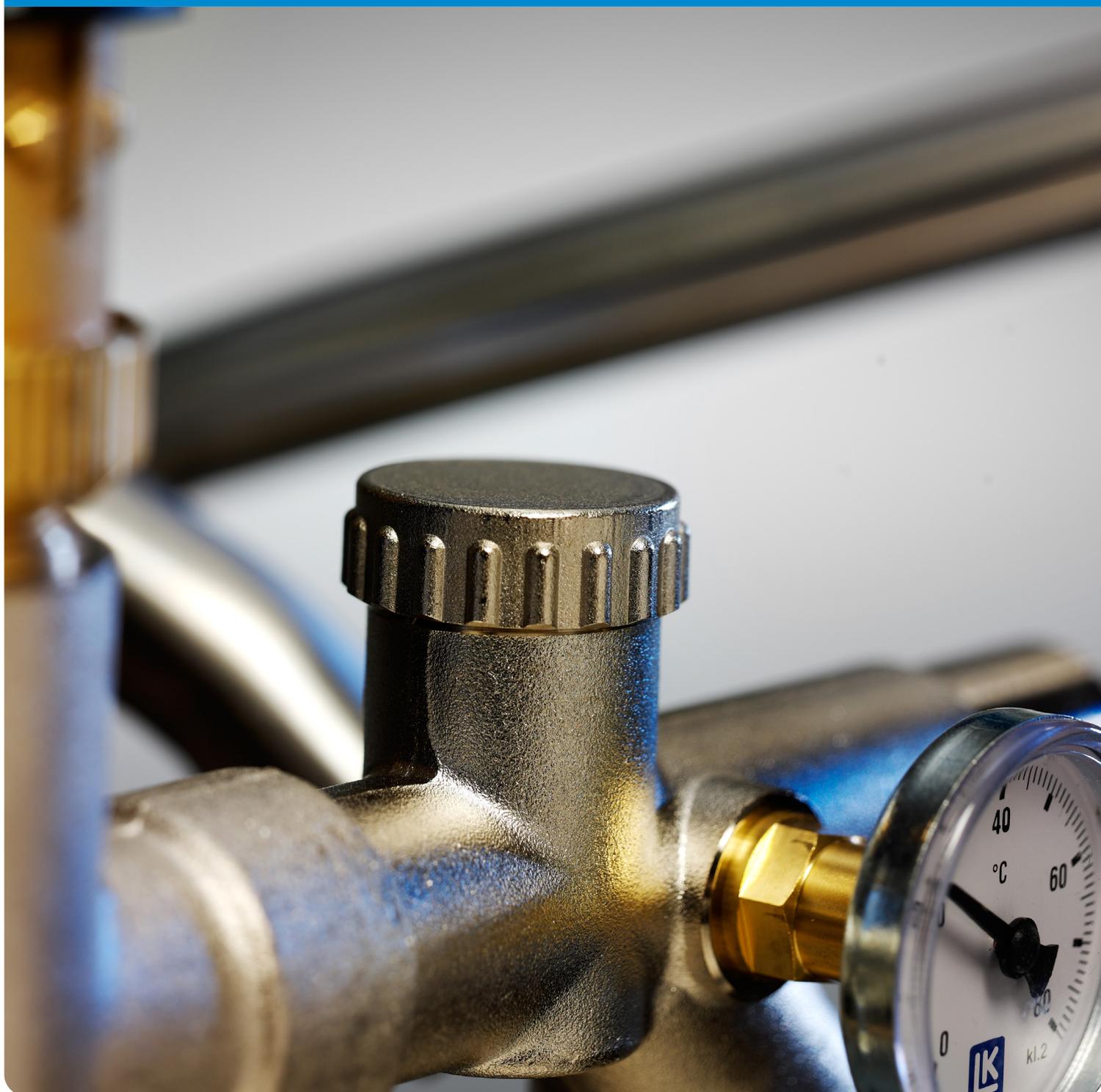


## Products for underfloor heating





# Shunt Group

## LK 419 ManifoldShunt



- Suitable for underfloor heating areas up to 200 m<sup>2</sup> (50W/m<sup>2</sup>)
- Thermostat setting of supply temperature
- Choose between right and left installation



### TECHNICAL DATA

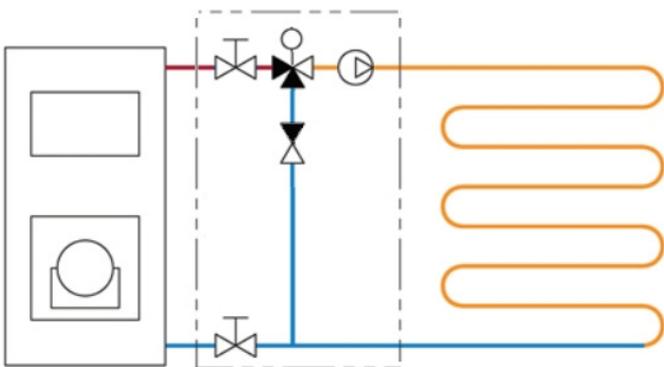
Voltage	230 VAC 50/60 Hz
Power consumption	10-75 W, depending on pump speed
Working temperature	Min. 5 °C /Max. 95 °C
Max. working pressure	1.0 MPa
Media	Water - Glycol mixture max. 50%
Media 2	Water - Ethanol mixture max. 30%
Circulating pumps	Grundfos UPM3 AUTO 15-70
Material, valve body	Brass EN 12165 CW617N
Material, supply pipe	Stainless steel EN 1.4404

LK 419 Manifold Shunt is a shunt group with a thermal mixing valve designed for systems equipped with a main pump.

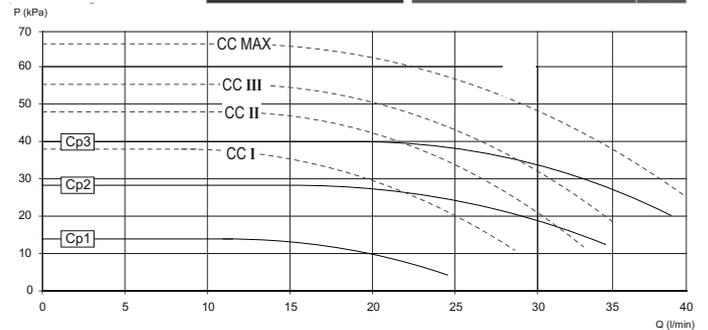
The shunt group is suitable for both left-hand and right-hand mounting directly to LK Heat Circuit Manifold. circuit manifold.

LK 419 is equipped with an asymmetric mixing valve, LK 551 HydroMix, that has a thermal insert that controls the supply of incoming and return pipe, so that the desired set temperature is achieved.

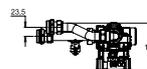
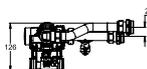
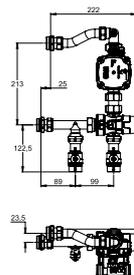
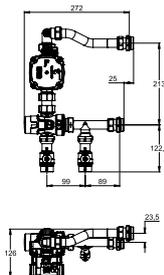
### PUMP CHARACTERISTICS



Cp1	● ● ● ● ●	CONSTANT PRESSURE 1	
Cp2	● ● ● ● ●	CONSTANT PRESSURE 2	
Cp3	● ● ● ● ●	CONSTANT PRESSURE 3-MAX	



### LK 419 - Male thread



Article no.	Dim.	Kvs m <sup>3</sup> /h	Note	Weight kg
299451	M 1"	3.5	25 - 45 °C	4.6
299792	M 1"	3.5	35 - 65 °C	4.6

# Shunt Group

## LK 420 MiniShunt 2.0



- Switchable between single and two-pipe radiator systems
- Suitable for both left-hand and right-hand mounting



### TECHNICAL DATA

Voltage	1 phase 230V+10%/-15%, 50/60 Hz, PE
Power consumption	Max 45 W
Working temperature	Primary Max. 80 °C Secondary Min. 12 °C/Max. 55 °C
Ambient temp.	Max. 60 °C
Max. working pressure	0.6 MPa (6 bar)
Max. differential pressure	0.1 MPa (1 bar)
Media	Water - Glycol mixture max. 50% Ethanol mixture max. 30%
Thread standard	Rp - female thread G - male thread
Protection type	IP X4D
Material, valve body	Nickel-plated Brass EN 12165 CW617N
Circulating pump	Wilo Yonos PARA RSB 15/6-RKA
Max Valve capacity	Kvs 1.05
Max. valve capacity with selfacting thermostat installed.	Max. at room temperature approx. 20 °C Kv 0.9
Approved pump	CE, EC Low Voltage Directive (2006/95/EC) incl. additions

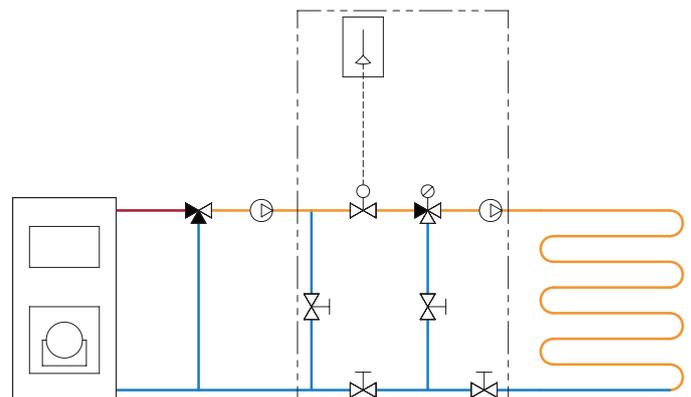
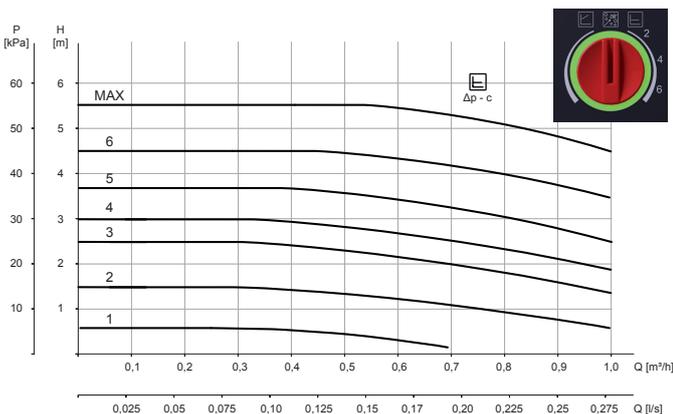
LK 420 MiniShunt 2.0 is a shunt group intended for use when smaller underfloor heating areas are to be connected to an existing heating system. LK MiniShunt adapts the heating system temperature to the lower temperature necessary for the underfloor heating system. Its capacity can normally be set at a heating need of 50 W/m<sup>2</sup> to a maximum 60 m<sup>2</sup> underfloor heating area. Capacity is however dependent on primary temperature, pressure, laying method etc.

- For underfloor heating areas up to 60 m<sup>2</sup>.
- Compact design.
- Energy efficient circulation pump.
- Thermostat-controlled maximum limit of supply temperature
- Switchable between single or twin pipe systems.
- VF valve.
- Easy filling and air bleeding.
- Expandable to 2, 3 or 4 underfloor heating circuits.

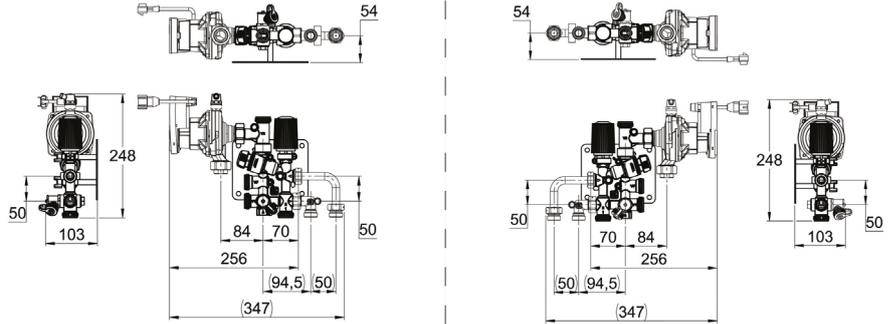
### ITEMS INCLUDED:

- Circulation pump Wilo Yonos Para RSB 15/6-RKA, with automatic speed control, 1 fas 230V AC, 50 Hz, max 45W, 0,44 A
- Thermostat with capillary tube sensor, length 2 m.
- 1 thermometer to place in one of the shunt group's thermometer pockets.
- Hose 0.5 m for air bleeding.
- Primary connector G20 EK and 2 connectors for CU15.
- Bracket.

### PUMP CHARACTERISTICS



# LK 420 - Compression fitting alt. Male thread / Female thread



Article no.	Dimension	Kvs m <sup>3</sup> /h	Weight kg
296994	M 3/4" EuroCone / F 1/2"	1.05	4.0

Dimension = Prim. / Sec. connection

## SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
095442	Circulating pump Wilo PARA	1
095391	Thermostat with sensor	2

# Shunt Group

## LK 421 Manifold Shunt



- Suitable for left-hand and right-hand mounting



### TECHNICAL DATA

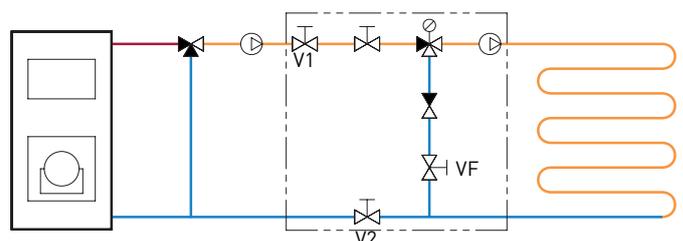
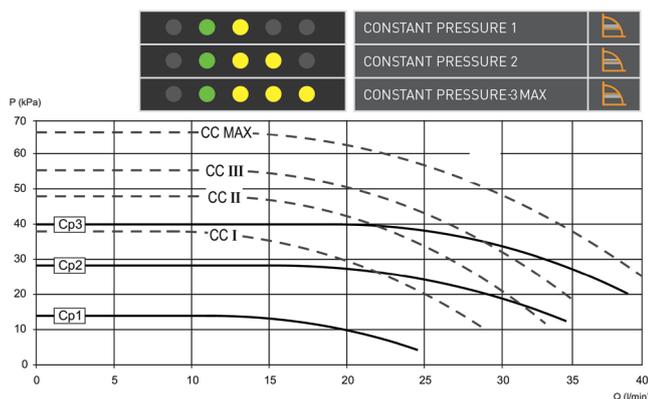
Voltage	1 phase 230V AC, -15 %/+10 %, 50 Hz , PE
Power consumption	Max. 52 W
Working temperature	Primary: Min. 5 °C/Max. 90 °C Secondary: Min. 30 °C/Max. 65 °C
Ambient temp.	Max. 70 °C
Max. working pressure	0.6 MPa (6 bar)
Max. differential pressure	0.1 MPa (1 bar)
Media	Water - Glycol mixture max. 50% Ethanol mixture max. 30%
Thread standard	Rp - female thread G - male thread
Protection type	IP44
Material, valve body	Nickel-plated Brass EN 12165 CW617N
Circulation pump	Grundfos UPM3 AUTO 15-70
Max. valve capacity control valve V1	Kv 2.2 (with hand actuator fitted)
Max. valve capacity control valve V1	Kvs 3.6 (with electric valve actuator)
Control valve V2	Kvs 4.1
Approved pump	CE, EC Low Voltage Directive (2006/95/EC) incl. additions

LK 421 is to be used in systems with main pump in the primary circuit. Its capacity can be set at a flat rate of heating requirements of 50W/m<sup>2</sup> to max 200 m<sup>2</sup> of floor heating surface. The capacity is dependent on the primary temperature, pressure, floor heating installing system, etc. The included supply pipe allows in both left- and righthand assembly to LK Manifold RF. The shunt unit is a complete pre-manufactured unit.

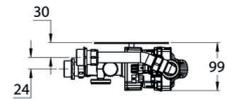
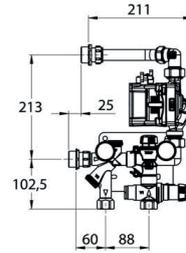
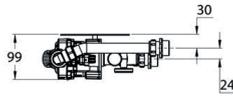
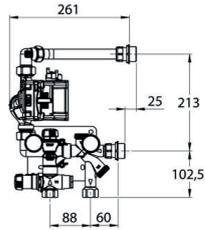
### ITEMS INCLUDED

- Circulation pump Grundfos UPM3 Auto 15-70 130, with automatic speed control, 1 phase 230 V AC 50 Hz, max 45 W, 0.38 A
- Two way control valve Kvs value 2.5, equipped with hand actuator
- VF valve
- Temperature limiter of feed temperature
- Adjustment valve for the primary circuit
- Check valve
- 2 tube thermometers
- Isolation valves for primary circuit
- Fixing bracket

### PUMP CHARACTERISTICS



## LK 421 - Female thread / Male thread



Article no.	Dimension	Weight kg
296995	F 3/4" / M 1"	4.6

Dimension = Prim. / Sec. connection

## SPARE PARTS AND ACCESSORIES

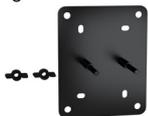
1



2



3



Article no.	Article	Position
187172	Circulating pump Grundfos UPM3 Auto 15/70	1
095018	Thermometer T40, 0 °C - 80 °C	2
095221	Bracket	3

# Shunt Group

## LK 422 Manifold Shunt Tmax



- Suitable for left-hand and right-hand mounting



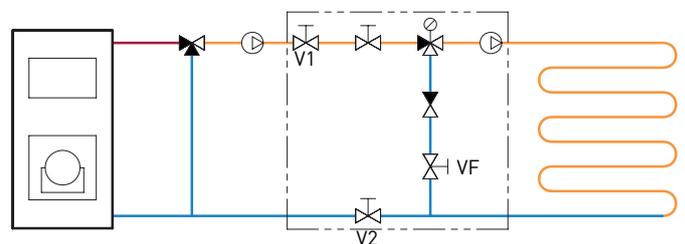
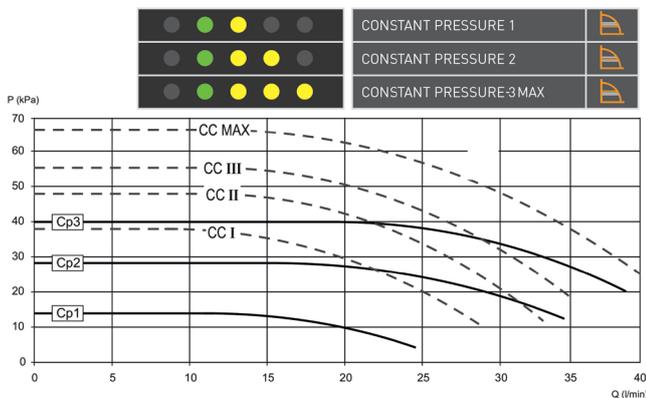
### TECHNICAL DATA

Voltage	1 phase 230V AC, -15 % / +10 %, 50 Hz, PE
Working temperature	Primary: Min. 5 °C/Max. 90 °C Secondary: Min. 30 °C/Max. 65 °C
Ambient temp.	Max. 70 °C
Max. working pressure	0.6 MPa (6 bar)
Max. differential pressure	0.1 MPa (1 bar)
Media	Water - Glycol mixture max. 50% Ethanol mixture max. 30%
Thread standard	G - male thread, G - female thread
Protection type	IP44
Circulating pumps	Grundfos UPM3 AUTO 15-70
Material, valve body	Nickel-plated Brass EN 12165 CW617N
Material, supply pipe	Stainless steel EN 1.4404

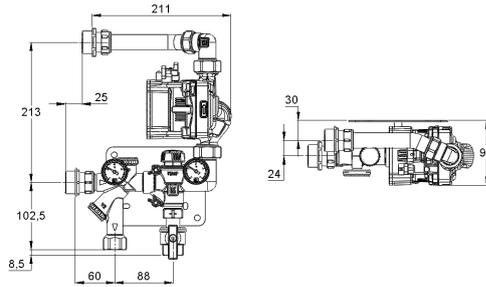
LK 422 Manifold Shunt Tmax is used in systems with a main pump. The shunt unit can be mounted directly to LK Manifold RF from the left or right. The shunt unit is fitted as standard with a constant thermostat controlled feed temperature as well as an automatic speed controlled pump for reduced energy consumption and quieter operation. The guideline capacity of this shunt unit is a maximum of 130 m<sup>2</sup> floor heating surface. The capacity is dependent on heat requirement, laying procedure etc.

LK 422 can be mounted directly onto the manifold from the right or left. A manifold supply pipe for use when mounting to the left of the manifold is supplied. When fitting from the right, shorten the supply pipe by about 50 mm, reposition the thermometers and the pump through 180°.

### PUMP CHARACTERISTICS



## LK 422 - Female thread / Male thread



Article no.	Dimension	Kvs m <sup>3</sup> /h	Kvs2 m <sup>3</sup> /h	Weight kg
2419498	F 3/4" / M 1"	2.7	5.0	5.3

### SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
187172	Circulating pump Grundfos UPM3 Auto 15/70	1
095018	Thermometer T40, 0 °C - 80 °C	2
095221	Bracket	3

# Shunt Group

## LK 423 MiniLoop RTC

- Small and compact
- Perfect for areas up to 10 m<sup>2</sup>



### TECHNICAL DATA

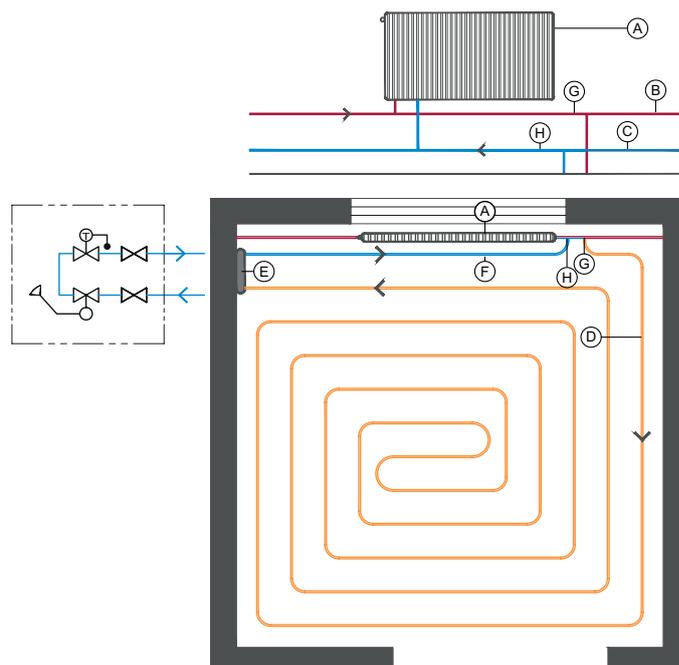
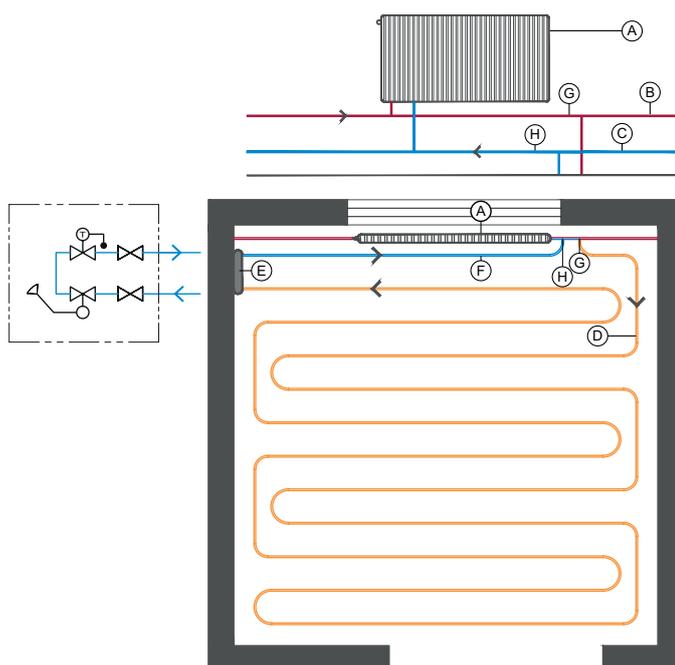
Working temperature	Max. 55 °C
Max. working pressure	0.6 MPa (6 bar)
Media	Water - Glycol mixture max. 50%
Recommended max. underfloor heating surface installation	10 m <sup>2</sup>
Return valve adjustment range	23 - 44 °C
Thermostat adjustment range	6 - 28 °C
Capillary tube length	2 m
Diameter capillary tube bulb	Ø 16 mm

LK 423 MiniLoop RTC is designed to control smaller under floor heating systems that are embedded in concrete or levelling compound with a pipe dimension of 8 mm, 12 mm, 16 mm or 20 mm.

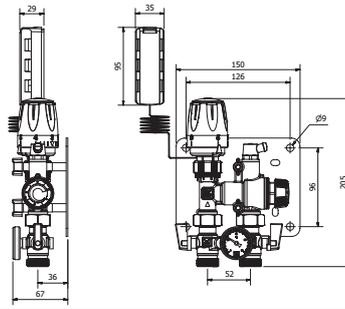
LK 423 MiniLoop RTC has integrated return temperature limiter that make it possible to limit the floor surface temperature.

The room temperature is regulated via a capillary tube thermostat. It is also possible to install a wireless or wired electronic room temperature control.

- A. Radiator
- B. Radiator system, supply
- C. Radiator system, return
- D. Floor heating circuit
- E. LK 423 MiniLoop RTC
- F. Return pipe, floor heating circuit (from RTC)
- G. Connection point, supply floor heating circuit
- H. Connection point, return floor heating circuit (from RTC)



## LK 423 - Male thread



Article no.	Dimension	Kvs m <sup>3</sup> /h	Weight kg
299355	3/4" Eurocone	1.48	0.4

## SPARE PARTS AND ACCESSORIES

1.



Article no.

Article

Position

095391

Thermostat with sensor

1

2988856

LK Installation cabinet RTB

2

1882348

LK Frame/hatch

3

2.



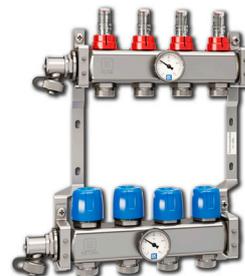
3.



# Manifold

## LK 430 Manifold

- For up to 12 circuits
- Stainless steel



### TECHNICAL DATA

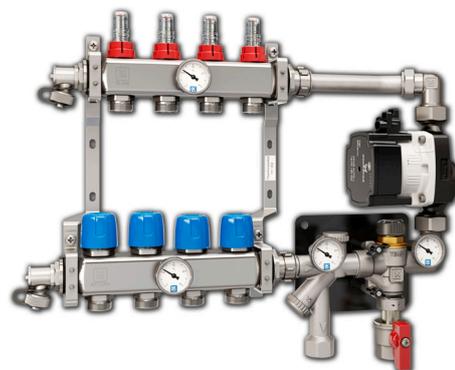
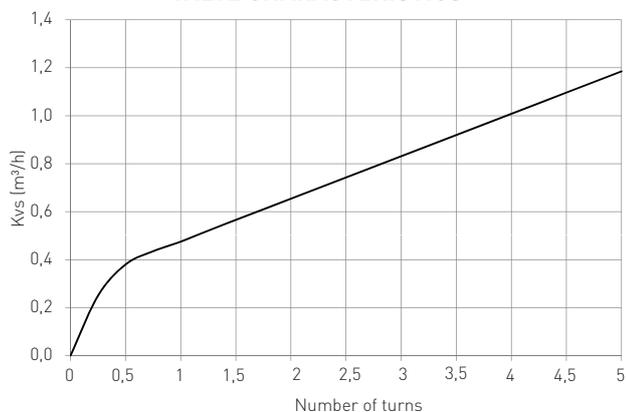
Working temperature	Min. 5 °C/Max. 70 °C (max. 85 °C briefly)
Ambient temp.	Min. -20 °C/Max. 40 °C
Max. working pressure	1.0 MPa (10 bar)
Max. differential pressure	100 kPa (1 bar)
Media 1	Water
Media 2	Water - Ethylene glycol mixture max. 50%
Media 3	Water - Propylene glycol mixture max. 50%
Media 4	Water - Ethanol mixture max. 50%
Thread standard	G - female thread G - male thread
Flow indication	Scale 0.5 - 5 l/min. ±10%
Thermometer	0 - 80 °C
Material, manifold	Stainless steel EN 10088-3 1.4306
Material, threaded union parts/isolation valves	Nickel plated brass EN 12165 CW617N

LK 430 is a manifold for 2 - 12 underfloor heating circuits. It is manufactured in stainless steel and is delivered pre-mounted to a bracket. The manifold is equipped with filling / drainage valves. The upper manifold marked FLOW is fitted with flow indicators and adjustment valves for setting the respective circuit flows. The lower manifold marked RETURN has manually operated valves for shutting off each respective circuit. These valves are normally replaced with thermoelectric actuators. Thermometers for the return and flow manifolds are available - see under Accessories.

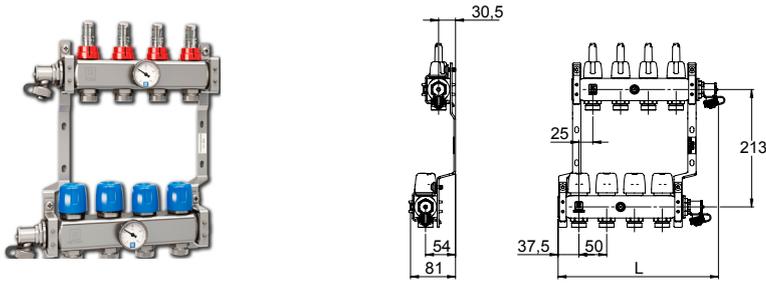
LK 430 can also be supplied with an LK 435 OptiFlow balancing valve for easy adjustment of the circuit flow. The flow rate is clearly indicated on a transparent scale - see under Accessories. For more information see the product sheet for OptiFlow.

The heat supply can be connected to the manifold from the left or the right side. The manifold is delivered ready for connection from the left. When connecting from the right, reposition the drainage valves.

### VALVE CHARACTERISTICS



## LK 430 - Female thread / Male thread



Article no.	Dim. 1	Dim. 2	Dim. 3	Kvs1 m <sup>3</sup> /h	Kvs2 m <sup>3</sup> /h	Number of circuits	L mm	Weight kg
S297311	F 1"	M 3/4" EuroCone	M 1/2"	1.1	2.5	2	190	2.8
S297312	F 1"	M 3/4" EuroCone	M 1/2"	1.1	2.5	3	240	3.2
S297313	F 1"	M 3/4" EuroCone	M 1/2"	1.1	2.5	4	290	3.6
S297314	F 1"	M 3/4" EuroCone	M 1/2"	1.1	2.5	5	340	4.2
S297315	F 1"	M 3/4" EuroCone	M 1/2"	1.1	2.5	6	390	4.7
S297316	F 1"	M 3/4" EuroCone	M 1/2"	1.1	2.5	7	440	5.1
S297317	F 1"	M 3/4" EuroCone	M 1/2"	1.1	2.5	8	490	5.7
S297318	F 1"	M 3/4" EuroCone	M 1/2"	1.1	2.5	9	540	6.0
S297319	F 1"	M 3/4" EuroCone	M 1/2"	1.1	2.5	10	590	6.5
S297320	F 1"	M 3/4" EuroCone	M 1/2"	1.1	2.5	11	640	7.0
S297321	F 1"	M 3/4" EuroCone	M 1/2"	1.1	2.5	12	690	7.5

### SPARE PARTS AND ACCESSORIES

1.



2.



Article no.	Article	Position
095018	Thermometer T40, 0 - 80 °C	1
090275	LK 435 OptiFlow, 2-16 l/min	2
090276	LK 435 OptiFlow, 4-36 l/min	2
095182	Drainage valve	-

# Flow Adjustment Valve

## LK 435 OptiFlow



- With MemoStop for locking setting
- Adjusted with Allen key while reading off flow on a clear scale



### TECHNICAL DATA

Working temperature	
Water/Glycol 50/50%	Min. -20 °C/Max. 80 °C (90 °C briefly)
Water/Ethanol 70/30%	Min. -20 °C/Max. 70 °C (85 °C briefly)
Max. working pressure	1.0 MPa (10 bar)
Max. differential pressure	100 kPa (1 bar)
Media	Water - Glycol mixture max. 50% Ethanol mixture max. 30%
Material, valve body	Nickel-plated Brass EN 12165 CW617N
Flow ranges	2-16 l/min, 4-36 l/min
Accuracy, flow meter	+/- 12%
Thread standard, adjustment valve inlet:	G - male thread
Thread standard, adjustment valve outlet	G - female thread

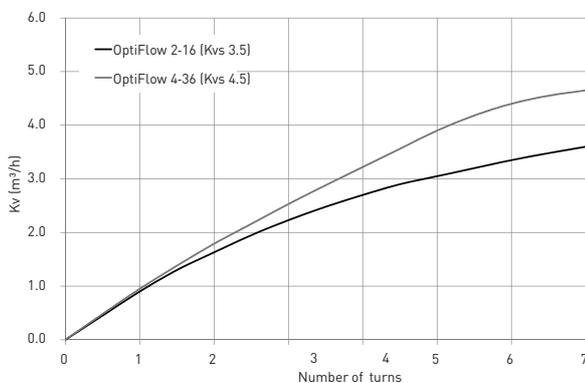
LK 435 OptiFlow is a group valve for flow adjustment of hydraulic systems such as underfloor heating, traditional heating and cooling systems. Adjustments are easily made using an Allen key. No measuring equipment is needed. The flow rate is read off directly from the visual flow indicator. The flow meter continuously measures and displays the actual flow rate during operation.

LK 435 OptiFlow has a MemoStop function for locking the setting. This means that the valve can be used as a shut-off valve without losing settings. A marking plate for labelling and documenting the setting is enclosed. LK 435 OptiFlow can be supplemented with a thermometer and threaded union parts, straight or angular, with rotating nut for simple assembly to, for example, an LK 430 Manifold RF - see under Accessories. The thermometer is placed in the valve's integrated sensor pocket.

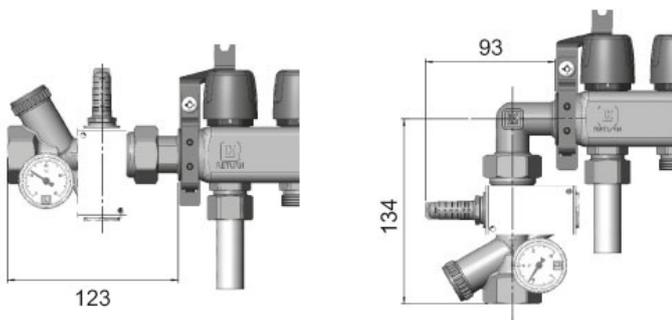
The valve can be mounted in any position. The arrow on the valve body indicates the flow direction. For accurate measurement a straight piece of tube at least of the same length as the valve body should precede the balancing valve. When assembling to an LK 430 Manifold RF the adjustment valve can be fitted directly to the manifold, thus replacing the shut-off valve.

The flow meter is designed so that the fluid does not flow through the glass in order to protect it from debris and dirt. However, after a period of time the glass may still have to be cleaned as the fluid often becomes contaminated and blackened. It is then easy to remove the glass to clean it. The function/setting of the valve is not affected by deposits in the glass. Except for cleaning of the glass, the group valve normally requires no maintenance. The installation should be checked regularly.

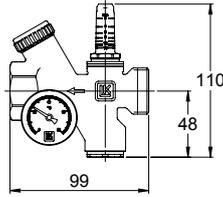
### VALVE CHARACTERISTICS



### WITH LK 430 MANIFOLD RF

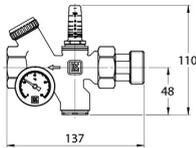


## LK 435 - Male thread / Female thread

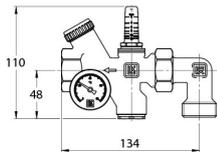


Article no.	Dimension	Kvs m <sup>3</sup> /h	Flow range	Weight kg
090275	Adjustment valve - M 1" / F 1"	3.5	2-16 l/min	0.5
090276	Adjustment valve - M 1" / F 1"	4.5	4-36 l/min	0.5

### SPARE PARTS AND ACCESSORIES



Article no.	Article	Position
095222	Threaded union part straight M 1" with rotating nut	1
095223	Threaded union part angle M 1" with rotating nut	2
095018	Thermometer T40, 0 °C - 80 °C	3



# Portable Boiler

## LK 440 EasyHeat

- Complete portable electrically heated boiler
- Available in 3 kW and 9 kW
- Easy installation



### TECHNICAL DATA

Circulating pumps	Grundfos UPM3 AUTO
Protection class	IP 44
Operating thermostat	Max 60 °C
Safety thermostat	80 °C
Expansion tank	12 l
Safety valve	1.5 bar
Max. glycol solution	30%
Boiler volume	2.8 l

The LK 440 EasyHeat is a complete portable electrically heated boiler. It is primarily meant to be used as a temporary heater, e.g. for drying concrete slabs installed with under floor heating and for heating buildings under construction.

LK 440 EasyHeat is available in two versions, with 3-phase 400V or 1-phase 230V.

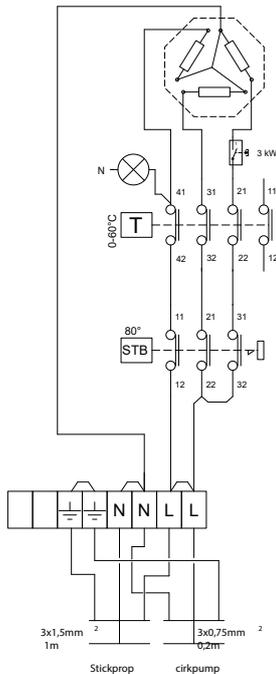
The total output capacity on 3-phase 400V is 9 kW and works in two steps of 4.5 kW.

The total output capacity on 1-phase 230V can be manually set between 2 or 3 kW.

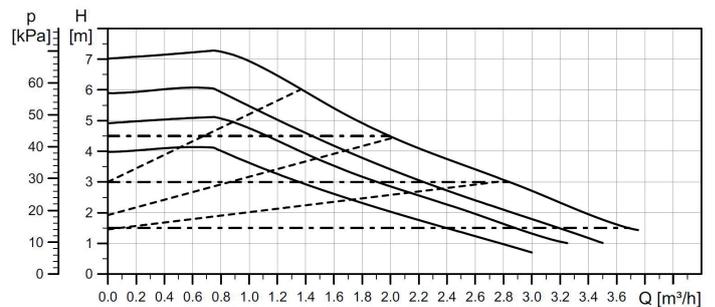
The boiler is supplied complete with a circulation pump, an expansion tank, and auxiliary devices including a safety valve and air vent valve.

Connection to the under floor heating manifold or heating system is simple, using steel-reinforced flexible hoses.

Temperature regulation is controlled by the boiler's operating thermostat.



### CAPACITY DIAGRAM



## LK 440



Article no.	Dim.	Connection	Voltage	B mm	H mm	L mm	Safety thermostat	Weight kg
298470	F 1"	3-phase 400 V Boiler must be protected using 3x16 A fuses (max. current 13.5 A)	9 kW in two stages at 4.5 kW	430	650	710	80 °C	30,0
298588	F 1"	1-phase 230V Boiler must be protected using 8,5 A 2 kW, 13 A 3 kW	2 alt. 3 kW	430	650	710	80 °C	30,0

# Portable Boiler

## LK 450 EasyHeat P

- Portable
- Water level detection
- Possible to lock after commissioning



D

### TECHNICAL DATA

Voltage	400 V
Primary voltage, adapter	400 V
Max. boiler efficiency	9kW (3 + 6kW)
Working temperature	8-60 °C
Min. supply temperature	8 °C
Max. supply temperature	60 °C
Max. working pressure	3 bar
Media	Water - Glycol mixture max. 30%
Thread standard	G - female thread
Circulating pumps	Wilo Para 15/6 - Composite
Sound level	<30 dB
Electrical connection	CEE-socket 400V/16A 5-pole
Protection type	IP44
Antifreeze function	Yes
Level guard	Yes
Expansion vessel	6 l
Overheating protection	80 °C
File import / export	Micro SD-card



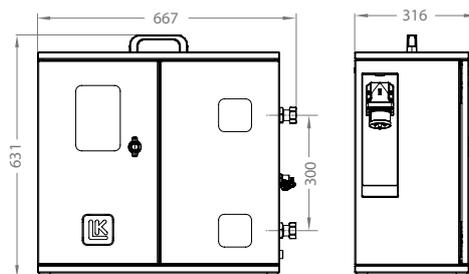
The LK 450 EasyHeat P 9kW is a complete portable electrically heated boiler. It is primarily meant to be used as a temporary heater, e.g. for drying concrete slabs installed with underfloor heating and for heating buildings under construction.

LK 450 EasyHeat P (programmable) 9kW has possibility to make individual programs of a drying period. 60 individual heating steps enables full control of the drying process and possibility to receiving a protocol afterwards from a micro SD-card.

In case of use as a temporary boiler constant temperature can be set.

EasyHeat comes in a blue aluminum cabinet with inspection window, so you can monitor the unit during operation. Cabinet is lockable by using a padlock.

## LK 450 P - 9kW



Article no.	Connection	Voltage	Weight kg
299529	F 1"	400 V	<25kg

## SPARE PARTS AND ACCESSORIES

1.



2.



**Article no.**

187354

**Article**

Wilo Para 15/6 - Composite

**Position**

1

187352

Transport trolley

2

187353

2 pcs. flexible hoses 1" F x 1" M, 1,5 m

3

092320

LK 321 MultiFill®

4

3.



4.





---

**LK ARMATUR AB**

Garnisonsgatan 49  
SE-254 66 Helsingborg  
Sweden

Phone: +46 (0)42-16 92 00  
info@lkarmatur.se  
order@lkarmatur.se

**FOR THE SIMPLER, SMARTER EVERYDAY**

Simpler. Smarter. More sustainable. At LK, we believe there's a better way to do everything. It's a belief all of us at LK apply to every product and solution we create – from water, heating and hydronic solutions.

Our **LK Armatur** business area is a leader in Europe, producing millions of valves per year for the global HVAC market. Beyond individual products, we understand how all parts interact in your complete application. From standard to sophisticated customizations of valves, controllers, components and prefabricated units, our full-spectrum expertise makes it easy to get the results you need today, while anticipating your needs tomorrow.

