

## 3-WAY SWITCHING VALVE

for domestic hot water charging

USV 1" AG

USV 5/4" AG

USV 6/4" IG



## Intended use

The unit may be used only for its designed purpose. This means:

- for switching from heating to domestic hot water charging.

## Exclusion of liability

The manufacturer is not liable for losses resulting from any use of the unit for which it is not intended.

The manufacturer's liability also lapses

- if work is performed on the unit and its components in a manner that does not comply with the terms of this operating manual;
- if work is performed on the unit and its components in an improper manner;
- if work is performed on the unit that is not described in this operating manual, and this work was not expressly approved in writing by the manufacturer;
- if the unit or components in the unit are modified, redesigned or removed without the express written permission of the manufacturer.

## Safety

The unit is safe to operate for its intended use. The design and manufacture of the unit conform to current state of the art standards, all relevant DIN/VDE (German Association for Electrical, Electronic & Information Technologies) regulations and all relevant safety regulations.

Every person who performs work on the unit must have read and understood the operating manual prior to starting any work. This also applies if the respective person has already worked with such a unit or a similar unit or has been trained by the manufacturer.

Every person who performs work on the unit must comply with the applicable accident prevention and safety regulations. This applies in particular to the wearing of personal protective equipment.



### **DANGER!**

**Risk of fatal injury due to electric current! All electrical connections must be carried out by qualified electricians only.**

**Before opening the unit, disconnect the system from the power supply and secure it from being switched back on!**



### **DANGER!**

**Only qualified technicians (trained heating, cooling, refrigerant and electrical technicians) may perform work on the unit and its components.**

## Customer Services

For technical information please contact a qualified technician or the manufacturer's local partner.



Overview "Customer service".



# Switching valve 1" AG

## Installation

The following applies to all work to be done:



### NOTICE

Always comply with the applicable local accident prevention regulations, statutory regulations, ordinances, guidelines and directives.

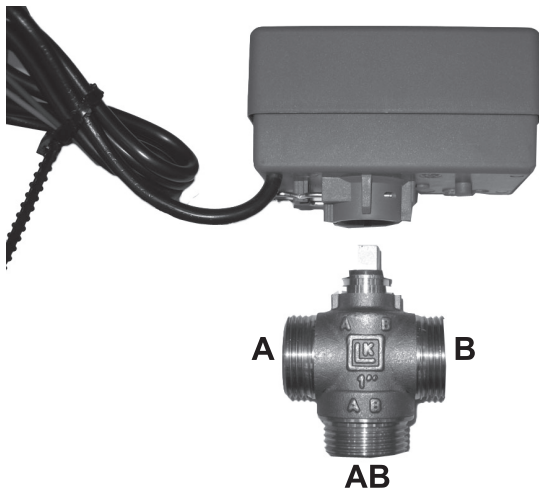


### WARNING!

Only qualified technicians may fit the switching valve.

Proceed as follows:

- ① Attach the switching valve so that subsequently the motor is located above the switching valve and domestic hot water outlet (= outlet A) on the side of the motor connection cable...



- A Domestic hot water (DHW) outlet (open when a DHW pump signal is applied)
- B Heating water outlet (open when no power is applied)
- AB Mains pipe or supply pipe

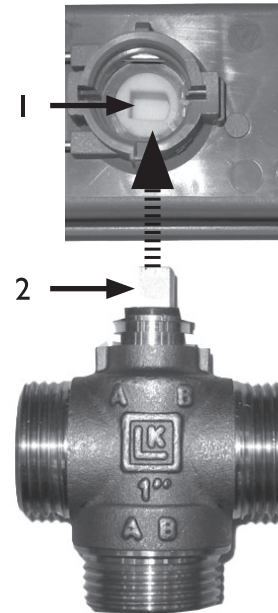


### CAUTION.

The motor must not, under any circumstances, be mounted so that it is suspended. The motor must always be fitted above the switching valve.

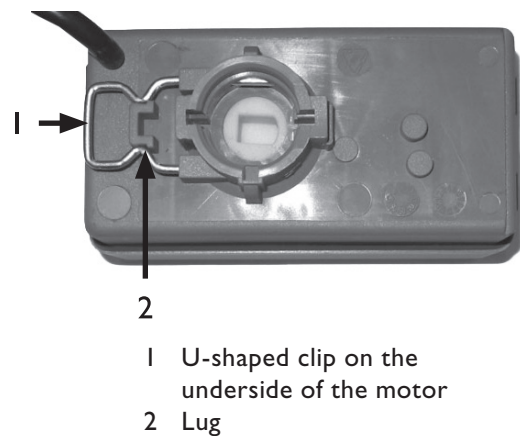
- ② Carefully attach the motor from above on to the switching valve...

When doing so insert the spindle of the switching valve in the spindle bushing on the underside of the motor...



- 1 Spindle bushing on the underside of the motor
- 2 Spindle of the switching valve

- ③ Secure the motor to the switching valve using the U-shaped clip on the bottom of the motor...

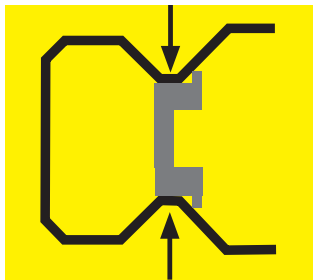


- 1 U-shaped clip on the underside of the motor
- 2 Lug



**! CAUTION.**  
Never press the U-shaped clip behind the lug.

In order to be supported securely, the U-shaped clip must bear with both indents against the lug.



④ Carry out the electrical work.

## Electrical connection work



**DANGER!**  
Risk of fatal injury due to electric current!

All electrical work must be carried out by qualified electricians.



**DANGER!**  
During installation and while carrying out electrical work, comply with the relevant EN-, VDE (German Association for Electrical, Electronic & Information Technologies) and/or local safety regulations.

Comply with technical connection requirements of the responsible power supply company, if required by the latter!



**DANGER!**  
Only make electrical connections according to the specifications of the wiring diagram.

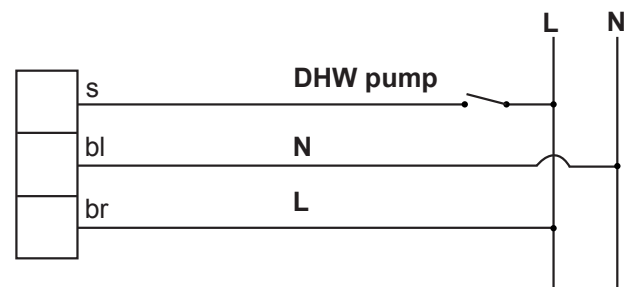
Proceed as follows:

- ① Disconnect the heat pump and heating and heat pump regulator (wall regulator) from the power supply...
- ② As necessary, remove the front panel and then open the electrical switch cabinet of the heat pump or open the housing of the heating and heat pump regulator (wall regulator)...



Operating instructions for your heat pump.

③ Carry out the electrical work...



- s = black
- bl = blue
- br = brown
- N = neutral conductor
- L = 230V conductor (from the heat pump control)
- DHW pump = from the DHW pump terminal of the heating and heat pump regulator


- ④ Close the electrical switch cabinet and replace the heat pump front panel or the housing of the heating and heat pump regulator (wall regulator)...
- ⑤ Reconnect the heat pump and heating and heat pump regulator (wall regulator) to the power supply.



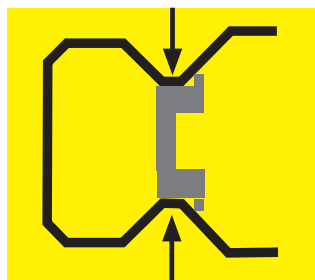
# USV 1" AG

## Bleeding

Proceed as follows:

- ① Pull off the U-shaped clip on the motor underside and lift the motor upwards away from the switching valve...
  - ② Turn the spindle on the switching valve by about 30°...
  - ③ Start the bleed program via the heating and heat pump regulator ...
-  Operating manual of the heating and heat pump regulator.
- ④ Once the bleed program has completed, turn the spindle of the switching valve back to the start, replace the motor from above on the switching valve and secure using the U-shaped clip.

**! CAUTION.**  
**Never press the U-shaped clip behind the lug.**  
**In order to be supported securely, the U-shaped clip must bear with both indents against the lug.**



## Operation and maintenance

The valve unit is maintenance-free

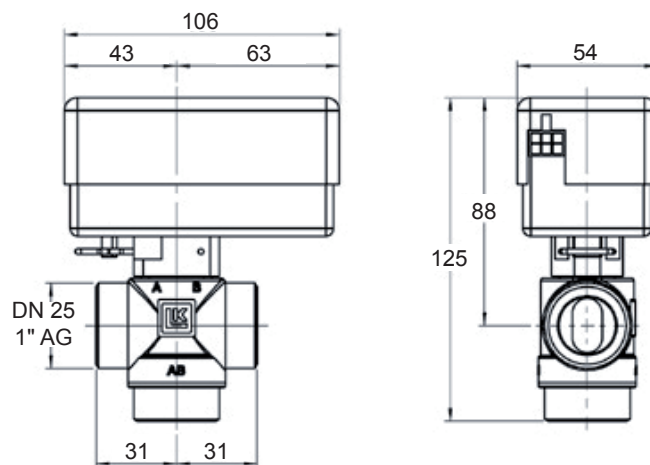
If the power supply is interrupted, the valve cone remains in its current position.

When the valve is disconnected from the power, the valve cone can be manually returned to its central position (this is advantageous for water flow between the heating cycle and the water supply circuits)..

## Technical Data

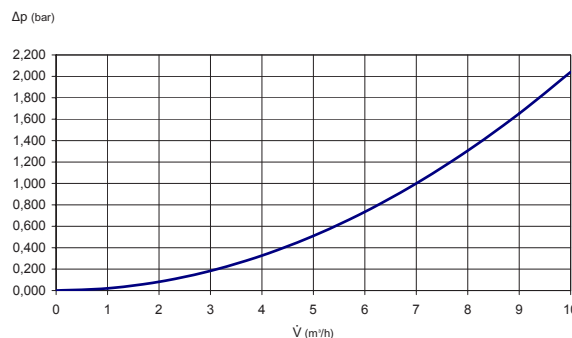
Motor-operated 3-way switching valve	
Voltage code	1~/N/PE/230V/50Hz
Power consumption	5 VA
IP rating	IP 40
Cable connection, 3 core; cable length approx.	3 m
Duration	approx. 8 seconds
Maximum differential pressure	1 bar
Maximum operating pressure	10 bar
Maximum operating temperature	5° C – 95° C
Ambient temperature	1° C – 60° C
Connection	DN 25 1" AG

## Dimensional drawings



DN 25 • Dimensions in mm

## Pressure loss curve



Legend:

- $\dot{V}$  Volume flow
- $\Delta p$  Pressure loss