UDV

Version 1.1 EN

¾" Universal 3-way valve

Installation instructions

en

TECHNISCHE ALTERNATIVE

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Safety requirements

All installation and wiring work on the 3-way valve may only be carried out in a zero volt state.

The opening, connection and commissioning of the device may only be carried out by competent personnel. While doing so, they must observe all local safety requirements.

This device is state of the art and meets all necessary safety regulations. It may only be used in accordance with the technical data, safety requirements and regulations listed below. When using the device, also observe all statutory and safety regulations apposite to the particular use.

- ► The device may only be installed in a dry interior room.
- ► It must be possible to isolate the 3-way valve from the mains using an omnipolar isolating facility.
- ► Before starting installation or wiring work, the 3-way valve must be completely isolated from the mains and protected against reconnection.
- ► Safe operation is no longer possible if the 3-way valve exhibits visual damage, no longer functions or has been stored for lengthy periods under unsuitable conditions. If this is the case, disable the 3-way valve and secure against unintentional use.

Maintenance

The device does not require any maintenance and cannot be adjusted.

The design characteristics of the device must not be changed during repairs. Spare parts must correspond to the original spare parts and must be used in accordance with the build version.

Function

The UDV 3-way valve is a ball valve suitable for temperatures up to 100 °C with T-bore and 3/4" connections. The valve position is indicated on the casing.

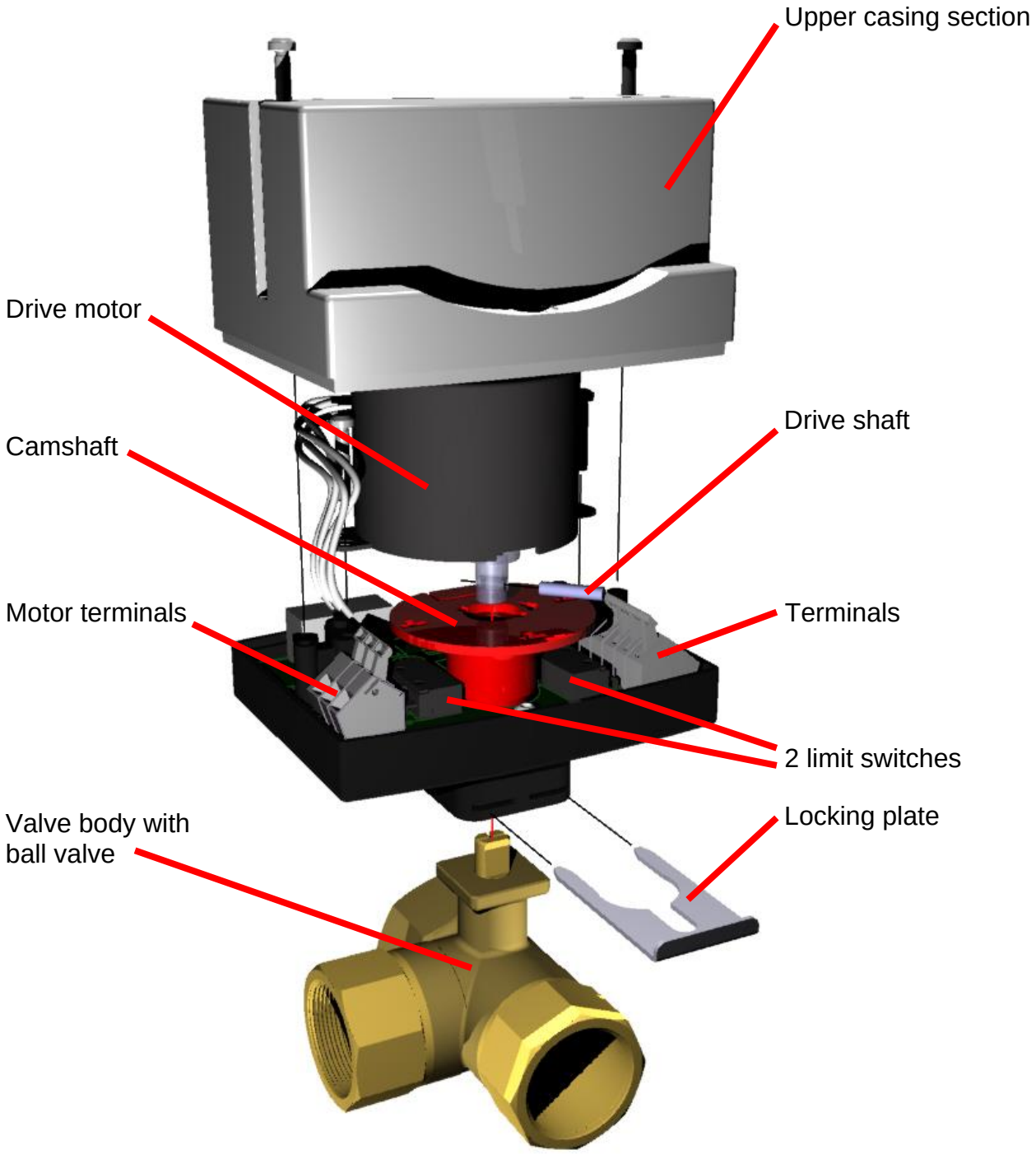
Internal spring terminals permit free wiring in place of a fixed connection cable.

The valve may be switched both with relay changeover contact (3-point control signal), or with continuous phase and N/O relay (2-point control signal, virtual return spring).

Internal coding and random positioning of the motor allows free selection of the hydraulic paths (left-right, straight-left and straight-right).

All materials in the hydraulic area are approved for use with drinking water. However, it is not DVGW-certified as a unit.

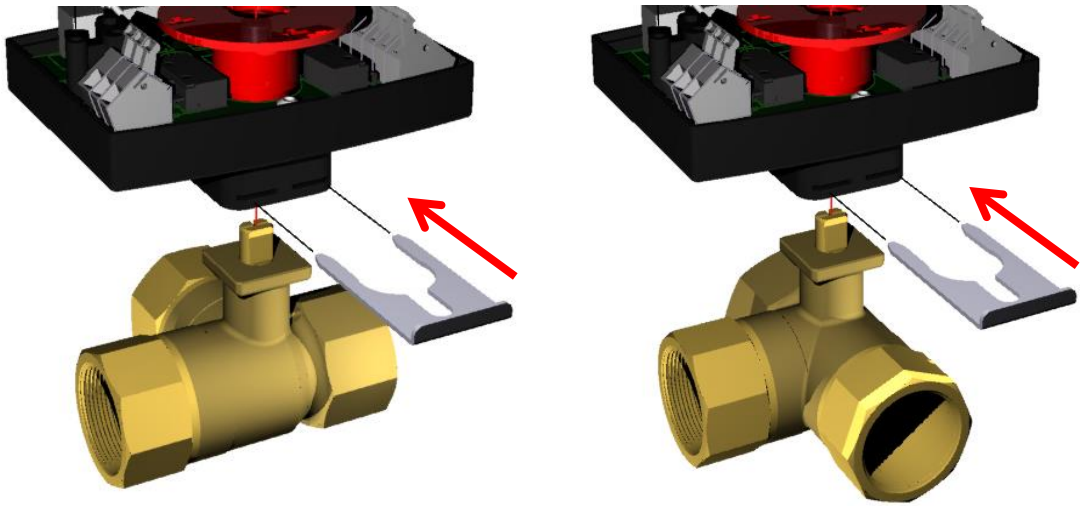
Structure and assembly of the 3-way valve



Valve:drive unit connection

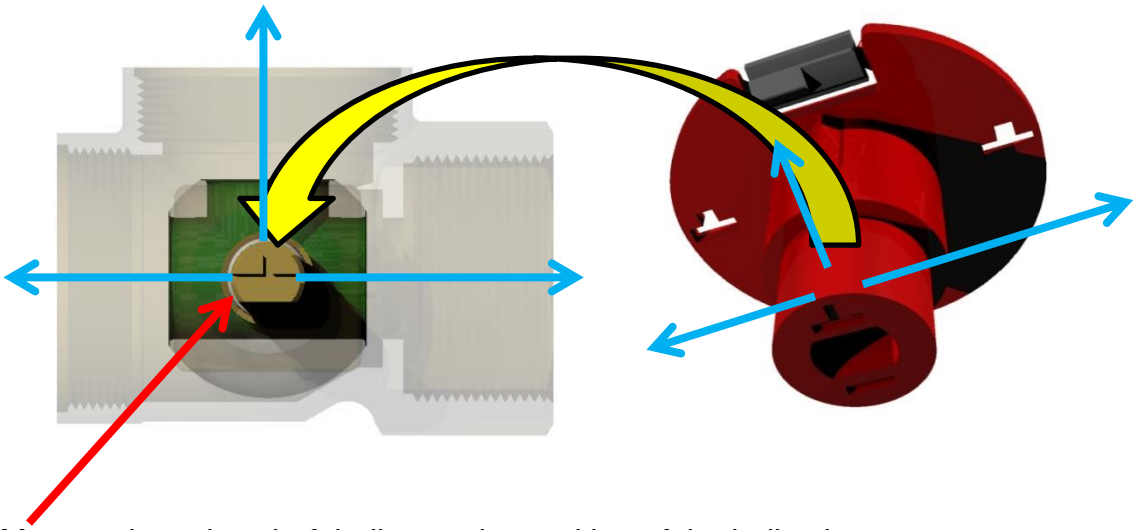
Depending on requirements, the valve body can be connected to the drive in 4 different positions. To secure this connection, the locking plate must be inserted into the slot provided in the upper casing section.

Examples:



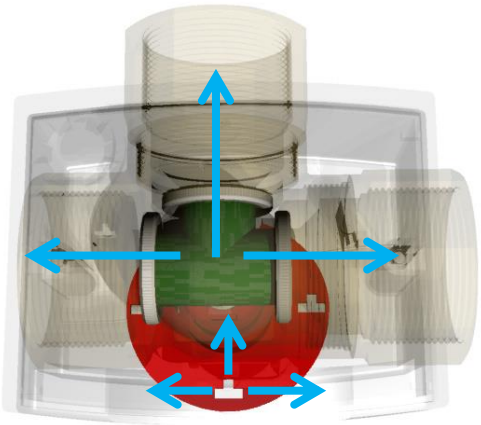
Camshaft

When positioning the camshaft on the valve shaft, ensure that the marking on the **valve shaft** coincides with the marking at the lower end of the **camshaft**:



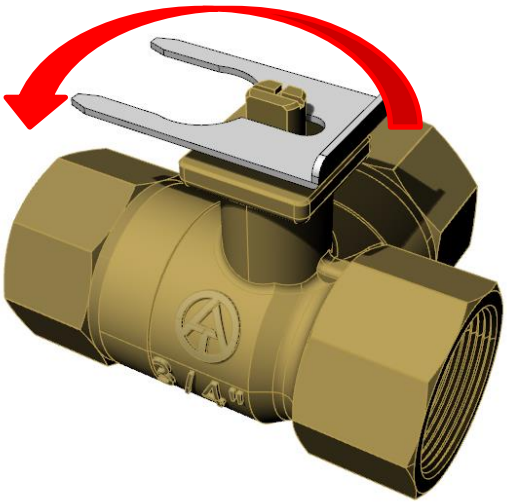
The **marking** on the valve shaft indicates the position of the ball valve.

If the camshaft is positioned correctly, then the indicator on the camshaft disc coincides with the position of the ball valve:



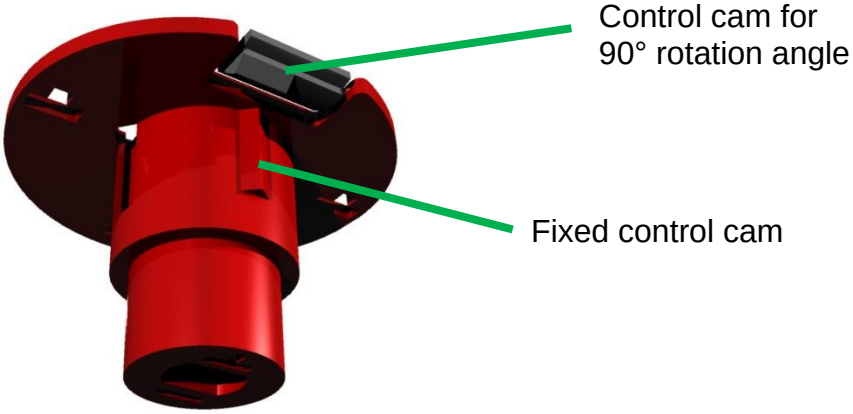
Use of locking plate as a lever

The valve shaft can be brought into the correct position with the help of the locking plate. If pliers are used, they could damage the valve shaft.

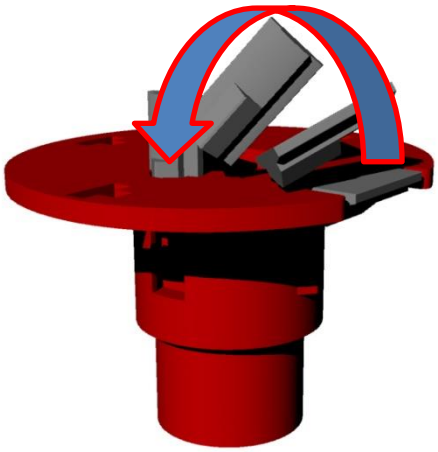


Selecting the rotation angle (90° or 180°)

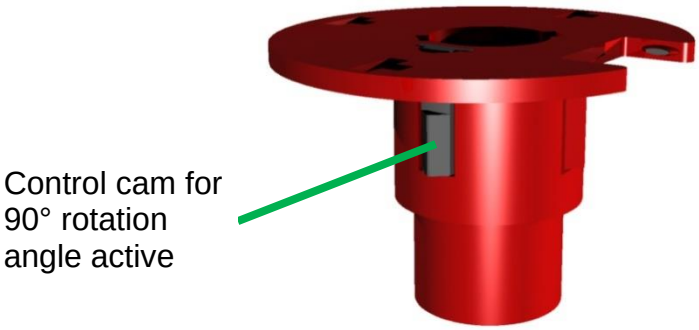
The factory setting for the ball valve rotation angle is **180°**. This rotation angle is determined by the fixed control cam located on the shaft. In its end positions, this control cam actuates a limit switch, thereby switching off the drive motor.



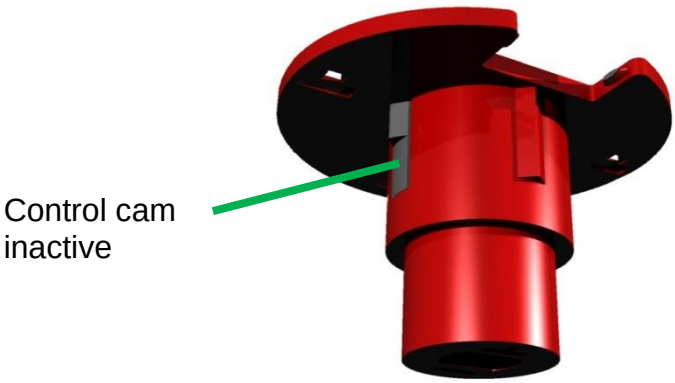
If a switching angle of 90° is required, then a second control cam must be inserted into the shaft. To do this, break the control cam (coloured grey in the drawings) out of the disc and slide it into the groove provided for this purpose.



View of the correctly inserted 90° control cam

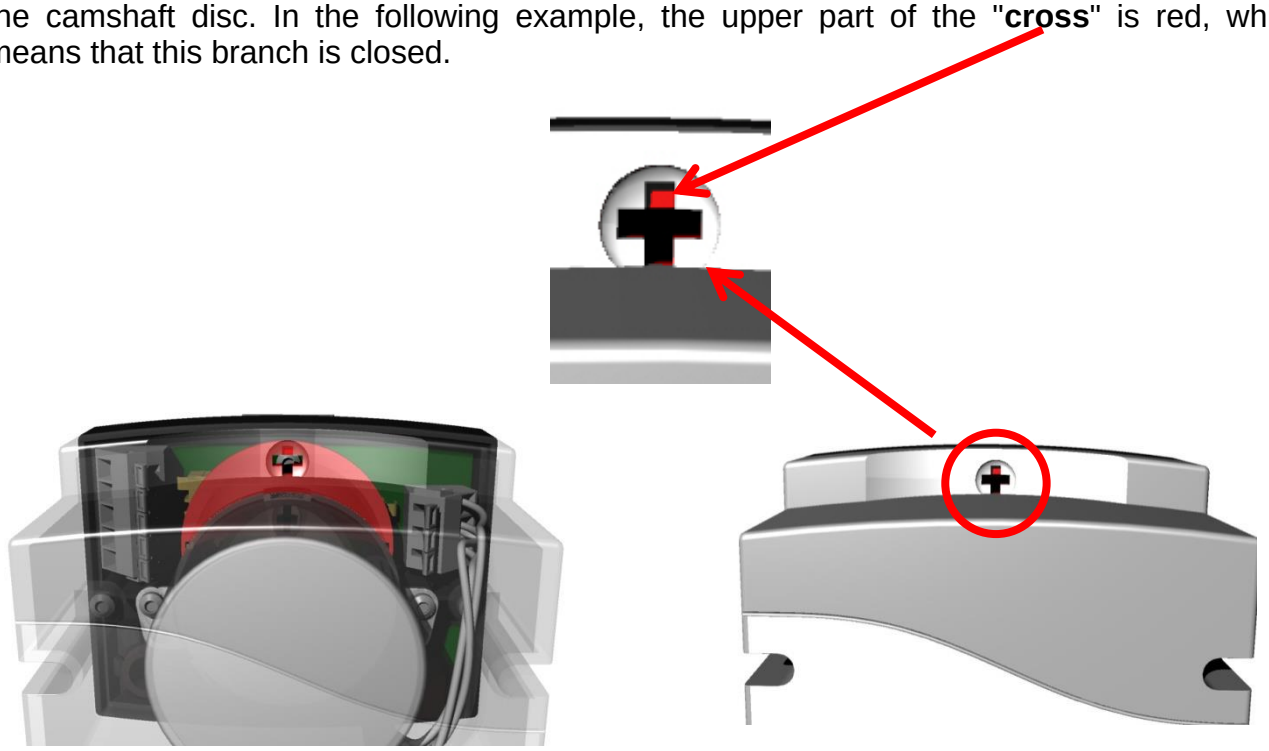


If the control cam has been broken out, but is no longer required, then it can be twisted by 180° and inserted into the groove, so that it can no longer actuate the limit switch:

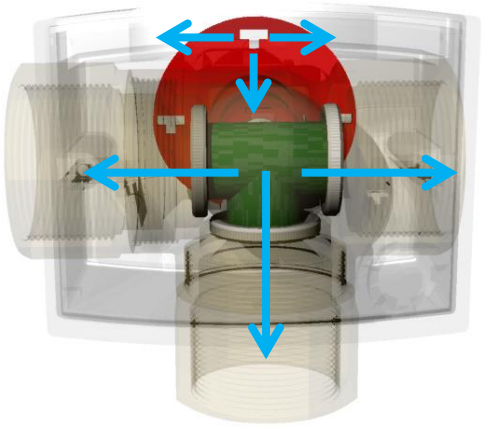


Control cam valve position indicator

When the upper casing section is attached, the current position of the valve is indicated by the camshaft disc. In the following example, the upper part of the "**cross**" is red, which means that this branch is closed.

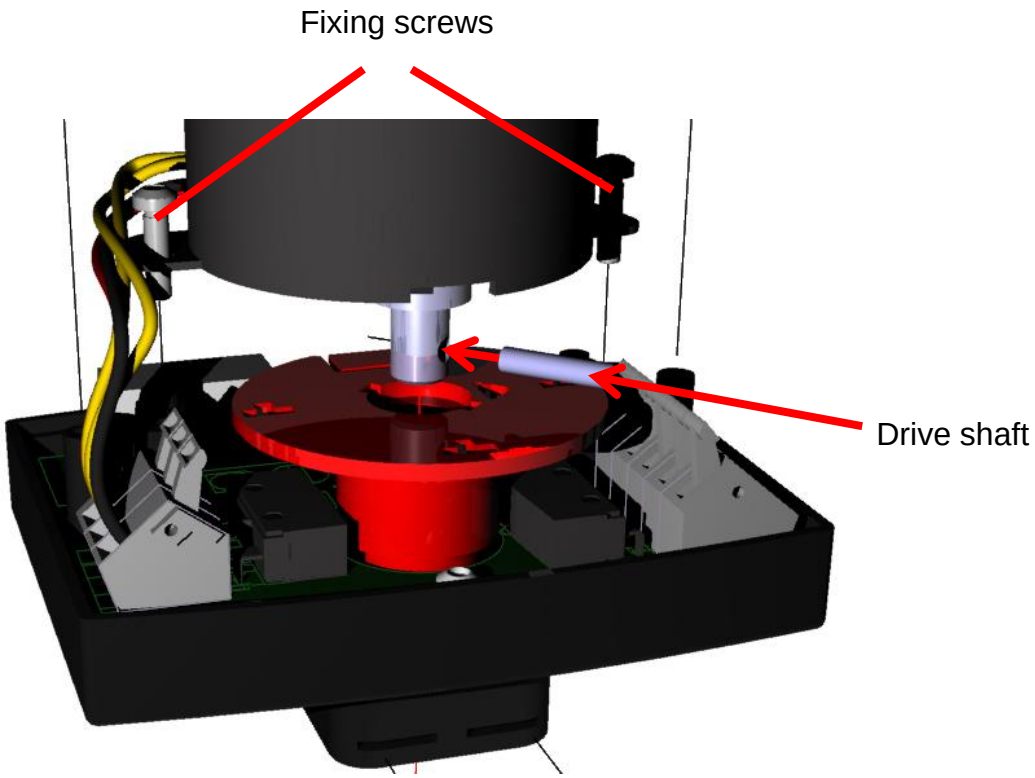


The position of the spherical head is therefore:



Mounting the drive motor

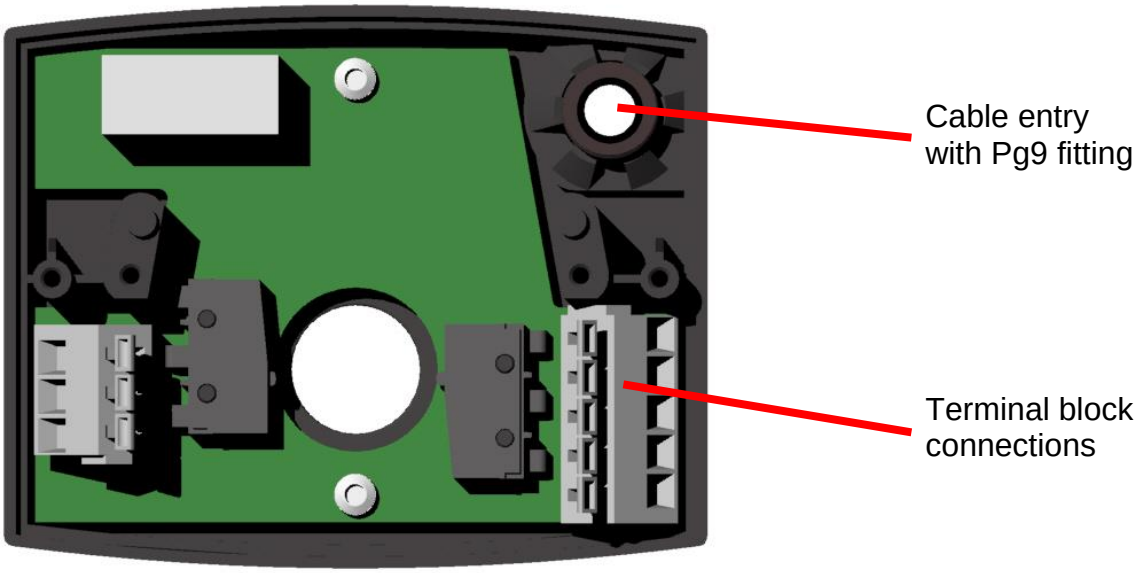
To connect the drive motor to the camshaft, insert the drive shaft into the motor shaft. Then secure the motor to the lower casing section with 2 fixing screws.



The motor is connected to the motor terminals at the factory. These connections must not be interchanged.

Electrical connection

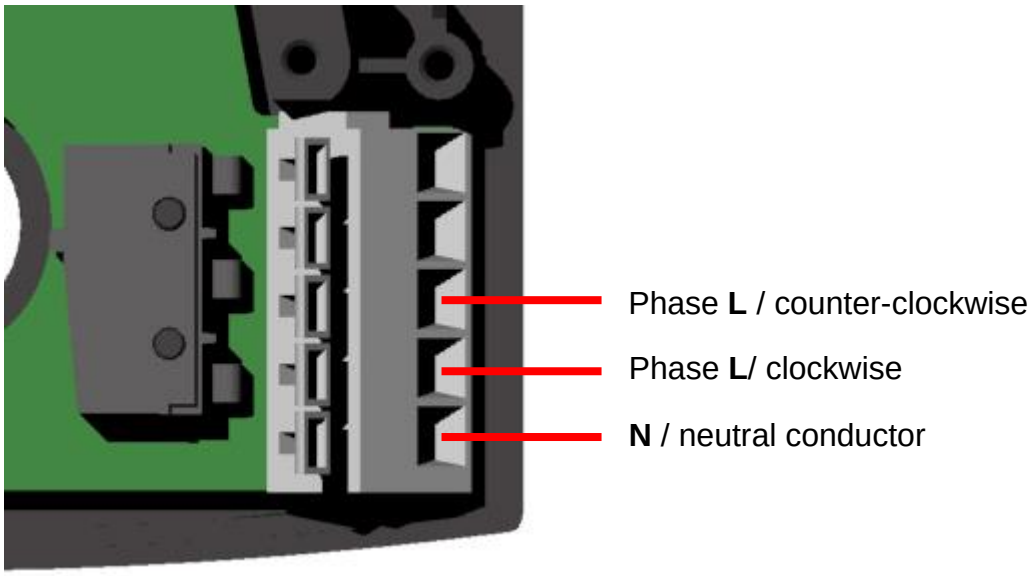
The valve may be switched both with relay changeover contact (3-point control signal) or with continuous phase and N/O relay (2-point control signal, virtual return spring).



3-point control signal

In this case, one core is responsible for clockwise rotation and another for anti-clockwise rotation. Consequently, 3 wires are required for switching the valve.

No earth connection is required, because the drive unit is safety insulated.

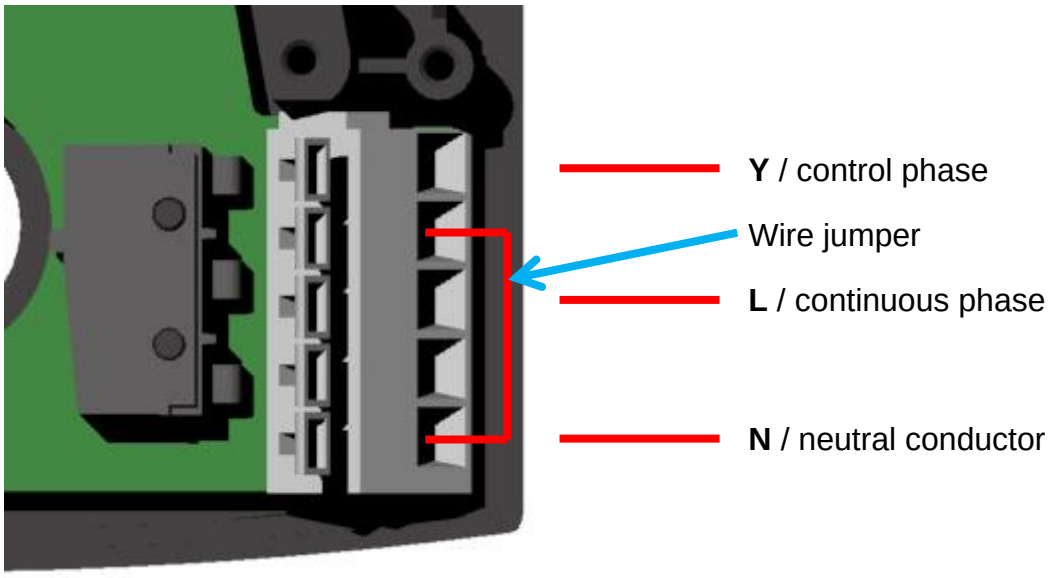


2-point control signal

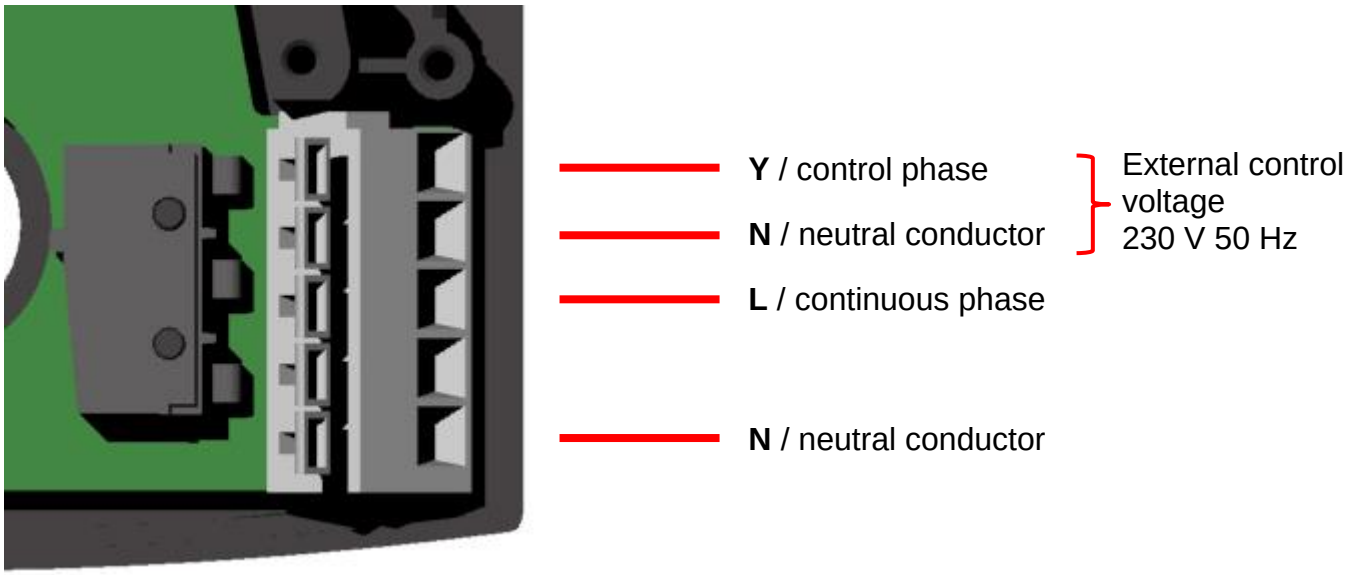
A **continuous voltage** is required at the valve for operation with a 2-point control signal. This causes the motor to be rotated **clockwise** into its end position.

The **Y control phase** uses an integrated relay to switch the rotational direction to **anti-clockwise** and the motor rotates to its other end position. If this **Y control phase** is switched off again, the motor rotates **clockwise** back to the other end position ("virtual return spring"). Normally, a wire jumper needs to be established from above across the neutral connection and the second terminal.

No earth connection is required, because the drive unit is safety insulated.

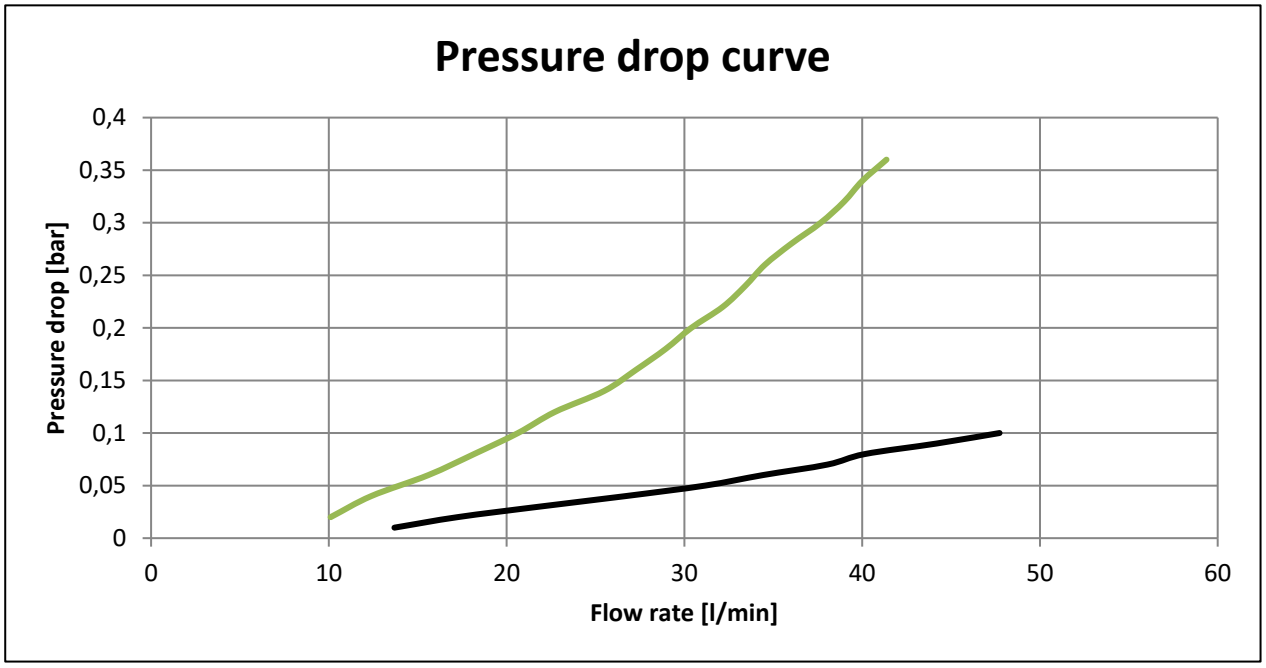


An **external voltage** may also be used for switching, if it cannot be ensured that the **Y** control phase has the same phase angle (L1, L2, L3) as the continuous phase or originates from the same electrical circuit:



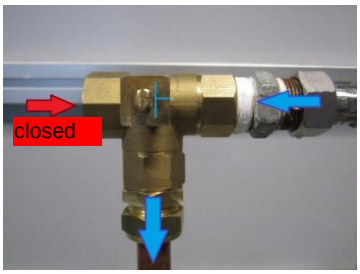
Technical data

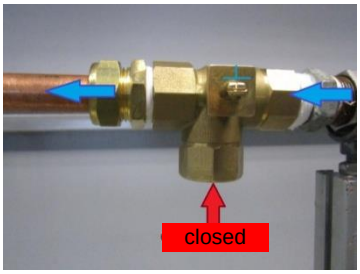
Rated voltage	230 V 50 Hz +/-10 %
Power consumption	5 W moving, 0 W in position, 0.1 W / 1.5 VA internal relay active
IP rating / protection class	IP 20 / protection class II - safety insulated
Nominal operating mode	S2 (short-term operation)
Max. ambient temperature	0 °C to +45 °C
Medium temperature	0 °C to +100 °C
Max. operating pressure	6 bar
Runtime 90° / 180°	17 s / 34 s
Connection thread	3/4" ISO228
Valve body material	Brass



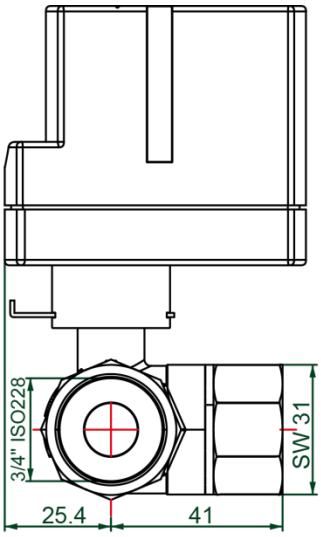
Flow rate 90°

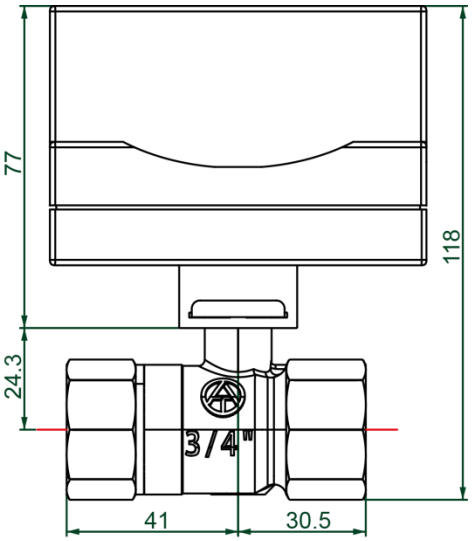
Flow rate 180°

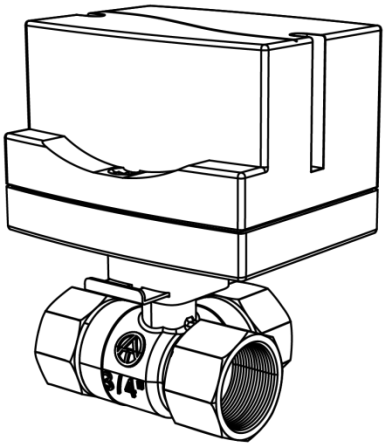


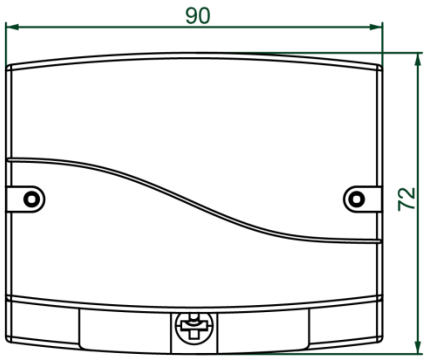


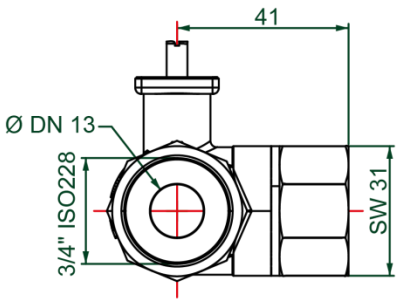
Dimensions

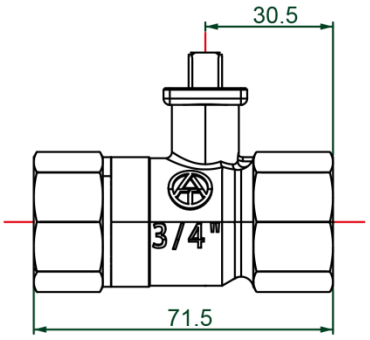

3/4" ISO228
SW 31
25.4
41

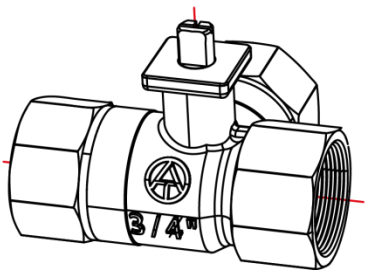

77
118
24.3
3/4"
41
30.5

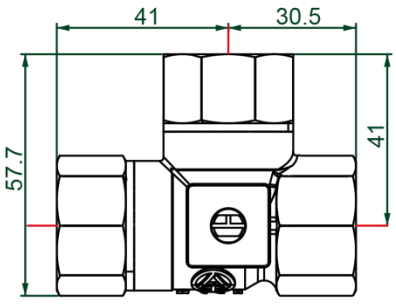

3/4"


90
72


41
Ø DN 13
3/4" ISO228
SW 31


30.5
3/4"
71.5


3/4"


41
30.5
57.7
41

EU Declaration of Conformity

Document number/date:	TA17025 / 02/02/2017
Manufacturer:	Technische Alternative RT GmbH
Address:	A-3872 Amaliendorf, Langestrasse 124

The manufacturer bears sole responsibility for issuing this Declaration of Conformity.

Product designation:	UDV
Brand names:	Technische Alternative GmbH.
Product description:	3-way valve with drive unit

The item described above complies with the following directives:

2014/35/EU	Low Voltage Directive
2014/30/EU	Electromagnetic compatibility
2011/65/EU	RoHS directive on restricting the use of certain hazardous substances
2014/68/EU	Pressure Equipment Directive

The following harmonised standards have been applied:

EN 60730-1:2011	Automatic electrical controls for domestic and similar applications – Part 1: General requirements
EN 60730-2-14:1997 + A1:2001 + A11:2005 + A2:2008	Automatic electrical controllers for domestic and similar applications – Part 2-14: Particular requirements for electric actuators
EN 61000-6-3: 2007 +A1: 2011 + AC2012	Electromagnetic compatibility (EMC) – Part 6-3: Generic standards – Emission standard for residential, commercial and light-industrial environments
EN 61000-6-2: 2005 + AC2005	Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Noise immunity for industrial environments
EN 50581: 2012	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Attachment of CE label: On packaging, operating instructions and type plate

CE

Issued by: Technische Alternative RT GmbH
A-3872 Amaliendorf, Langestrasse 124

Authorised signature

Dipl.-Ing. Andreas Schneider, Managing Director
02/02/2017

This declaration certifies conformity with the listed directives, but does not guarantee any properties. The safety instructions in the product documents supplied must be observed.

Guarantee conditions

Note: The following guarantee conditions do not limit the statutory right to a warranty, but rather expand your consumer rights.

1. Technische Alternative RT GmbH provides a two-year guarantee from the date of purchase to the end user for all devices and parts it sells. Defects must be reported immediately upon detection and within the guarantee period. Technical support can supply the correct solution for almost every known problem. In this respect, contacting us immediately will help to avoid unnecessary expense and effort in troubleshooting.

2. The guarantee includes free repair (but not the cost of on-site fault finding, removal, refitting and shipping) due to operational and material defects which impair the function. In the event that a repair is uneconomical in the opinion of Technische Alternative for reasons of cost, the goods will be replaced.

3. Excluded is damage resulting from the effects of a voltage surge or abnormal ambient conditions. Likewise, no liability can be accepted if the device defect is due to: transport damage for which we are not responsible, incorrect assembly and installation, incorrect use, failure to observe the operating and installation instructions or incorrect maintenance.

4. The guarantee will become void if repairs or actions are carried out by people who are not authorised to perform them or have not been so authorised by us, or if our devices are operated with spare parts, auxiliary parts or accessories that are not considered to be original parts.

5. Faulty parts must be returned to our factory with a copy of the proof of purchase and a precise fault description. Processing is accelerated if an RMA number is requested via our homepage www.ta.co.at.The defect must be clarified with our technical support beforehand.

6. Services provided under guarantee result neither in an extension of the guarantee period nor in a commencement of a new guarantee period. The guarantee period for fitted parts ends with the guarantee period of the whole device.

7. Further or other claims, especially those for compensation for damage other than to the device itself, insofar as such liability is not required by statute, are excluded.

Legal notice

Technische Alternative RT GmbH

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