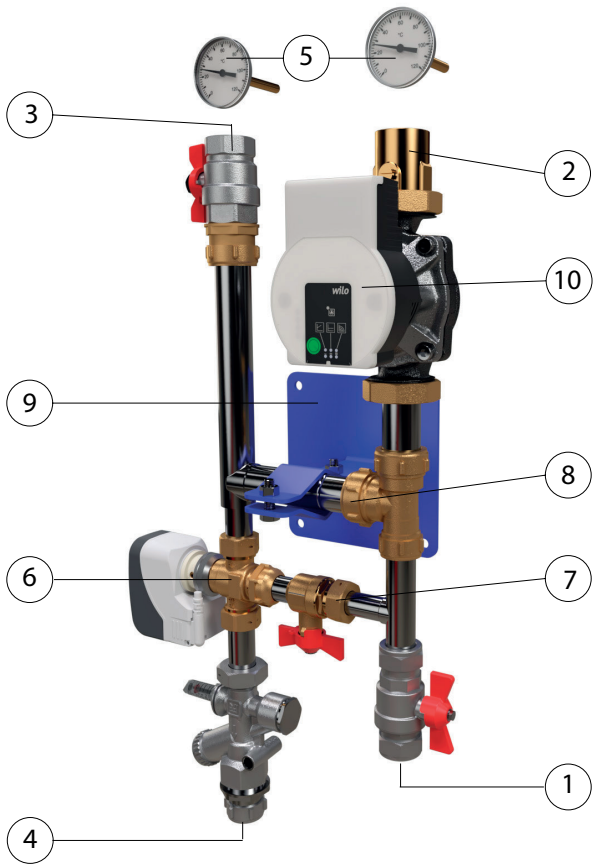
LK Shunt 2/3-2,5

Design

The LK Shunt 2/3-2,5 is intended for systems with a main pump (primary side) and comes equipped with a hand actuator on the control valve. The shunt can be assembled for both right and left flow. Pay attention to potential structureborne sound when locating the shunt. The shunt is equipped with automatic speed controlled pump for reduced power consumption and quieter operation. This shunt is capable of servicing approximately up to max 300 m² of floor heating surface. The capacity is dependent on the primary temperature, pressure, floor heating installing system, etc. As an option, LK Shunt can be supplied with LK Control v.3, a complete unit for sensing external temperature to control flow temperature, see more information below. Where other regulating controls are used, LK can supply 230 V or 0-10 V valve actuators.

Overview

1. Supply line from primary circuit. Ball valve with copper compression fitting CU 22. As an alternative the enclosed adaptor with ¾" female thread, can be used.
2. Supply line to under floor heating circuit. Ball valve with female thread 1".
3. Return line from under floor heating circuit. Ball valve with female thread 1".
4. Return line to primary circuit. The standard design of the return line to the primary circuit is equipped with an LK OptiFlow EVO II, Kvs 3.5 adjustment valve. The connection is fitted with a compression fitting CU 22. As an alternative, the enclosed ¾"adapter with female threads can be used.
5. Thermometers. The thermometers are of surface contact type for location on the under floor heating circuit's supply line and return line.
6. Control valve Kvs 2.5.The control valve is equipped with a hand actuator to allow manual adjustment of the supply line temperature. Siemens VXP459.15-2.5.
7. By-pass. Isolation valve for switching between 2 or 3-way designs on the control valve. Open valve = 3-way design. Closed valve = 2-way design.
8. Check valve. There is an in-built check valve cartridge in the secondary circuit.
9. Wall bracket.
10. Circulation pump. Wilo Para 25-130/8-75/SC, with automatic speed control.



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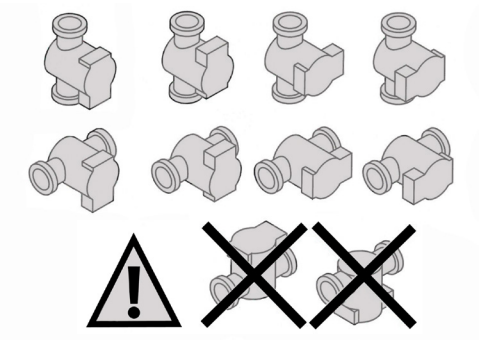
Requirements

To get a correct operation for the shunt unit in hand mode, it should be installed in systems with an outdoor temperature control supply temperature. Otherwise the shunt unit should be equiped with LK Control v.3.

Before assembly, the heating system must be flushed and should not contain any impurities or additives which can damage the LK Shunt. Maximum 30% glycol mixture.

NOTE!
The LK Shunt is to be assembled with the pump's axis/rotor in a horizontal position and that the valve actuator is not located beneath the control valve.



Construction

Right or left operation model

Supply line to right or left is optional. (The picture shows the right operation model.) To satisfy customer requirements, the circulation pump and wall mounting are not pre-assembled.

The calculated primary flow should be adjusted as described in the program documentation. The desired flow is adjusted using a 4 mm Allen key at the same time as the flow is read off in the flow meter. The valve setting is then locked using an 8 mm Allen key. The adjusted values shall be documented in a test report and on the accompanying marking plate. Once it is properly adjusted, the valve can be used as a shut-off valve using a 4 mm Allen key.

If anti-freeze is mixed in, a recalculation of the indicated flow shall be performed. Refer to the assembly instructions for the LK OptiFlow EVO II adjustment valve for a recalculation table.

Link to assembly instructions for the LK Optiflow EVO II adjustment valve

Circulation pump

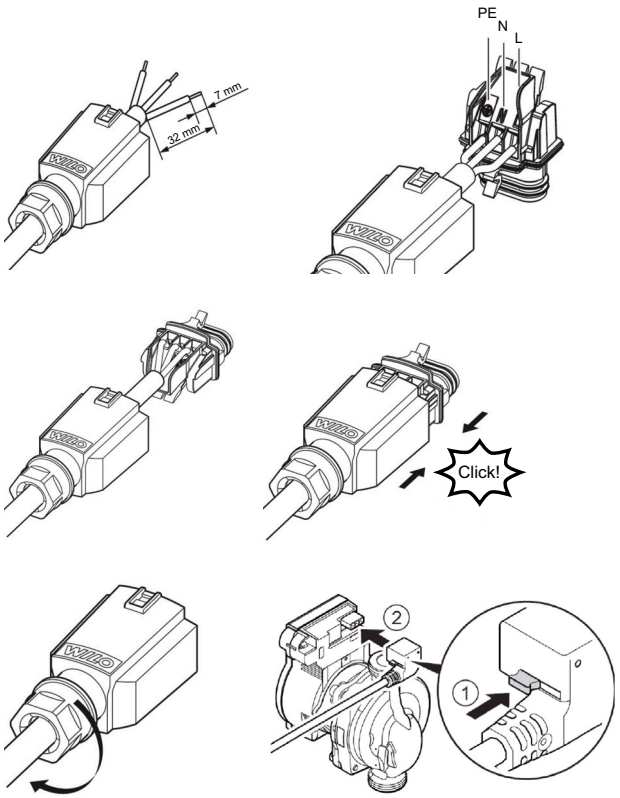
Wilo Para 25-130/8-75/SC, with automatic speed control, 1 phase 230 V AC, 50/60 Hz, max 75 W, 0,66 A. The circulation pump has automatic speed control, which reduces power consumption and gives a quieter operation as the pump adjusts the flow according to the requirements of the system. A cast arrow on the pump housing indicates the direction of the flow.

Electrical connection of circulation pump

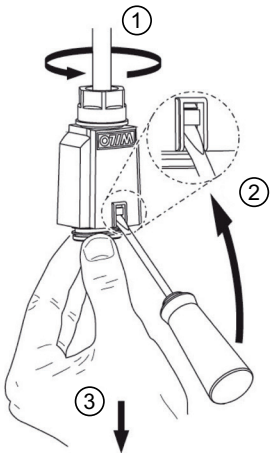
Electrical connection of the pump must be carried out by a qualified electrician in accordance with applicable regulations. The pump is equipped with a fixed 3-core cable and Wilo-connector with integrated strain relief. The Wilo-connector replaces the requirements for 2-pole circuit breaker. Connect the supply cable L, N, PE to the Wilo-connector according to the following sequence. The electrical connection must be fused with Max 10 A slow blow fuse.

NOTE!
During any maintenance/repair work the pump power supply must be disconnected. Motor protection for the circulation pump is not required.

Assembly

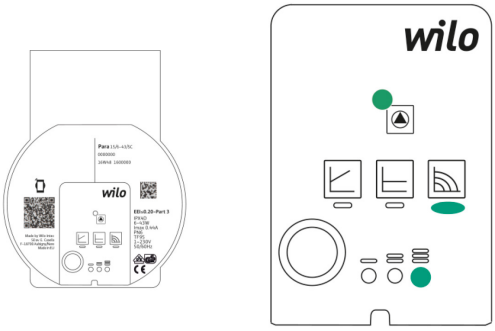


Disassembly



Setting the pump function selector

For under floor heating it is recommended that the pump is set to constant pressure control. Select the desired capacity with the function selector. Ensure that the pump never runs dry and the system is well vented before use. Use the pump´s automatic venting routine at start up.

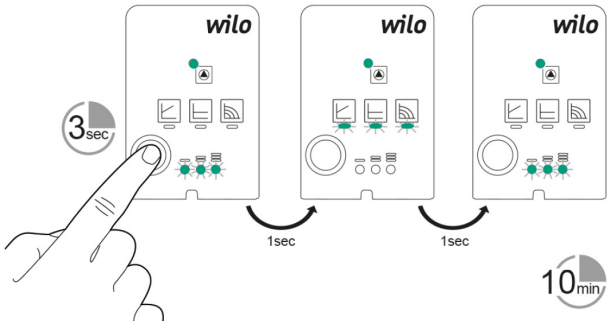


Wilo Para 25-130/8-75/SC with factory-set display

The green pushbutton is used to change the setting. See Wilos ***Quick Guide*** on Wilos website.

Automatic venting routine

When the floor heating system is filled, flushed and vented the circulation pump can be started. At start up, use the pump´s automatic venting routine to remove accumulated air in the pump´s rotor chamber. The automatic venting routine start after 3 seconds and lasts for 10 minutes. Venting routine indicated by a fast flashing green diode light.



Settings for deaeration.

Pump curve

After complete venting, choose the constant pressure curve that best matches the requirements of the system, ***Capacity diagram***. If no choice is made, the pump operation automatically switches to constant pressure with max capacity.

Constant pressure curve

For under floor heating it is recommended that the pump is set to constant pressure control. Select the constant pressure curve that best matches the needs of the system, see ***Capacity diagram***.

The symbol for constant pressure.

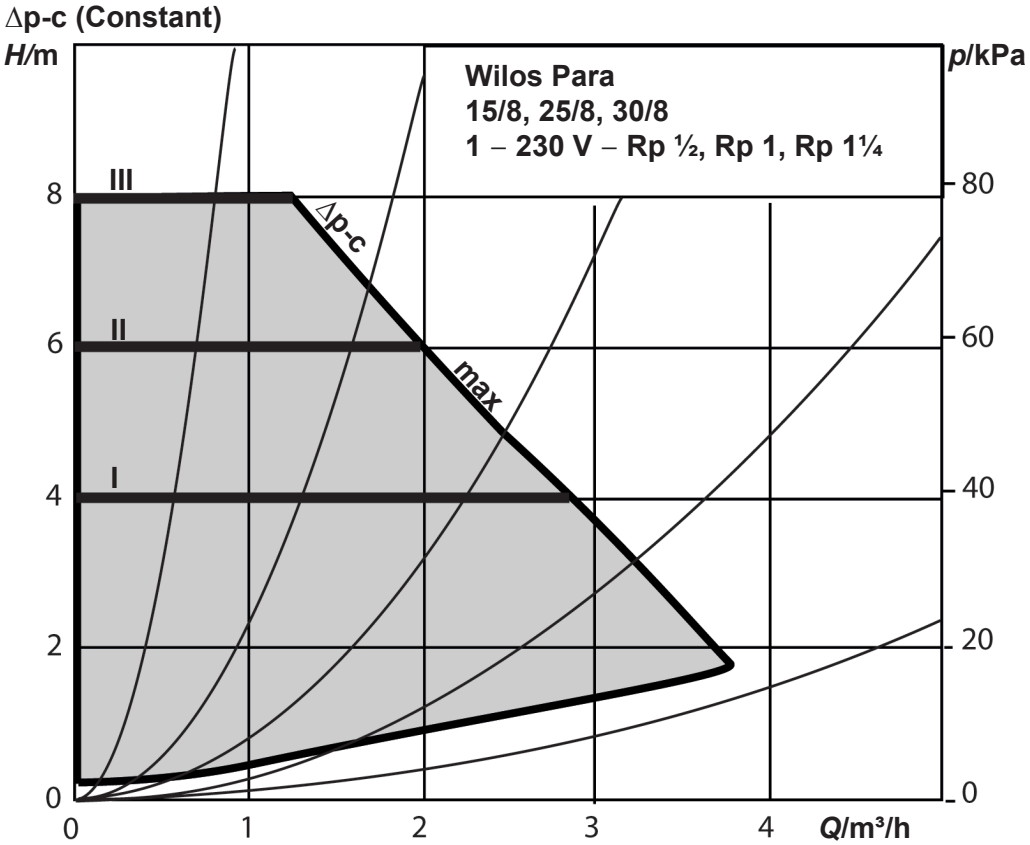
Wilo Para 25-130/8-75/SC set to constant pressure control.

Proportional pressure curve

Proportional pressure setting is normally not used for floor heating.

The symbol for proportional pressure.

Capacity diagram



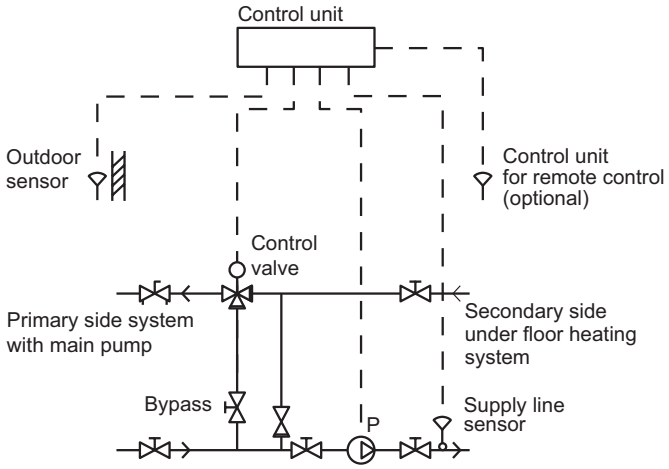
Capacity diagram LK Shunt 2,3-2,5,3 with Wilo Para 25-130/8-75/SC.

LK Control v.3 (accessory)

LK Control v.3 is a complete unit for outdoor temperature (weather) compensated heat regulation, adapted and pre-programmed for LK's floor heating systems. LK Control v.3 consists of a control unit, valve actuator as well as a flow and outdoor temperature sensor. (See separate instructions for LK Control v.3.) As an option, LK Control v.3 can be supplemented with LK Room Unit v.3 for regulating room temperature to the control unit's heat curve. This function is similar to a room thermostat, but with the possibility of remote control of the control unit. LK Room Unit v.3 is often used in areas with an open floor plan where only one room sensor is needed.

LK Control v.3..

Flow diagram



Technical data

Article no.	241 80 87
Maximum operating pressure	0,6 Mpa
Operating temperature secondary	+12 - +63 ºC
Ambient temperature	Max +35 ºC
Circulation pump	Wilo Para 25-130/8-75/SC
Voltage	230 V +10%/-15% 50/60 Hz (ICE 60038)
Output	Max 75 W
Current	Max 0,66 A
Protection class	IP X4D
Insulation class	F
Valve capacity	Kvs 2,5

3-way design

Constant flow in the primary and secondary circuit. Usedin boiler facilities, heating pumps etc., where the heater requires a constant flow.

2-way design

Constant flow in the secondary circuit and variable flow in the primary circuit. Used primarily for connection to district heating.

Dimensions