

LK Mini Loop Valve M5

DESIGN

LK Mini Loop Valve M5 is designed to control under floor heating systems no larger than 5 m² of floor area. LK Mini Loop Valve M5 is used with floor heating systems with 8 mm, 12 mm or 16 mm pipes embedded in screed or concrete only.

LK Mini Loop Valve M5 consists of a valve with an integrated temperature limiter which makes it possible to limit the floor surface temperature.

The room temperature is controlled via a capillary tube connected thermostat (capillary tube length 2 m). It is also possible to install a wireless or wired electronic room control. Contact LK Technical Support for more information.

FUNCTION / REQUIREMENTS

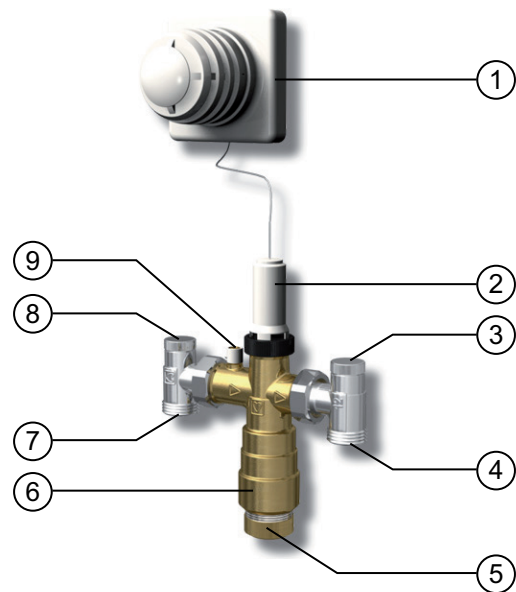
For LK Mini Loop Valve M5 to work properly, the pressure at the primary connection must be greater than 12 kPa. LK Mini Loop Valve M5 can only be connected to parallel radiator pipe systems with outdoor temperature-compensated supply temperature. The LK Mini Loop Valve M5 cannot be installed in a single-pipe radiator system, since the valve closes or limits the flow in the single-pipe radiator circuit. The temperature of the system must not exceed +55 °C.

LK Mini Loop Valve M5 is resistant to glycol up to 50% mix. The floor heating installation must be embedded in concrete or screed. The pipes must be laid in a double loop, see section entitled *Installation instructions*.

The existing heating system must not contain any contaminants that may damage or clog up the LK Mini Loop Valve M5.

NOTE!

The LK Mini Loop Valve M5 cannot be installed in a single-pipe radiator system.



LK Mini Loop Valve M5.

1. Capillary tube connected thermostat, length 2 m
2. Thermostat connection
3. Return valve
4. Return connection 3/4" male EuroCone
5. Return flow temperature limiter
6. Mini loop valve
7. Supply connection 3/4" male EuroCone
8. Supply valve
9. Bleed valve



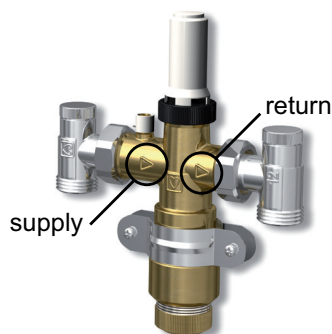
Example of placement of LK Mini Loop Valve M5.

INSTALLATION INSTRUCTIONS

Installation of LK Mini Loop Valve M5

LK Mini Loop Valve M5 usually connected into the building's regular parallel radiator pipe systems. A T-connection is installed on the radiator system's supply and return flow. The floor heating circuit's supply flow is connected to the radiator circuit's supply flow. The floor heating circuit's return flow is connected to the mini loop valve's supply flow. The mini loop valve's return flow is connected to the radiator circuit's return flow pipe. For more information, see section entitled *Laying the pipe*.

Dependent on where LK Mini Loop Valve M5 is placed in relation to the connection point on the existing heating system, the floor heating pipes may in some cases be crossed. To avoid this the mini loop valve can be reversed. Please note the flow direction arrows (see illustration below).



Thermostat

LK Mini Loop Valve M5 comes with a thermostat equipped with 2 m capillary tube. The capillary tube concealed in for example a vinyl tube/PVC conduit (min. Ø 20 mm). To insert the capillary tube into the vinyl tube/PVC conduit, remove the white plastic sleeve from the thermostat. Unscrew the white plastic nut and carefully pull out the content. Reassemble in reverse order. Place thermostat bulb so it will not be affected by other heat source, such as sunlight and ventilation.

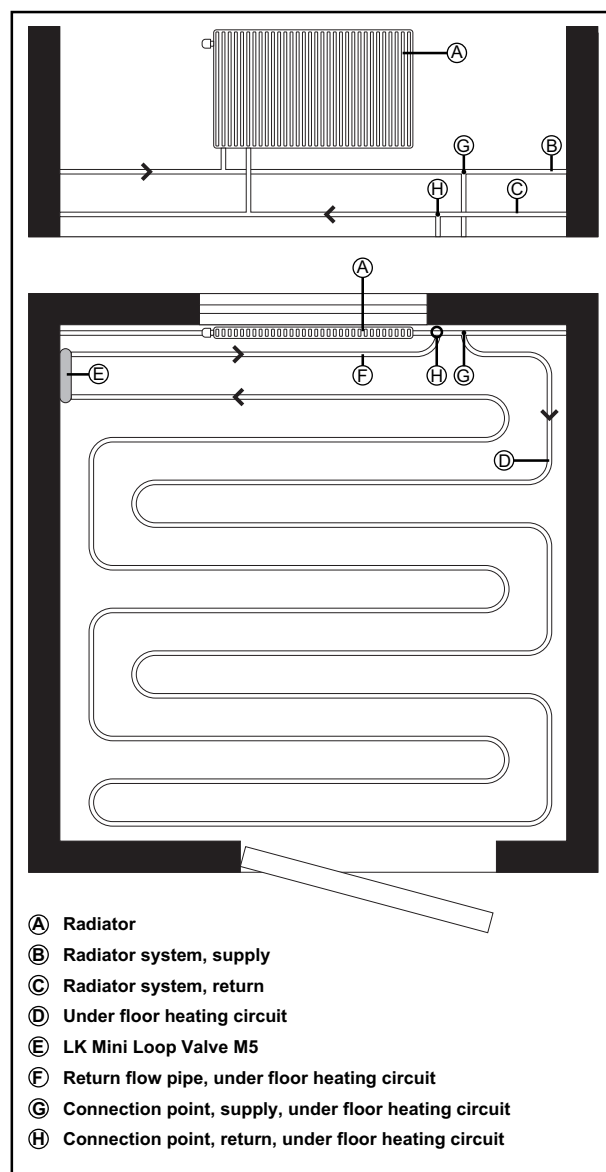
Laying the pipe

As there will be a large temperature drop between flow and return, the under floor heating pipes should be installed in a double loop at recommended c/c width (see pipe layout diagram). Since the pipes must be installed in a double loop, only floor heating systems embedded in screed or concrete must be used.

The LK Mini Loop Valve is intended for pipe dimensions 8 mm, 12 mm and 16 mm. Connect the under floor heating circuit's supply flow to the radiator circuit's supply flow. (See G in diagram below.) Connect the under floor heating circuit's return flow to the mini loop valve's supply flow. (See item 7 in Illustration 1.) Connect the mini loop valve's return flow to the radiator circuit's return flow pipe. (See H in diagram below.)

Before embedding the under floor heating pipes, tightness testing with water or gas should be conducted in accordance to national regulations.

NOTE!
Pipes should only be connected to the LK Mini Loop Valve M5 using an LK Connection Coupling (see section entitled **Accessories**).



Pipe layout diagram.

BLEEDING AND CHECKS

Check all couplings are adequately tightened.

To prevent air ingress from the floor heating loop into the existing heating system at start up, use the following procedure.

- Close the mini loop valve's return valve (3).
- Begin filling the heating system.
- Open the bleed valve on the mini loop valve (9). Vent the system and then close the bleed valve.
- Close the mini loop valve's supply valve (8).
- Open the mini loop valve's return valve (3).
- Open the bleed valve on the mini loop valve (9). Vent the system and then close the bleed valve.
- Open the mini loop valve's supply valve (8).
- Set the return flow temperature limiter to +30 °C.

TECHNICAL DATA

LK Mini Loop Valve M5

Article no.	241 81 67
Max. operating temperature	55 °C
Max. operating pressure	6 bar
Regulating range of return valve	25 - 55 °C
Regulating range of thermostat	6 - 28 °C
Capillary pipe length	2 m
Width	150 mm
Height	190 mm
Depth	50 mm

Kv-value

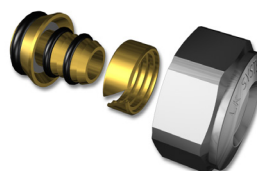
Return flow temperature setting	Kv-value
30	0,6
40	0,6
50	0,4
60	0,35

Thermostat

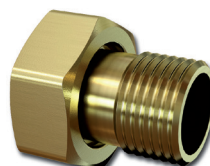
Value	Temperature
*	6,0 °C (frost protection)
1	10,0 °C
2	13,0 °C
3	17,5 °C
♥	20,0 °C
4	22,0 °C
5	25,0 °C
6	28,0 °C

ACCESSORIES

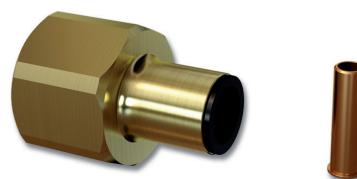
Connection coupling



LK Connection Coupling RF.



LK Adapter.



LK PushFit 8, Single.

Article no.	Name	Dimension
241 93 78	LK Adapter	1/2" male / 3/4" Euro-Cone
241 94 13	LK PushFit 8, Single	8 mm / 1/2" female
241 94 66	LK Connection Coupling RF 12 x 3/4"	12 x 3/4"
241 72 98	LK Connection Coupling RF 16 x 3/4"	16 x 3/4"

LK Cabinet M5 WP

The cabinet is available in two sizes as follows. LK Cabinet M5 WP is designed for concealing or protecting LK Mini Loop Valve M5.

LK Cabinet M5 WP-XL is designed for LK Mini Loop Valve M5 when the mini loop valve is to be controlled electronically.

The cabinet is made of 1 mm powder coated steel plate and has a water tight base with rubber pipe grommets. The cabinet base is fitted with an outlet for leakage indication so that any leakage water can be drained in accordance with the industry practice. The back of the cabinet is equipped with 4 x M8 bolts which are used to secure the LK Cabinet Stand if the cabinet is assembled before the wall is joisted.



LK Mini Loop Valve M5 supplemented with LK ICS-RF1. The equipment is installed in LK Cabinet M5 WP-XL.



LK Mini Loop Valve M5 assembled in LK Cabinet M5 WP.

Article no.	Name	Notes
241 93 14	LK Cabinet M5 WP	Intended for LK Mini Loop Valve M5
241 92 72	LK Cabinet M5 WP-XL	Intended for LK Mini Loop Valve M5 with electronic control
241 88 94	LK Cabinet Stand	Accessory

TROUBLE SHOOTING

The under floor heating circuit is not heating up

- Check that valves (8) and (3) are open.
- Check that the mini loop valve's thermostat is correctly set (see the table under the heading *Thermostat*).

If the above settings are correct and the problem persists, the mini loop valve's return flow temperature limiter (5) can be gradually increased to a maximum of +40 °C.

If the above adjustments have been made and there is still no heat getting to the under floor heating circuit, this may indicate that the pressure from the primary side is too low. Check whether the speed on the primary side of the circulation pump can be increased.