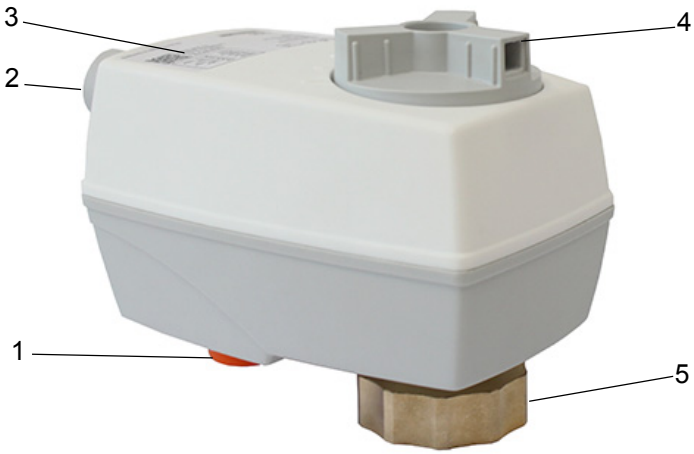
3-1: Actuator type plate

1 Electrical connections
2 Item number and item name as a QR code
3 Year of construction
4 Manufacturer address
5 Item number
6 Degree of protection
7 Permissible ambient temperature and humidity during operation
8 Nominal voltage and power consumption
9 Serial number
10 CE marking
11 Protection class
12 Note on the operating instructions

NOTE
You can find information about the ball valve type on the cast body of the ball valve.

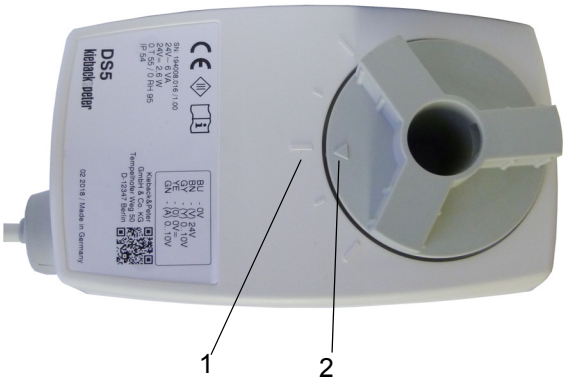
3.5 Structure

Actuator



3-2: Actuator layout

1	Release button	Operating mode setting
2	Connection cable	Electrical connection
3	Type plate	Identifying the actuator
4	Handwheel	Manually adjusting the ball valve position
5	Union nut	Connecting to the ball valve



3-3: Indicators on the actuator

1 Position indicator on the housing
2 Position marker on the handwheel

3.6 Operating modes

You can switch between manual and automatic mode by pressing in or pulling out the release button on the actuator.

Manual mode	In manual mode, you can adjust the ball valve position using the hand-wheel. Manual operation is permitted only when the operating voltage is switched off.
Automatic mode	In automatic mode, the ball valve position is automatically set by the actuator. Automatic operation is performed while the operating voltage is switched on.

3.7 Operating principle

The actuator with ball valve and other components is designed for continuous control in zone post-treatment devices for heating, ventilation and air conditioning systems. Sample applications include fan coil systems, heating and cooling ceilings, etc.

The DS5 actuator with a positioning force of 5 Nm is used to finely adjust the rotational angle of 6-way control ball valves of the types:

- CBV15..20
- HW-218234
- HW-218240
- HW-218241

4 6-way control ball valves for DS5 actuator

4.1 CBV15 and CBV20 6-way control ball valves

6-way control ball valve for heating and cooling systems.

For switching between heating and cooling mode in four-line systems.

Type	DN	PN	Kvs	Connection	Weight (kg)
CBV15	15	16	3.2	G 3/4	1.34
CBV20	20	16	3.2	G 1	1.38

4.1.1 Technical data

Media temperature	0..90 °C
Operating pressure	max. 16 bar
Differential pressure	max. 2 bar
Positioning angle	90°
Housing	Dezincification-resistant brass
Dimensions W x H x D	58.5 x 115.5 x 85 mm
Connection	DN15 G3/4 male thread, male thread with inner cone in accordance with EN 16313
	DN20 G1 male thread, male thread with inner cone in accordance with EN 16313
Medium	Heating and cooling water in accordance with VDI 2035 or ÖNORM 5195 Water/glycol blends with max. 50 % glycol proportion
Kvs value	Without Z208 Kvs insert set: 3.2 Selectable presets with Z208 Kvs insert set: 0.25 / 0.4 / 0.63 / 1.0 / 1.6 / 2.5

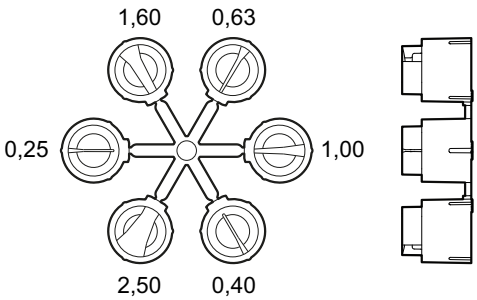
4.1.2 Accessories (not included in delivery)

Z208 Set of Kvs inserts for CBV15..20

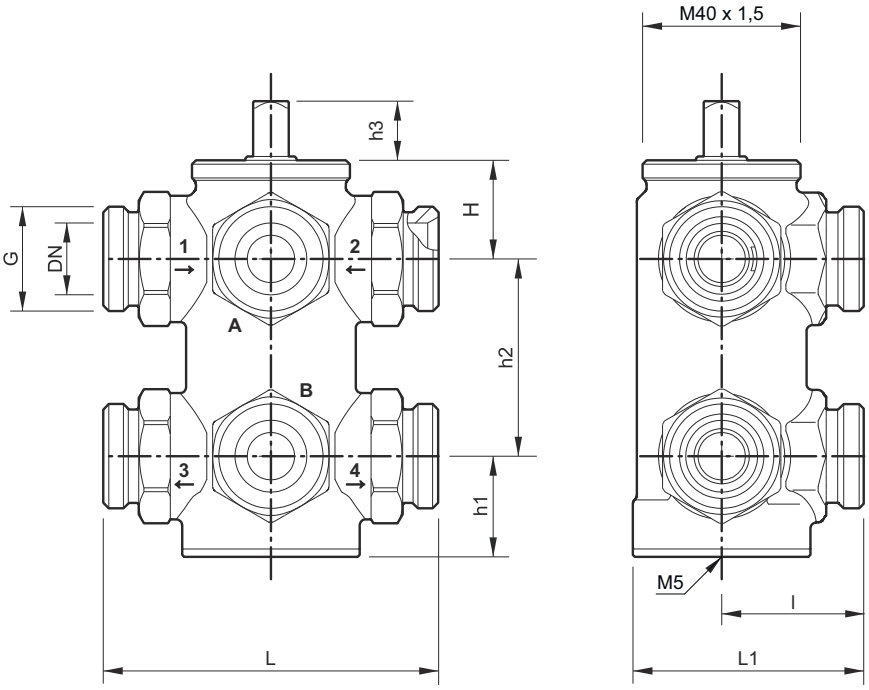
6 selectable presets for the flow range

Kvs 0.25 / 0.4 / 0.63 / 1.0 / 1.6 and 2.5

For further mounting descriptions, see the mounting instructions doc. no. 3.10-09.070-99 (included with the Z208 accessory part) and chapter 4.4; see page 17.

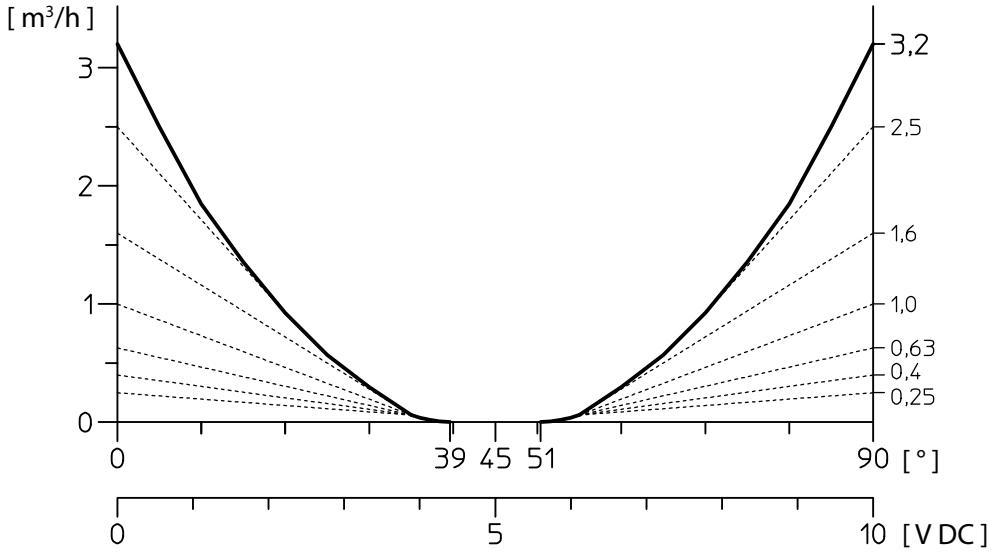


4.1.3 Dimensions



DN	L	L1	l	h1	h2	h3	H	G
15	85.0	58.5	36.0	25.5	50.0	15.0	25.0	3/4"
20	85.0	58.5	36.0	25.5	50.0	15.0	25.0	1"
	Measurements L to H in mm, connection thread in inches							

4.1.4 Characteristic curves



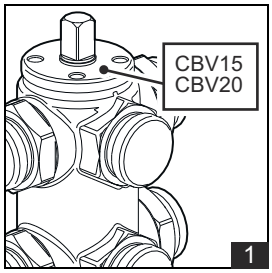
4-1: Characteristic curves of the ball valve without and with Kvs inserts

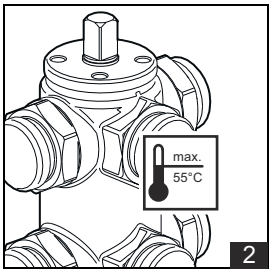
Characteristic curve without Kvs inserts	3.2 m^3/h at 0° (cooling), 3.2 m^3/h at 90° (heating)
Characteristic curve with Kvs inserts	0.25..2.5 m^3/h at 0° (cooling), 0.25..2.5 m^3/h at 90° (heating)

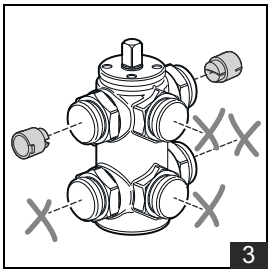
Split-range control ranges

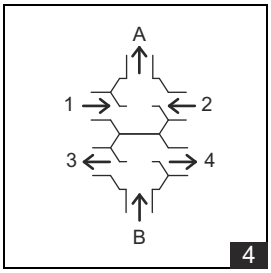
Sequence	Actuating signal	Actuating range
0..100 % cooling	0..4 V DC	0..36°
100 % cooling	0..0.3 V DC	0..3°
Throttling cooling sequence	0.3..4 V DC	3..36°
Shut-off	4..6 V DC	36..54°
Throttling heating sequence	6..9.7 V DC	54..87°
100 % heating	9.7..10 V DC	87..90°
0..100 % heating	6..10 V DC	54..90°

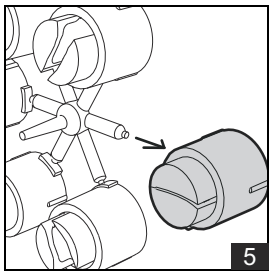
4.1.5 Mounting the Z208 Kvs insert set for CBV15..20

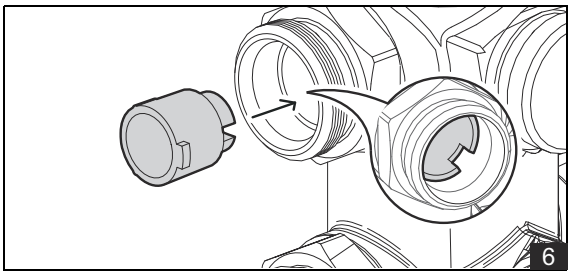


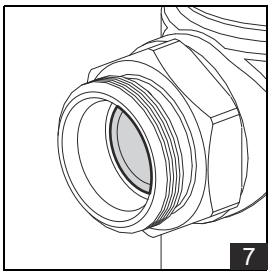


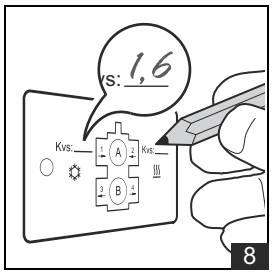


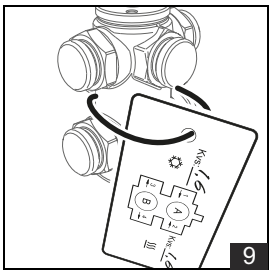








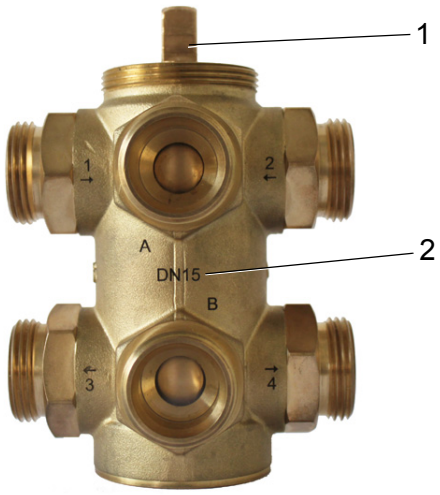




- 1 2 Observe the ambient conditions.
- 3 4 Only install the Kvs insert in the supply line.
- 5 6 7 Insert the required Kvs insert into the corresponding ball valve gate.
- 8 Enter the Kvs values for the “Heating” and “Cooling” supply line on the tag plate.
- 9 The tag plate is attached to the ball valve in a clearly visible position using a cable tie.

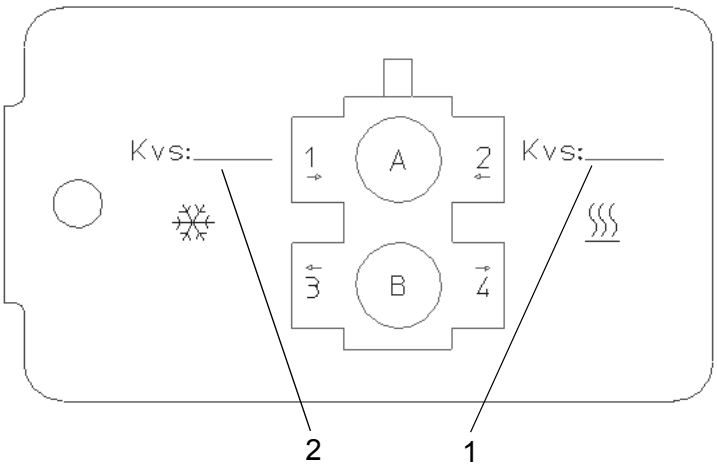
4.1.6 Layout of the 6-way control ball valve

The ball valve is made from dezincification resistant brass and consists of two 3-way ball valves that are connected to each other through a shared rotating axis.



4-2: Ball valve connection diagram

1	Square stem	1	“Cooling” supply
2	Type/nominal width of the ball valve	2	“Heating” supply
A	“Consumer” supply	3	“Cooling” return
B	“Consumer” return	4	“Heating” return



4-3: Tag for Kvs inserts

1 Kvs value on the “Heating” supply
2 Kvs value on the “Cooling” supply

4.2 HW-218234, HW-218240 and HW-218241 6-way control ball valves

6-way control ball valve for heating and cooling systems.
For switching between heating and cooling mode in four-line systems.

Type	DN	PN	Volume flow rate [l/h]	Weight [kg]
HW-218234	15	25	30..830	1.9
HW-218240	15	25	210..1200	1.9
HW-218241	20	25	460..4250	3.4

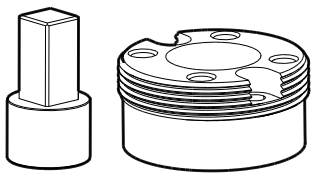
NOTE
Z216 mounting kit required.

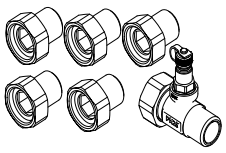
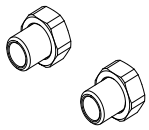
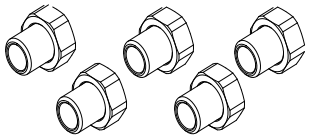
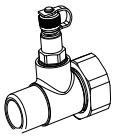
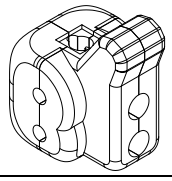
4.2.1 Technical data

Media temperature	0..90 °C
Max. differential pressure	4 bar
Ball valve housing	DZR brass, CW602N
Ball	DZR brass, nickel-plated
Seal	PTFE, glass and carbon fiber reinforced
DP controller	PPS 40 % glass
Spring	Stainless steel
Diaphragm	HNBR
Spring	Stainless steel
O-rings	EPDM
Pressure rating	PN25

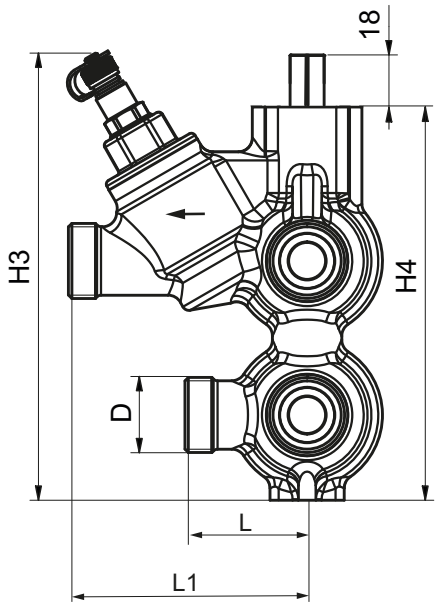
4.2.2 Accessories (not included in delivery)

Z216 Mounting kit for DS5 actuator on HW-218234, HW-218240 or HW-218241 6-way control ball valve
For further mounting descriptions, see the mounting instructions doc. no. 3.10-20.040-99 (included with the Z216 accessory part).



BNR	Designation	Nominal width	Coupling connection for piping system	View
HW-218262	Complete coupling set, 5 couplings and 1 PT coupling with seals	DN15	DN15 male	
HW-218263			DN20 male	
HW-218264		DN20	DN20 male	
HW-218265			DN25 male	
HW-218266	Couplings, DZR brass, CW602N (2 pieces with seals)	DN15	DN15 male	
HW-218267			DN20 male	
HW-218268		DN20	DN20 male	
HW-218269			DN25 male	
HW-218270	Couplings, DZR brass, CW602N (5 pieces with seals)	DN15	DN15 male	
HW-218271	PT coupling	DN15	DN15 male	
HW-218272			DN20 male	
HW-218273		DN20	DN20 male	
HW-218274			DN25 male	
HW-218275	Insulating covers	DN15	-	
HW-218276		DN20	-	

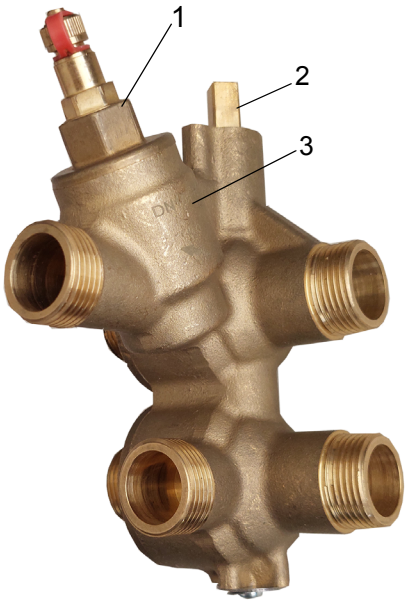
4.2.3 Dimensions



DN	H3	H4	L	L1	D
15	157.0	147.0	43.0	84.0	G 3/4
20	193.0	177.0	50.0	120.0	G 1
	Measurements L to H3 in mm, connection thread D in inches				

4.2.4 Layout of the 6-way control ball valve

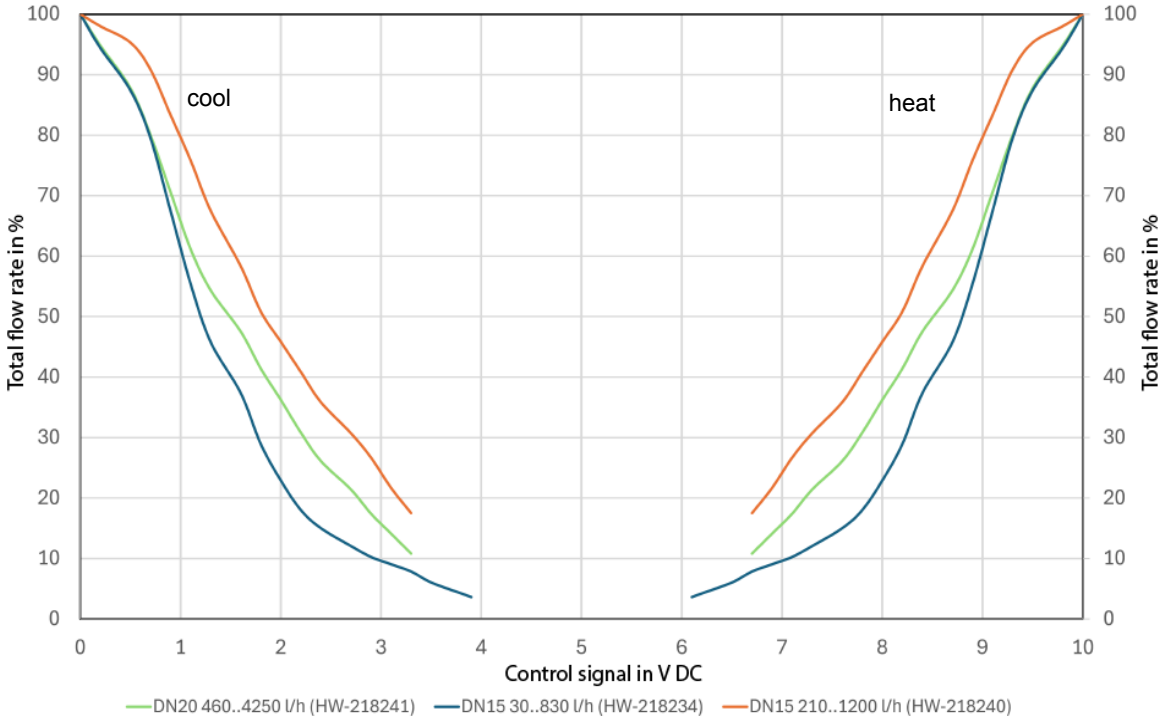
The ball valve is made from dezincification resistant brass and consists of two 3-way ball valves that are connected to each other through a shared rotating axis.



1	Differential pressure insert	1	“Cooling” supply
2	Square stem	2	“Heating” supply
3	Nominal width and pressure rating	3	“Cooling” return
A	“Consumer” supply	4	“Heating” return
B	“Consumer” return		

The removable differential pressure insert (1) enables efficient flushing at the full volume flow rate and simple emptying without having to open and reseal the pipe connections.

4.2.5 Characteristic curves



5 Mounting

5.1 Mounting the ball valve

WARNING

Risk of burns due to hot surfaces!

Persons may receive burns when they make contact with hot surfaces on piping. There is a risk of accidents that may lead to severe injuries.

► Allow the piping to cool down to at least 35 °C before performing installation work.

CAUTION

The valve may only be installed by qualified technicians. In addition to the generally valid installation guidelines, the following points are to be observed:

- The pipeline system and the interior of the fitting must be free of foreign objects. For dirty media, insert a dirt trap in front of the ball valve.
- There must not be any tension between the fitting and the pipeline connection.
- To prevent vortex formation in the ball valve bodies, these should be inserted in a straight length of pipe. The guideline value of 10 x the nominal width is used as the dimension between the ball valve screw connection and the manifold.
- The installation location is to be selected so that the ambient temperature at the actuator remains between 0 °C and +55 °C.
- When carrying out mounting, the permissible max. pressure difference Δp and the specified flow direction must be taken into account.
- The actuator may only be fitted up to a horizontal position above the fitting.
- Observe the direction of flow arrow on the ball valve. A reverse flow direction will impair the control performance!

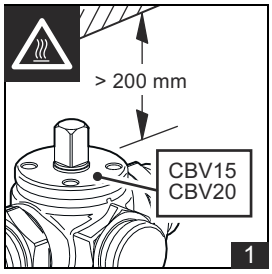
5.2 Actuator mounting

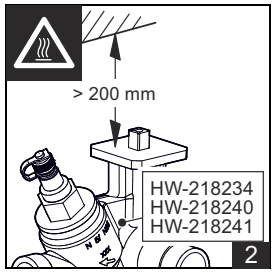
Preparatory tasks

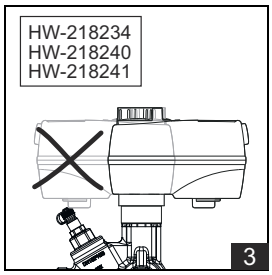
Perform the following preparatory tasks to mount the actuator on a ball valve in an operational system:

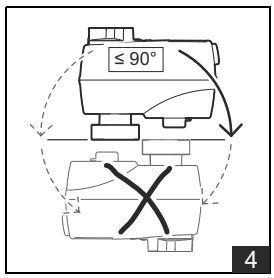
- ► Before starting work, make sure that there is no differential pressure in the ball valve body.
  - ► Close the gate valve and turn off the pumps.
- ► Allow the ball valve and piping to cool down.

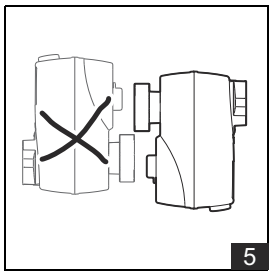
Installation instructions





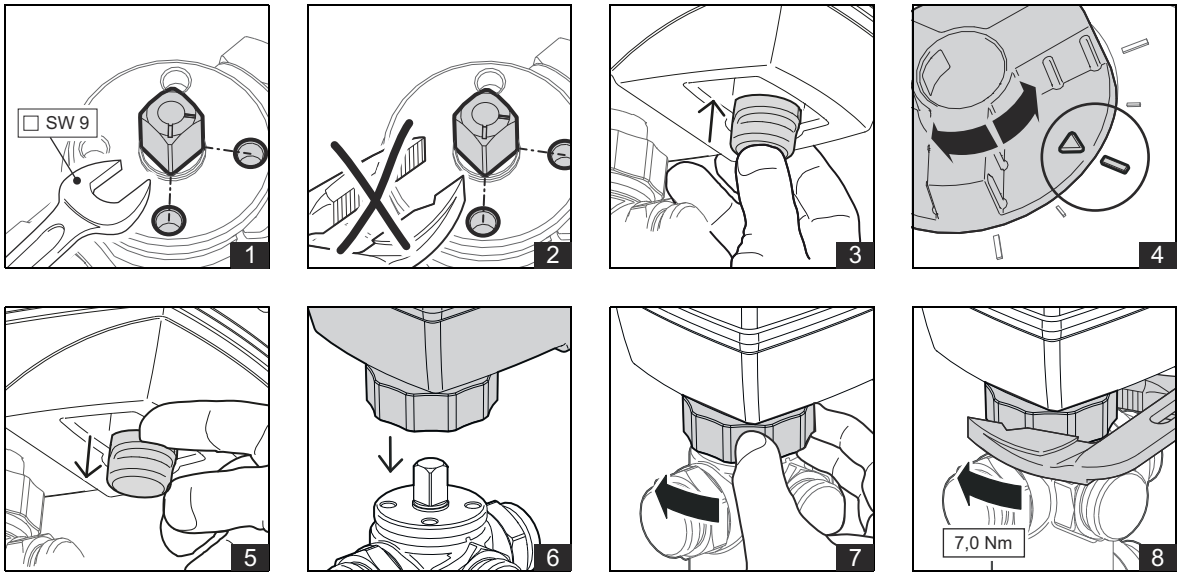






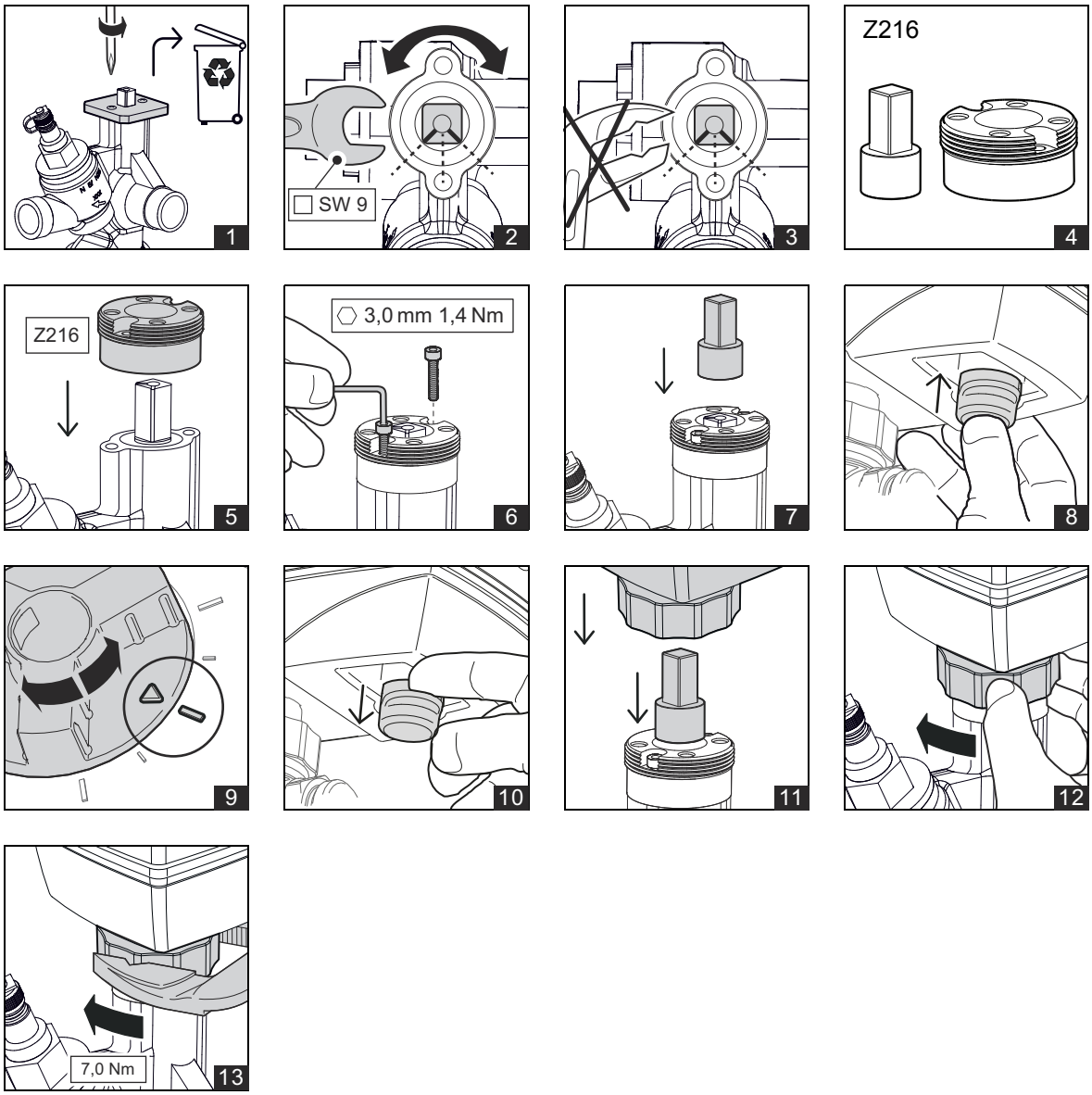
- ► 1 2 After the pipeline has cooled down, you can start to mount the actuator. Mount the ball valve so that there is a clearance of at least 200 mm above it.
- ► 3 to 5 These installation positions are permitted.

5.2.1 Mounting the actuator onto a CBV15..20 ball valve



- 1 Using a size 9 open-end wrench, bring the square stem into the position shown. The position markers on the square stem must match the position markers on the ball valve.
- 2 CAUTION! Do not use a pipe wrench. Ball valve may be damaged.
- 3 Switch to manual mode by pressing the release button.
- 4 Set the handwheel to the center position as shown. The position marker on the handwheel points to the center position marker on the actuator housing.
- 5 Switch to automatic mode by pulling out the release button.
- 6 Position the actuator on the ball valve. Make sure that the positions set on the ball valve and actuator match.
- 7 Attach the actuator and tighten the union nut by hand first.
- 8 Using a suitable tool, tighten the union nut with a tightening torque of 7.0 Nm.

5.2.2 Mounting the actuator onto an HW-218234, HW-218240 or HW-218241 ball valve



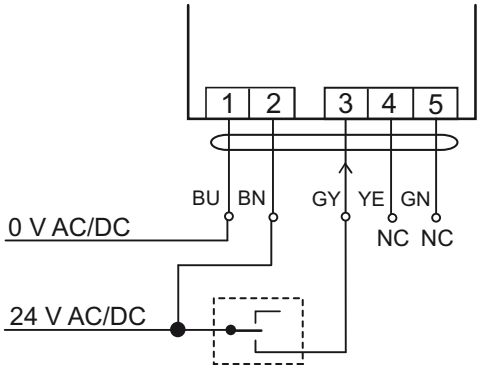
- ► 1 Remove the mounting plate from the ball valve.
- ► 2 Using a size 9 open-end wrench, bring the square stem into the position shown. The position markers on the square stem must match the position markers on the ball valve.
- ► 3 CAUTION! Do not use a pipe wrench. Ball valve may be damaged.
- ► 4 Z216 adapter
- ► 5 6 Mount the Z216 adapter on the ball valve. Tighten the socket head screws with a tightening torque of 1.4 Nm using a 3.0 mm hexagon socket.
- ► 7 Connect the axle extension to the square stem of the ball valve.
- ► 8 Switch to manual mode by pressing the release button.
- ► 9 Set the handwheel to the center position as shown. The position marker on the handwheel points to the center position marker on the actuator housing.
- ► 10 Switch to automatic mode by pulling out the release button.
- ► 11 Position the actuator on the ball valve. Make sure that the positions set on the ball valve and actuator match.
- ► 12 Attach the actuator and tighten the union nut by hand first.
- ► 13 Using a suitable tool, tighten the union nut with a tightening torque of 7.0 Nm.

6 Connecting and commissioning the actuator

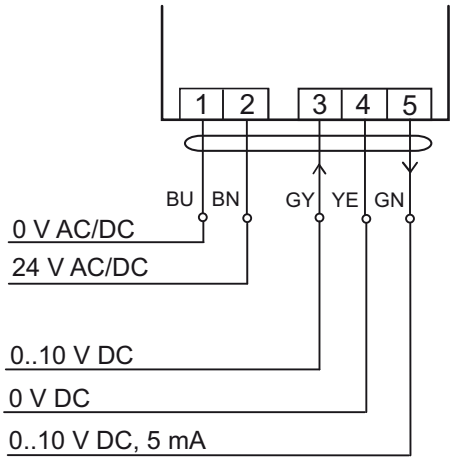
6.1 Electrical installation

DS5 connection

2-point control



Continuous control



6.2 Electrical connection

CAUTION

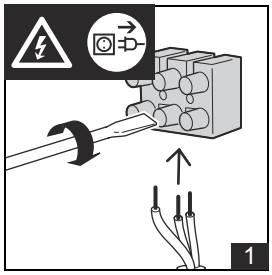
Electrical installation and device connection may only be carried out by qualified technicians, e.g. an electrician. Ensure that this process complies with guidelines from the VDE (Association for Electrical, Electronic & Information Technologies) and local wiring regulations.

NOTE

The minimum permissible cable cross-section is 0.5 mm^2. You may need to consider adjusting the cable cross-section, depending on the length of the cables. Please observe the applicable installation specifications outlined in the applicable VDE guidelines for each respective use case.

CAUTION

The electrical connection for the actuator must be a fixed installation!



► 1 Carry out the electrical connection of the actuator as a fixed installation.
Refer to the circuit diagram.

7 Function

7.1 General

The actuator is used together with a 6-way control ball valve to operate heating and cooling ceilings or fan coils.

Ball valve

The ball valve is operated with a rotating shaft and a rotational angle of up to 90°. The flow rate is controlled by the rotary movement of the ball valve.

To limit the flow for hydraulic balancing in heating and cooling mode, Kvs inserts are installed in the flow lines in the CBV15..20 ball valves.

The Kvs inserts enable volume flow rate limitation and a linear opening characteristic of the ball valve.

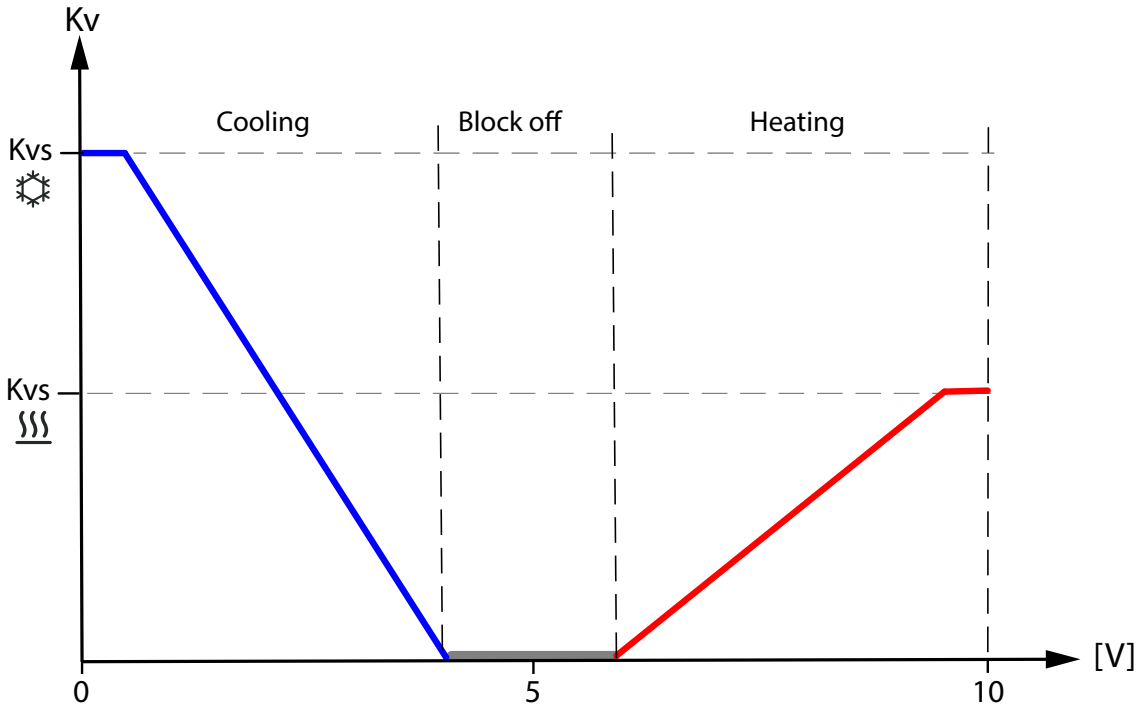
Actuator

The actuator is used to precisely control the ball valve.

The “Manual mode” and “Automatic mode” operating modes can be set by pressing in or pulling out the release button.

The actuator can be operated with “continuous control” or “two-point control”. The control type is automatically detected based on the electrical connection.

Continuous control

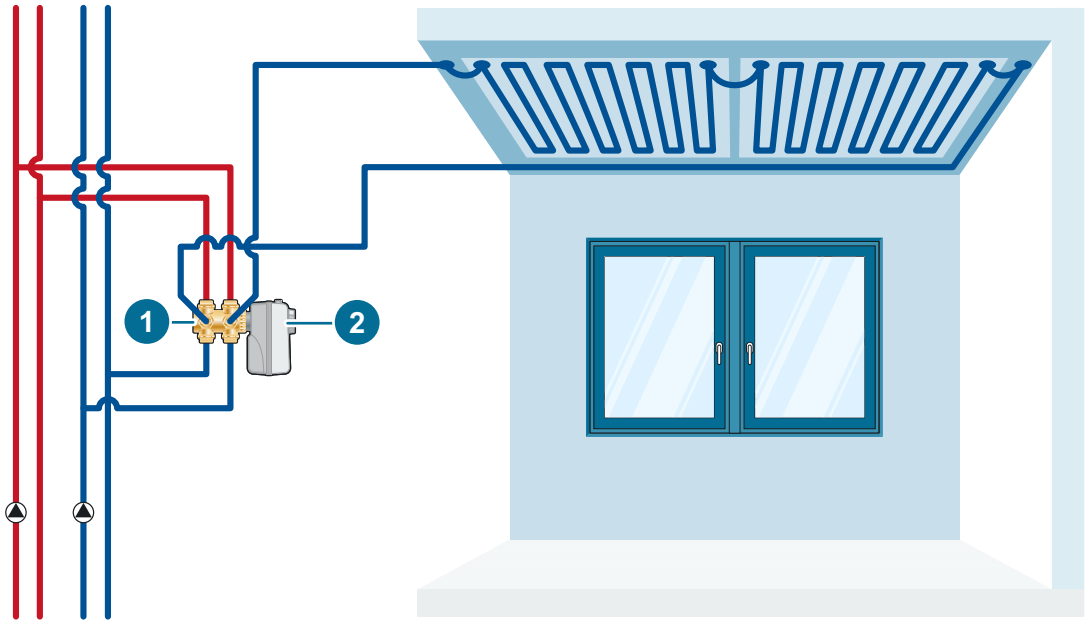


7-1: Operating states with continuous control

During continuous control, the following operating states can be activated:

- “Cooling”
- “Shut-off”
- “Heating”

7.2 Continuous control with 6-way control ball valve



7-2: System example: Actuator and ball valve with continuous control

1 HW-218234, HW-218240 or HW-218241 6-way control ball valve
2 DS5 actuator

With continuous actuator control, the ball valve is used for the following:

- Switching between the heating and cooling sequence
- Shut-off
- For continuous control of the volume flow rate in the heating and cooling sequence

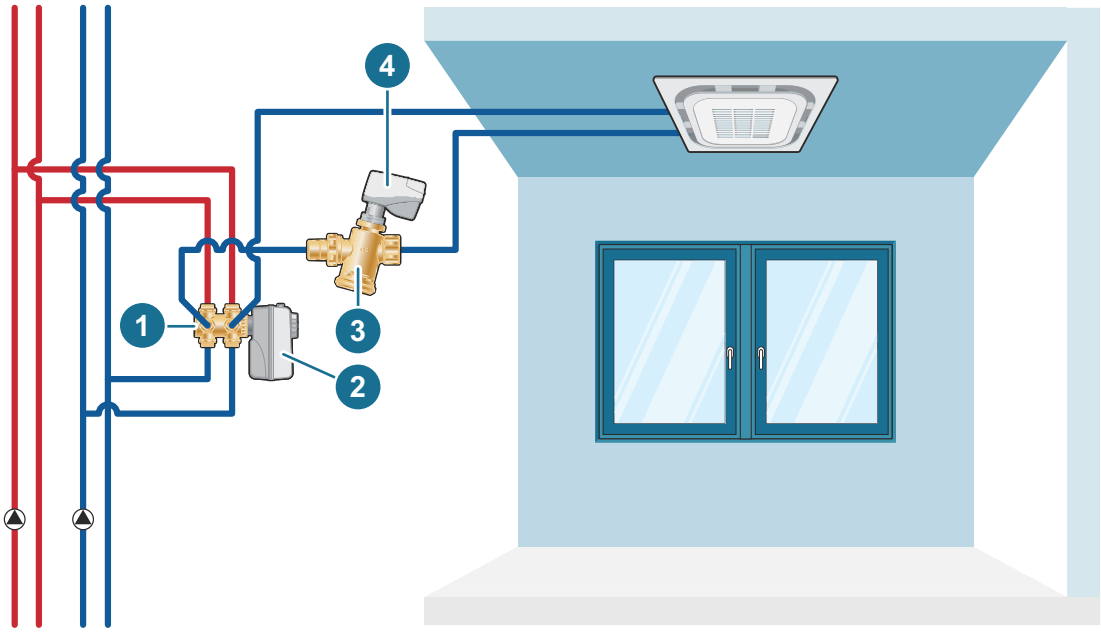
Using the differential pressure-independent 6-way control ball valves enables consistent regulation of the volume flow rate without an additional regulating valve.

The characteristic curves can be found on page 22 .

7.3 Switching the medium and remote control

Two-point control enables the control of the following operating states:

- “Cooling”
- “Heating”



7-3: System example: Actuator and ball valve with two-point control

1 CBV15..20 6-way control ball valves
2 DS5 actuator
3 RBQ15..25 control valves
4 MD15-Q or MD15-BUS-Q actuator

To achieve hydraulic balancing, the ball valve is combined with a differential pressure-independent control valve (RBQ15..25) and an actuator (MD15-Q or MD15, BUS-Q) with continuous control. The ball valve is used to switch between the heating and cooling medium through 2-point actuator control. Continuous control and the shut-off function are realized by combining an RBQ15..25 and MD15-Q or MD15-BUS-Q.

The use of the MD15-BUS-Q enables dynamic hydraulic balancing.

NOTE

Chapter 2.3.2 (on hydraulic balancing for heating/cooling) of the manual “Configuration and Application Examples MD50-BUS and MD15-BUS-XX” describes a sample application with a 6-way control ball valve and DS5.

In this application, the DS5 is connected to the analog output of the MD15-BUS-Q to produce a fully bus-compatible combination.

8 Faults and remedial measures

WARNING

Hot or cold surfaces!

If a hardware or software error occurs, there may be an unexpected positioning movement and the ball valve may open. There is a risk of severe burns or hypothermia if contact is made with hot or cold surfaces at ball valves and pipelines.

- ► Wear protective gloves

Error	Cause	Rectification
Actuator does not regulate	Power outage	► Determine the cause and rectify it if necessary
	Actuator is incorrectly connected	► Check and correct the connection
	Main circuit board defective	► Contact your Kieback&Peter contact person
Actuator runs unstably	Voltage drop because the connection line is too long and/or the cross section is too small	► Measure the operating voltage. Recalculate the electrical connection lines and replace.
	Power supply fluctuations greater than the permitted tolerance	► Improve the electrical system conditions.
Actuator does not move at all or does not move correctly to the ball valve position specified by the input signal	Signal changes too quickly, or poor control behavior	► Check and readjust the control parameters (P component too small).
	Manual adjustment has been actuated	► Set automatic mode ► Force initialization run; to do so, switch the operating voltage off and on again.
Ball valve does not close or open	Ball valve jammed	► Ensure that the ball valve can move freely and replace it if required; see page 34.
	Differential pressure too high	► Set the differential pressure correctly.
	Actuator and ball valve not correctly aligned prior to mounting	► Check alignment of ball valve and actuator. ► If applicable, remove actuator; see page 33. ► Remount actuator; see page 23.

9 Maintenance

Maintenance

The actuator does not require any maintenance.

Cleaning

The actuator does not require cleaning.

NOTE

A regular inspection of the system including functional testing of the actuator is recommended.

10 Repair

At the mounting location, the ball valve/actuator combination can be repaired only by replacing the ball valve or actuator. Contact your Kieback&Peter contact person.

11 Decommissioning, Removal and Disposal

11.1 Decommissioning and disassembling the actuator

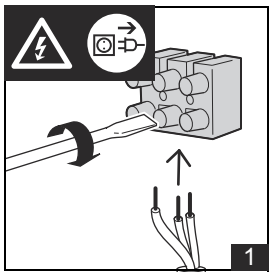
WARNING

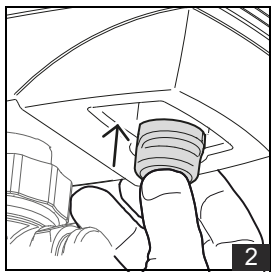
Hot or cold surfaces!

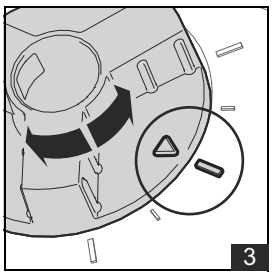
If a hardware or software error occurs, there may be an unexpected positioning movement and the ball valve may open. There is a risk of severe burns or hypothermia if contact is made with hot or cold surfaces at ball valves and pipelines.

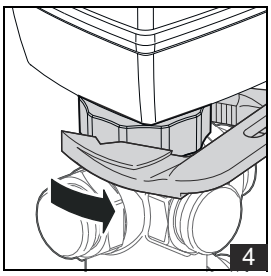
- ► Wear protective gloves

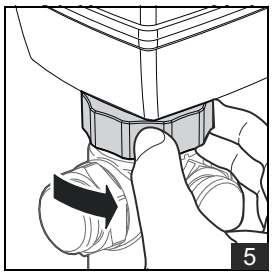
- Before beginning the disassembly work, make sure that there is no differential pressure in the ball valve body. If necessary, close the gate valve and turn off pumps. After the pipeline has cooled off, you can begin to dismount the actuator.

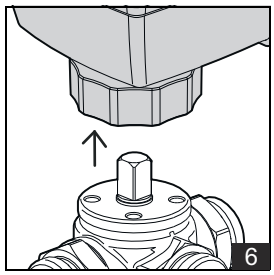


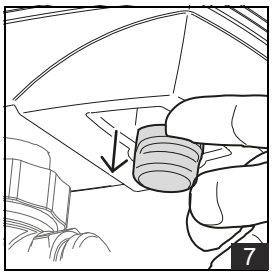












- ► 1 Disconnect the actuator from power.
- ► 2 Press the release button.
- ► 3 Set the handwheel to the center valve position as shown. The position marker on the handwheel points to the center position marker on the housing.
- ► 4 Loosen the union nut with an appropriate tool.
- ► 5 Unscrew the union nut.
- ► 6 Remove the actuator from the ball valve.
- ► 7 Pull out the release button.

11.2 Disassembling the ball valve

- ► There must not be any differential pressure on the ball valve body. Close the shut-off valve and turn off the pumps.
- ► Undo the screw connections between the piping and the valve connections.
- ► Remove the ball valve from the piping.

11.3 Notes on disposal

In accordance with the applicable laws and directives of the European Union countries, the product should not be disposed of with household waste. This ensures environmental protection and sustainable recycling or raw materials. Commercial users should contact their supplier and observe the conditions of the purchase agreement. This device may not be disposed of together with other commercial waste.

12 Contact persons

Orders and questions

If you want to submit an order, have questions or require technical information, please contact your Kieback&Peter contact person.

Repair service

If your device has a defect, contact your Kieback&Peter contact person to clarify how to proceed.

13 Declaration of conformity

EN

Kieback&Peter

CE

EU-DECLARATION OF CONFORMITY

Kieback&Peter GmbH & Co. KG
Tempelhofer Weg 50
12347 Berlin / Germany

Authorized Representative for Documentation:
Lydia Bruchno / Eva Franke

declares in sole responsibility that the designated product

Actuator

DS5

in combination with the **valves** of the series

CBV15, CBV20, HW-218240, HW-218234, HW-218241

to which this declaration refers, corresponds to the requirements which are stipulated in the following European directives:

- **2006/42/EG** Directive Machinery
- **2014/35/EU** Low Voltage Directive
- **2014/30/EU** electromagnetic compatibility
- **2011/65/EU** Restriction of certain Hazardous Substances

Harmonised standards applied:

DIN EN 60730-2-14: 2023-03
DIN EN ISO 12100: 2011-03

Signed for and on behalf of:

Berlin,
17/08/26

(ppa. Philipp Menzel)
Managing Director
Product & Solutionmanagement

(ppa. Rainer Mahling)
Managing Director
Solution & Support Center

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