

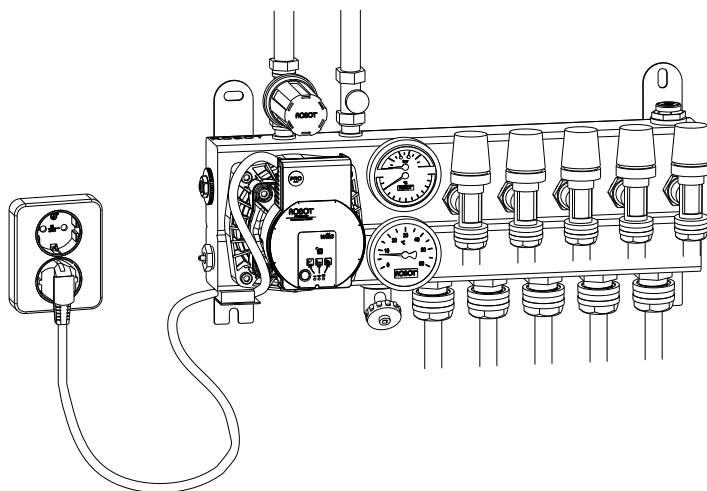
# ROBOT<sup>®</sup>

CLIMATE COMFORT SYSTEMS

MADE BY REAL HUMANS

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## MANIFOLD MANUAL



Compact PRO, Optimum Flow PRO, District Heating PRO, LT,  
Wilo Para Pump



# Content

p.

<b>1. Introduction</b>	<b>01</b>	
1.1	Manufacturer, copyright	01
1.2	Disclaimer	01
<b>2. Warnings/safety measures</b>	<b>02</b>	
2.1	Safety instructions	02
2.2	Required personal protection equipment	04
<b>3. Product description/product overview</b>	<b>05</b>	
3.1	Compact PRO manifold	05
3.2	Optimum Flow PRO manifold	08
3.3	District heating PRO manifold	10
3.4	LT manifold	12
3.5	Setting of the PRO-valve	13
3.6	Pumps	14
3.6.1	Wilo Para HU 25/6-43/SCU	14
<b>4. Storage and transport</b>	<b>15</b>	
4.1	Storage	15
4.2	Transport	15
<b>5. Mounting preparation</b>	<b>16</b>	
5.1	Mounting conditions	16
5.2	Tools overview	17
<b>6. Installing/mounting</b>	<b>18</b>	
6.1	Installation of a manifold	18
6.2	Connecting the manifold to the central heating system	20
6.3	Connecting the underfloor heating pipe to the manifold	20
6.4	Filling and venting the underfloor heating system	22
<b>7. Commissioning/decommissioning</b>	<b>24</b>	
7.1	Putting into operation/setting the manifold	24
7.2	Setting of the PRO-valve on Standard and Optimum Flow manifolds	25
<b>8. Maintenance &amp; service</b>	<b>26</b>	
<b>9. Failures</b>	<b>27</b>	
9.1	Troubleshooting	27
<b>10. Environment/waste disposal</b>	<b>28</b>	
<b>11. Guarantee</b>	<b>28</b>	
<b>12. Contact</b>	<b>28</b>	

## Appendices

## Notes

# 1. Introduction

This manual provides the key and essential information on the system and maintenance of the following manifolds: Compact PRO, District Heating, Optimum Flow PRO, LT and the Wilo Para pump. The 5 group manifold "Compact PRO" is used as an example for installation/mounting in this manual. The installation/mounting of the other manifolds is done in an equivalent way. The main differences will be further explained. Read the manual thoroughly so that you are fully aware of the contents of this manual. Follow the instructions in the manual carefully. Perform the operations in the correct order. Store this manual in a safe and dry place for future consultation! If the manual should go missing, you can ask Robot Vloerverwarming B.V. for a new copy.

## 1.1 Manufacturer, copyright

### Manufacturer:

Robot Vloerverwarming B.V.  
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### Copyright:

All rights reserved. Any copying, multiplying or transferring of this manual to third parties, including storage and usage on optical and electronic data carriers, other than the usage by the owner for training purposes and operations, is only permitted with the written permission of the manufacturer.

## 1.2 Disclaimer

Robot Vloerverwarming B.V. is not liable for accidents or damage due to ignoring the warnings or regulations set out in this manual, including:

- Inexpert or incorrect transportation, mounting, usage or maintenance.
- Use for other applications or under circumstances other than those indicated in this manual.
- The use of other components than prescribed.
- Repairs and adjustments without the permission of the manufacturer.

Robot Vloerverwarming B.V. is not liable for direct and indirect damage as a result of failures or defects to the manifolds, such as interruptions of operations, delays, etc.

Robot Vloerverwarming B.V. disclaims all responsibilities for damage or injury caused by not following the instructions in this manual carefully and not exercising due care during transportation, mounting, usage and maintenance. As a result of our continuous striving for improvement, the product may differ in detail from what is described in this manual. For this reason, the instructions given serve as a guideline for the installation/mounting of the product referred to in this manual only. This manual has been compiled with great care, however, Robot Vloerverwarming B.V. cannot accept any liability for any errors in this manual or the consequences thereof.

## 2. Safety measures & warnings

### 2.1 Safety instructions

#### **Important:**

Please read the safety measures and warnings before you start mounting the manifolds. When mounting, follow the instructions and guidelines as set out in this manual carefully. Never change the order of the operations to be performed. Please contact Robot Vloerverwarming B.V. if anything is unclear about the mounting work.

- Mounting/commissioning must only be done by expert staff (qualified installers), otherwise the guarantee will cease to apply.
- Manifolds of Robot Vloerverwarming B.V. may be used only for their intended purpose.

#### **Mounting:**

- You must comply with the valid standards and legal regulations.
- Immediately check the delivery upon receipt. In the event of damages or incomplete delivery, we ask you to immediately contact Robot Vloerverwarming B.V.
- The materials must be stored in a dry, ventilated area and not be exposed to direct sunlight.
- Open the package carefully. Ensure that you do not damage the product.
- Place the components on a soft and clean surface to avoid damaging your manifold.
- The manifolds may be installed and operated only in an undamaged condition.
- Mark off the mounting area with safety tape to keep unauthorised people away.
- Keep the workplace clean and free from obstacles when mounting and performing maintenance.
- Ensure that there is sufficient ambient lighting when mounting and performing maintenance.
- Mount the manifolds on a flat non-combustible/heat-resistant surface with sufficient carrying capacity. Ensure that the surface is clean and dry and that the manifold is leveled.

- Always mount the manifold with the supplied rubber silencers to limit noise/vibrations as much as possible.
- Ensure that all fasteners are properly tightened. Check if all fasteners are in the right place.  
**PLEASE NOTE:** Not using fasteners will have adverse effects.
- To guarantee the correct operation of the system, you are only allowed to use the manufacturer's replacement components.
- It is important that the correct piping is used (both primary and secondary) for installations to guarantee the correct performance of the manifold.
- **PLEASE NOTE:** The temperature of the water in the manifold can go up to 55°C. Avoid your skin coming into contact with the water at all times.



- **PLEASE NOTE:** When the system is first put into operation, the heat must gradually be brought into the floor because of the linear expansion of the screed and the risk of cracking.
- **PLEASE NOTE:** Disable the pump when filling and venting the system. Take out the plug from the earthed wall socket.



- **PLEASE NOTE:** THE PUMP MUST BE RUNNING WHEN THE SYSTEM IS FILLED.\*

#### Additives

- **PLEASE NOTE:** The addition of chemicals (water descalers or detergents etc.) can adversely affect the lifetime of the system or even damage it. An exception to this is mono-ethylene Glycol (rate of maximum 30% Glycol). This additive is used if the underfloor heating is mounted outside or in cold-storage areas.



#### Warning

This product may be used by children of 8 years and upwards and by persons with reduced physical, sensory or mental capacities, or with lack of experience with the product, provided they are supervised or have received clear instructions for the safe use of the product. They must also understand what hazards are involved in using the product. Never let children play with the product. It is not allowed to have the system cleaned or maintained by children or people with reduced physical, sensory or mental capacities without appropriate supervision.



Robot Vloerverwarming B.V. accepts no liability for damage or injury caused by not strictly observing the safety regulations and instructions set out in this manual or due to negligence when performing mounting work, usage and maintenance of the product or any accessories. Robot Vloerverwarming B.V. is not responsible for any form of damage.

\*This will prevent damage to the pump, which will invalidate the guarantee.

## 2.2 Required personal protection equipment

Always wear the right personal protection equipment when carrying out the work:

**Protective clothing**



**Safety gloves**



**Safety shoes**



**Safety helmet**



**Hearing protection**



**Eye protection**



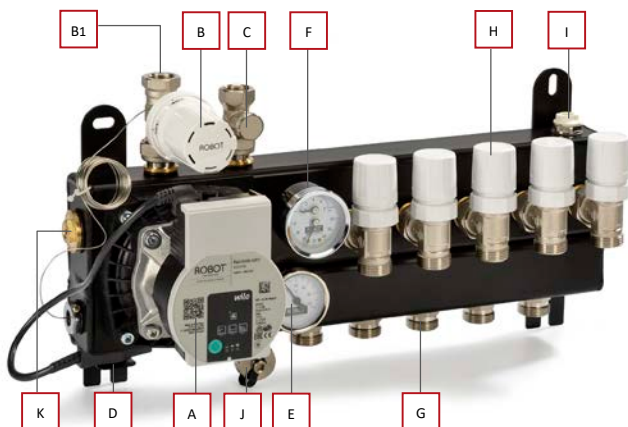
### 3. Product description/product overview

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This manual is written for all steel manifolds of Robot Climate Comfort systems. To get a clear impression of the differences between the manifolds, we prepared an overview. All parts of the specific type of manifold can be found here. It also describes both the application as well as the functioning.

## 3.1 Compact manifold

### 3.1.1 Parts list/functional overview and specifications



- A. Circulation pump, A-label (Wilo Para HU 25/6-43/SCU)
- B. Thermostatic control of supply water for boiler (adjustable)
- B1. Double adjustable thermostatic valve for supply water for boiler
- C. Adjustable return valve for return water for central heating
- D. Temperature safety stat, with set temperature of 55°C +/- 5°K
- E. Temperature gauge for underfloor supply water
- F. Robot pressure/temperature gauge 0-8 bar/0-60°C for underfloor return water
- G. Eurocone connection for underfloor supply water
- H. Thermostatic valve (M30 x 1.5), double adjustable, eurocone connection, for underfloor return water
- I. Manual air bleed valve
- J. Fill and drain tap
- K. PRO Valve for adjustment

### 3.1.2 Application Compact PRO

Underfloor heating, high and low temperature system: minimum 40°C - 70°C supply (primary), suitable for main or auxiliary heating. Maximum 6 bar pressure. In combination with this steel manifold, only use diffusion-tight pipes according to DIN 4726. The manifold is supplied hydraulically neutral.



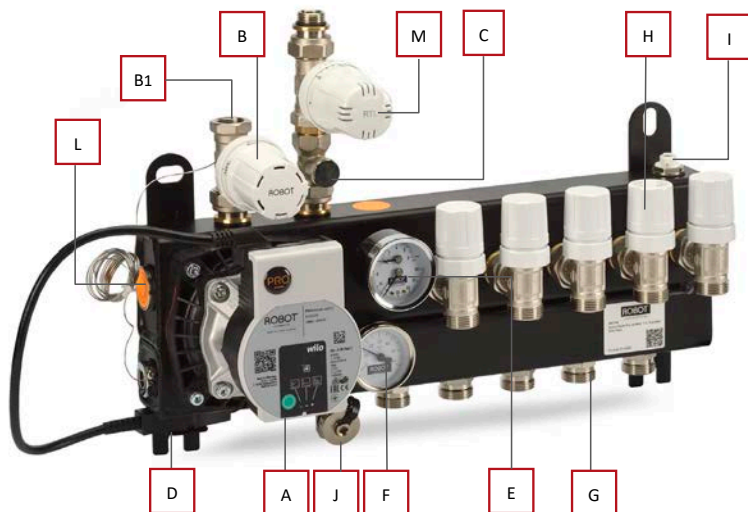
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### **3.1.3 General Compact PRO manifold**

PRO manifolds, suitable for connection to both high and low temperature boilers. When connected to a low temperature heating source, the mass flow should be enlarged primarily to provide sufficient heating power. The PRO manifolds are equipped with a LTV control valve which makes it possible to regulate the return water flow.

## 3.2 District Heating PRO manifold

### 3.2.1 Parts list/functional overview and specifications



- A. Circulation pump, A-label (Wilo Para HU 25/6-43/SCU)
- B. Thermostatic control of supply water for district heating (adjustable)
- B1. Double adjustable thermostatic valve for district heating supply water.
- C. Adjustable return water valve for district heating.
- D. Temperature safety stat, with set temperature (55°C +/- 5K)
- E. Robot pressure/temperature gauge 0-8 bar for underfloor return water
- F. Temperature gauge for underfloor supply water water
- G. Eurocone connection for underfloor supply water
- H. Thermostatic valve (M30 x 1.5), double adjustable, eurocone connection, for under-floor return water
- I. Manual air bleed valve
- J. Fill and drain tap
- L. Internal check valve to prevent flow water to mix with return water (primary)
- M. Return control valve 20-50 °C

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## 3.2.2 Application

Underfloor heating, high-temperature system: 70°C supply (primary)/40°C return (primary), suitable for underfloor heating. Combined with this steel manifold, only use a underfloor heating pipe, in accordance with DIN 4726. Maximum pressure 6 bar on the manifold.

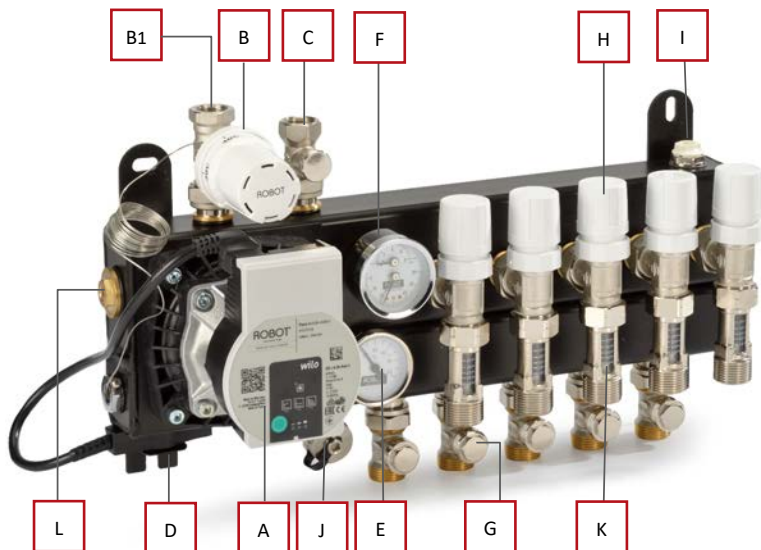
## 3.2.3 General

Because of possible transport damage, the adjustable return valve (C) and the return control (M), are packed as a whole and supplied separately (the flow valve and return water thermostatic valve must remain connected at all times).

The district heating manifolds are equipped with a check valve (L), ensuring that the supply water (primary) is always pumped through the underfloor heating piping to the return pipe in the district heating net. This prevents the water from flowing directly from the supply to the return valve of the district heating net.

### 3.3 Optimum Flow PRO manifold

#### 3.3.1 Parts list / functional overview and specifications



- A. Circulation pump, A-label(Wilo Para HU 25/6-43/SCU)
- B. Thermostatic control of supply water for boilers (adjustable)
- B1. Double adjustable thermostatic valve for supply water for boilers
- C. Adjustable return valve for return water for boilers
- D. Temperature safety stat, with temperature set at 55°C +/- 5°K
- E. Temperature gauge for underfloor supply water
- F. Robot pressure/temperature gauge 0-8 bar/0-60°C for underfloor return water
- G. Single adjustable flow valve
- H. Thermostatic valve (M30 x 1.5), double adjustable, eurocone connection, for under floor return water
- I. Manual air bleed valve
- J. Fill and drain tap
- K. Robot flowmeter (1/2" x 3/4" eurocone)
- L. PRO Valve for adjustment the return

#### 3.3.2 Application Optimum Flow Pro

Underfloor heating, high and low temperature system: approx. 40°C - 70°C supply (primary), suitable for main or auxiliary heating. Maximum 6 bar pressure. In combination with this steel manifold, only use diffusion-tight pipe in accordance with DIN 4726. The manifold is supplied hydraulically neutral.

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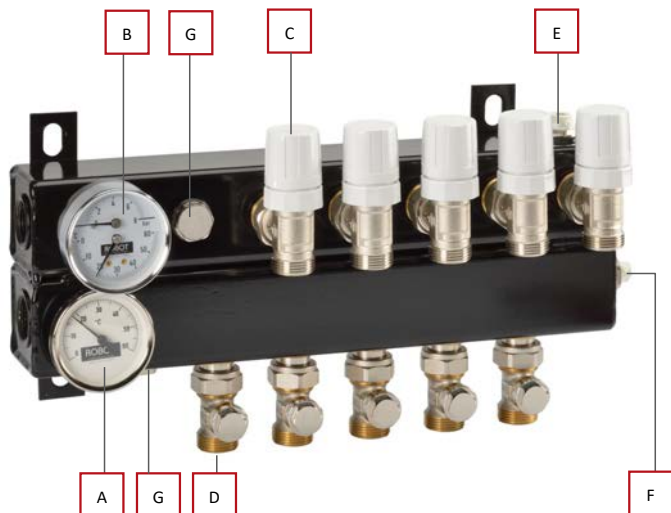
### 3.3.3 General Optimum Flow PRO

PRO manifolds, suitable for connection to both high and low temperature heating source. When connected to a low temperature heating source, the mass flow should be primarily enlarged to provide sufficient heating power. The PRO manifolds are equipped with an LTV control valve, which makes it possible to regulate return water flow.

With the flow meters the number of liters per minute are easily monitored. The single adjustable flow valves (G) help to fill the underfloor heating system efficiently.

## 3.4 LT manifold

### 3.4.1 Parts list/functional overview and specifications



- A. Insert temperature gauge for underfloor return water
- B. Robot pressure/temperature gauge 0-8 bar/0-60°C for underfloor supply water
- C. Thermostatic valve (M30 x 1.5), double adjustable, eurocone connection, for under floor return water
- D. Robot single adjustable flow valve (1/2" x 3/4" eurocone)
- E. Manual air bleed valve
- F. Manual air bleed valve
- G. Blanking cap

### 3.4.2 Application

The Robot LT manifold, without a pump, is a steel manifold that is suitable for systems with a low temperature supply where a central pump is present.

- Suitable for heat pumps and boilers with limited temperature setting, with an external pump if required
- Low-temperature system: up to 50°C supply (primary)
- Available 2-20 groups
- Available with connection on both left and right (can be changed into cross-connection)

### 3.5 Setting of the PRO-valve on Standard & Optimum Flow manifolds

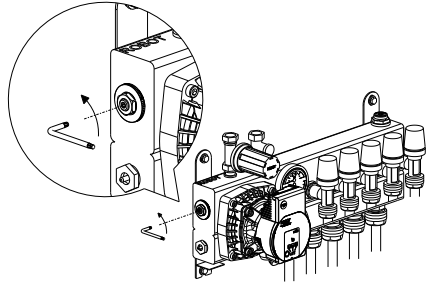
Setting of the PRO-valve on Standard and Optimum Flow manifolds

When fully closed (clockwise) there will be no mixture of flow and (underfloor) returnwater. This setting can be used for sourcetemperatures to about 40°C. \*

When fully open (counterclockwise in factorysetting) there will be mixture of the flow and (underfloor) returnwater. This setting can be used for sourcetemperatures from 55 – 80°C.

The setting is done by means of an Allan-key. The more you close the valve in this way, the less mixture there will be, hence the lower the sourcetemperature can be.

\*We recommend to leave the PRO valve a bit open to be sure of circulation. (One rotation is enough)



## 3.6 Pumps

### Pay attention:

The pump must always be plugged into the power\*\* outlet (grounded wall socket) if the manifold is completely filled. This also applies if the manifold is primarily not yet connected (for example to the boiler).



### 3.6.1 Wilo Para HU 25/6-43/SCU

The manifolds of Robot Vloerverwarming B.V. are equipped with a composite Wilo\* pump house. The pump housing is mounted stress-free on the manifold to avoid annoying pump noise.



\* See the appendix for the Wilo Para **HU 25/6-43/SCU** manual.

\*\* THIS WILL PREVENT DAMAGE TO THE PUMP, WHICH WILL VALIDATE THE GUARANTEE.



# 4. Storage and transport

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## 4.1 Storage

Keep the manifolds in their original packaging until installation is started.

The manifolds must be stored safely in a dry, ventilated area and not be exposed to direct sunlight. The packaging is not weather-resistant.

The manifolds must be stored frost-free.

## 4.2 Transport

Ensure that the manifold in its packaging is exposed to vibrations as little as possible during transport. Transport/move the packaging carefully.

**PLEASE NOTE** the ergonomic conditions such as lifting, bending, reaching, etc. when working with the manifolds.

# 5. Mounting preparation

## 5.1 Mounting conditions

### 5.1.1 Requirements for the mounting area of the manifold

The mounting area must meet the following conditions:

1. Proper access to the system components
2. Room around the manifold to carry out work
3. The mounting area is frost-free
4. The mounting area is provided with a water filling point
5. The mounting area is provided with a lighting point
6. The mounting area is provided with an earthed wall socket.
7. The mounting area is provided with a water outlet

#### Location of the manifold

- Place the manifold in a dry, well-vented, centrally located area in the house.
- **PLEASE NOTE:** The manifold should not be placed in the fuse box.
- If the manifold is equipped with a pump, it should not be placed in or against the wall of a bedroom or living room. When the pump is operational, it might cause a small vibration noise. A good location for the control unit could be the hall, pantry or garage.
- Do not place the manifold onto a partition of a light construction.
- Place the manifold in an easily accessible place because of possible maintenance work.

#### The location of the manifold must be:

- Dry and Dust- and frost-free
- Free from vibrations
- Adequately lit
- Free from combustible materials
- Free from explosive gases.

#### Installation of the manifold

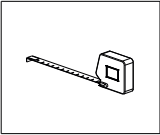
- Place the manifold 50 to 60 cm above the floor so that the piping can be easily connected.  
**PLEASE NOTE:** The distance from the bottom of the manifold to the top of the finished floor must be at least 30 cm.
- Mount the manifold at a sufficient height to be able to 'gradually' bent towards or mount to/ on the manifold to prevent the pipe from buckling. It is recommended to use floor bends.
- Mount the manifolds on a flat non-combustible/heat-resistant wall with sufficient carrying capacity. Ensure that the surface is clean and dry.

- When performing mounting work below the surface to be heated, the manifold must always be placed above the level of the to be heated surface for venting purposes.
- The manifold must be mounted to the wall in a level position so that the venting point can be used optimally.
- Always mount the manifold with the supplied rubber silencers to limit noise/vibrations as much as possible.
- The manifold is exclusively intended for mounting on a wall with the help of the supplied bolts and plugs. The manifold can also be mounted on a console.
- Ensure that all fasteners are properly tightened. Check if all fasteners are in the right place.

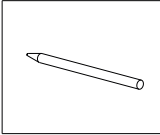
## 5.2 Tools overview

Tools required for mounting the manifold and the piping:

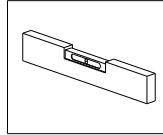
Tape measure



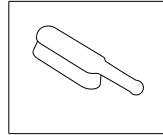
Pencil / marker



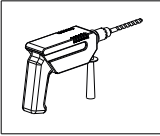
Level



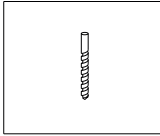
Brush



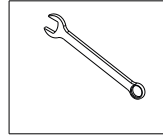
Drilling machine



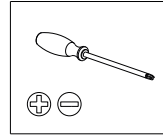
Drill



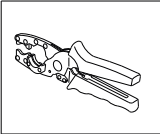
Open-end wrench



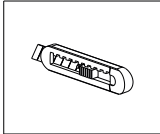
Screwdrivers



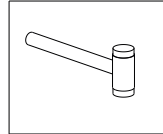
Pipe cutter



Stanley knife



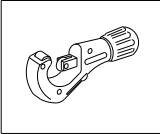
Hammer



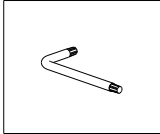
Cloth



Pipe cutter  
copper/steel



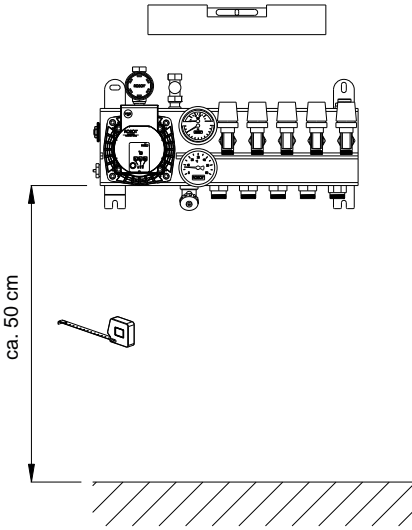
Allen key (4 mm)



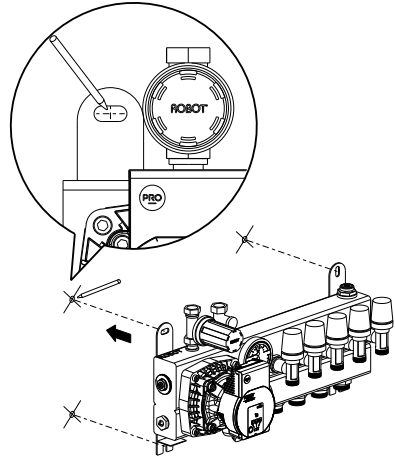
# 6. Installing/mounting

## 6.1 Mounting of manifold

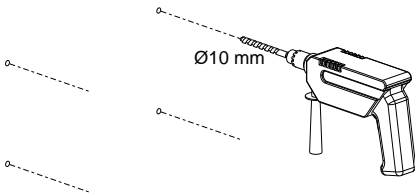
1. Position the manifold level against the wall at a height of approx. 50 cm from the floor.



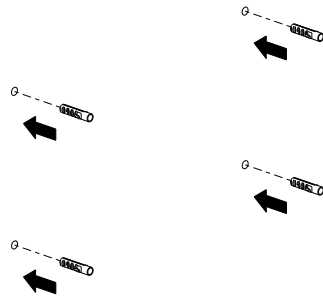
2. Mark the positions of the mounting holes of the manifold with a pencil/marker on the floor.



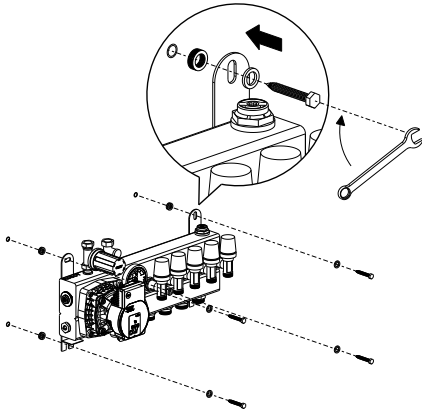
3. Drill the mounting holes in the wall.



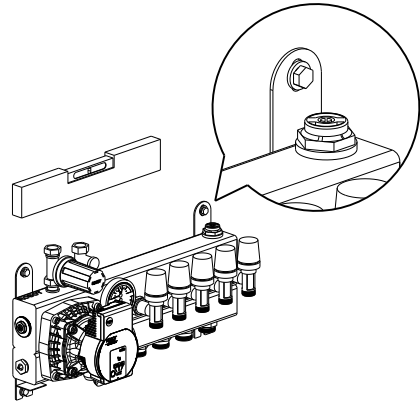
4. Place the plugs in the mounting holes.



**5.** Place a rubber silencer behind the suspension points of the manifold. Insert the mounting bolts (including washer) through the suspension points (and silencers) in the wall.

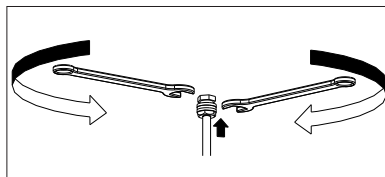
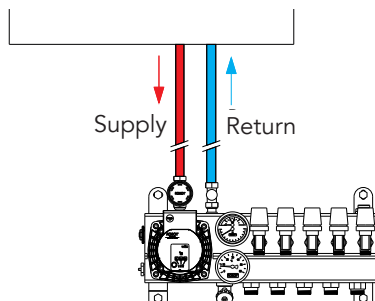


**6.** Fix the manifold with the bolts to the wall. Self-level the manifold. Tighten the bolts until the rubbers are completely embedded without deforming them. Check if the rubber silencers can still be pressed lightly.



## 6.2 Connecting the manifold to the boiler/heating source

- The supply pipe of the boiler must be connected to the supply valve of the manifold.
- The return pipe of the boiler must be connected to the return valve of the manifold.



**The primary piping must be connected with suitable tools.**

The supply and return piping must have sufficient capacity; it applies in general that:

1. manifolds 1 to 4 groups: minimum diameter of 15 mm with maximum 6 metres of supply and return piping from the heat source (if you use a multi-layer pipe: 20 mm)
2. manifolds 5 to 10 groups: minimum diameter of 22 mm with maximum 14 metres of supply and return piping from the heat source (if you use a multi-layer pipe: 25/26 mm)
3. manifolds 11 to 15 groups: minimum diameter of 28 mm with maximum 16 metres of supply and return piping from the heat source (if you use a multi-layer pipe: 32 mm)

**PLEASE NOTE:** If radiators are connected to the same supply and return pipe, account should be taken of whether the diameter of the pipe is sufficient.

## 6.3 Connecting the underfloor heating pipe to the manifold with integrated pump

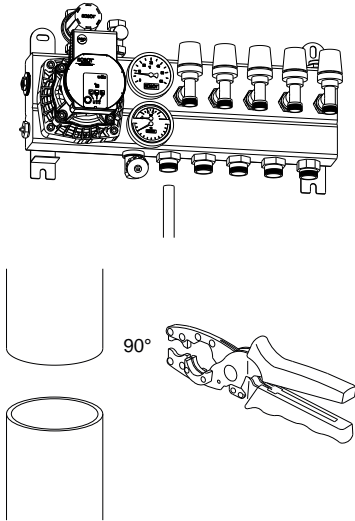
We recommend to limit the maximum length of the underfloor heating pipe to:

1. Approx. 100 metres per group on application of a 16 x 2 mm, 18 x 2 mm or 20 x 2 mm pipe.
2. Approx. 90 metres per group on application of a 14 x 2 mm pipe.
3. Approx. 65 metres per group on application of a 10 x 2 mm or 12 x 2 mm pipe.

\* the length of the piping can deviate for industrial floors. The above recommendations only serve as a guideline.

If several groups are used, we also recommend to put the pipes with the same length together as much as possible. If the pipes vary widely in length per group, we recommend to mount flowmeters under the group valves; see 'putting into operation/setting the manifold'.

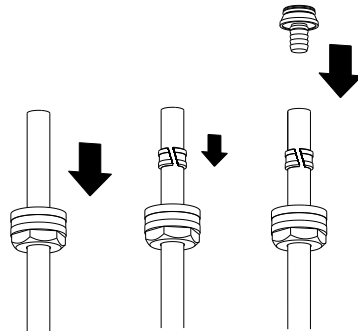
**1.** The underfloor heating pipe must be cut straight and the pipes must be de-burred.



**2.** Slide the union nut approx. 10 cm over the underfloor heating pipe.

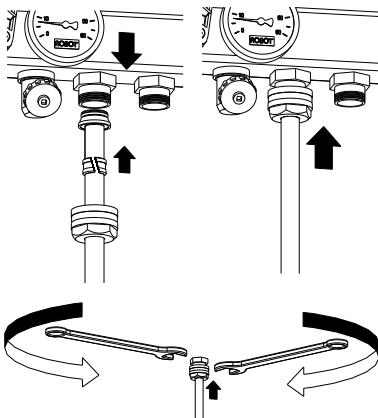
**3.** Place the clamping ring on the pipe and slide it a few centimetres.

**4.** Insert the adapter or socket into the pipe and push to the end.



**5.** Move back the clamping ring to the adapter.

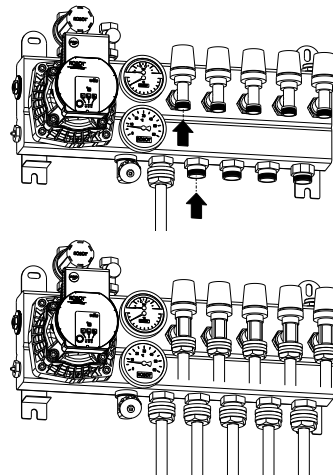
**6.** Then screw the pipe onto the supply fitting and put the relevant group together in the floor or in the wall.



Always use two flat open spanners. Turn the spanners counter-clockwise.

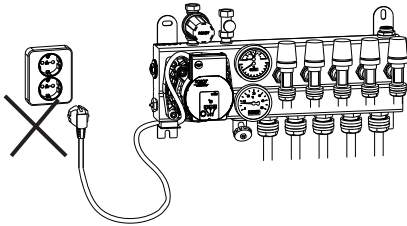
**7.** Connect the end of the group to the mentioned group valve with the help of a pipe fitting (as previously described).

**8.** Repeat the above procedure if there are several groups.

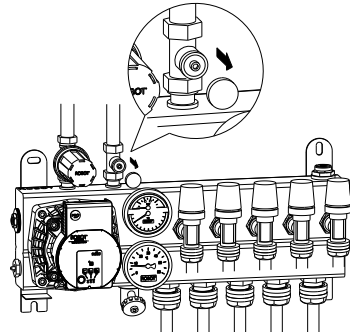


## 6.4 Filling and venting the underfloor heating system

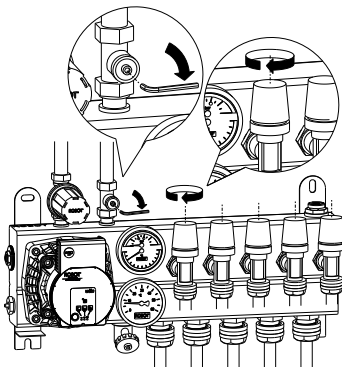
1. Ensure that there is no power on the pump until the system is completely filled.



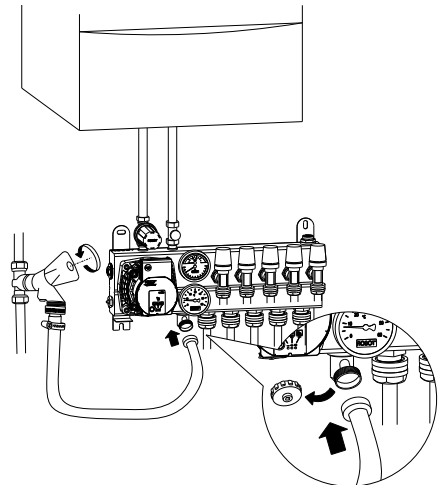
2. Remove the cover cap from the return valve.



3. Close the supply and return valve; also close all group valves.

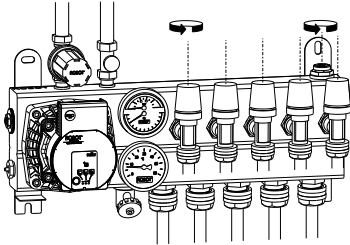


4. Connect a filling hose and start the filling by opening the water and filling tap.

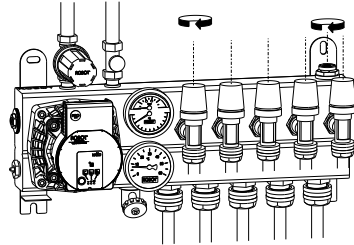




5. If there is sufficient pressure in the underfloor heating system, you can vent each group separately by opening the group valve and venting through the venting point at the same time.



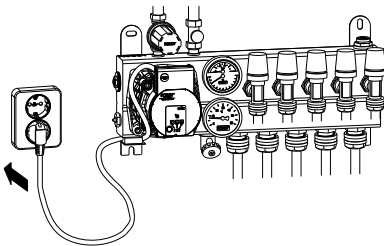
6. Close the group valve concerned after venting is completed and repeat this procedure for any following groups. After all groups and manifold have been fully vented, make sure that there is sufficient pressure left in the system.



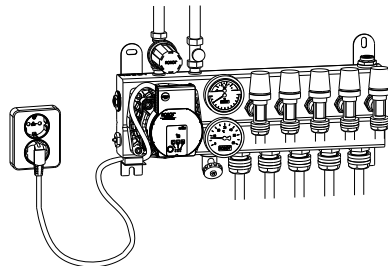
7. Put the plug into the earthed wall socket after filling and venting the system.

NOTICE:

Pump must be vented. Check appendices Wilo Para HU 25/6



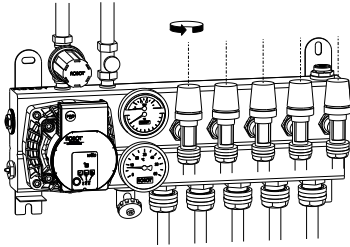
#### Schematic total overview



# 7. Commissioning/decommissioning

## 7.1 Putting into operation/setting the manifold

1. Open the group valve. If the group lengths vary widely, the groups must be set separately (mounting flowmeters under the group valves will make it easier to set each group separately).

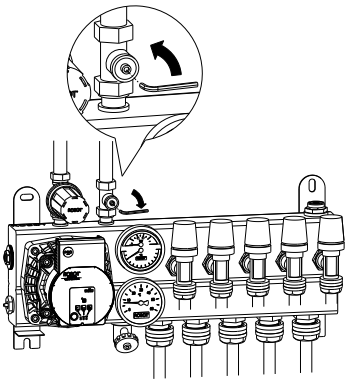


2. The return valves are provided with a pre-set function. You can remove the white manual handle to set the volume flow by using the pre-set function. You can use the same key that you have used for venting the manifold.

3. When leaving the factory, the pump is by default set in its recommended position, namely 'Autoadapt'. This setting is suitable for most systems.

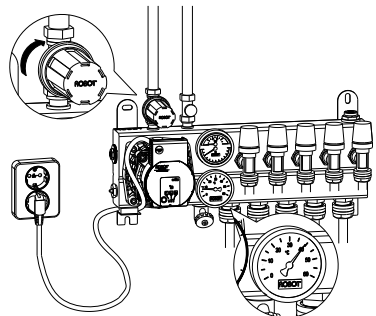
If required, you can customise the setting of the pump in accordance with the instructions set out in the appendix.

4. Open the return valve.



6. Gradually open the thermostatic control of the supply water by approx. 5°C per week until it reaches the required underfloor water temperature (usually 40°C).

7. The floor supply temperature can be read from the thermo-mano gauge. The floor return temperature can be read from the temperature gauge.

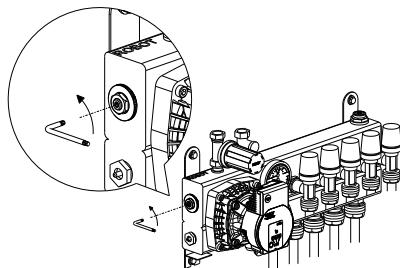


## 7.2 Setting of the PRO-valve on Standard and Optimum Flow manifolds

When fully closed (clockwise) there will be a minimum mixture of flow and (underfloor) returnwater. This setting can be used for sourcetemperatures to about 40°C\*

When fully open (counterclockwise in factorysetting) there will be mixture of the flow and (underfloor) returnwater. This setting can be used for sourcetemperatures from 70°C.

The setting is done by means of an Allan-key. The more you close the valve in this way, the less mixture there will be, hence the lower the sourcetemperature can be.



\*We recommend to leave the PRO valve a bit open to be sure of circulation. (One rotation is enough)



### (\*1) ATTENTION:

When first put into operation, the heat must gradually be brought into the underfloor because of the linear expansion of the screed and the risk of cracking.

Advice: Use edge isolation all around to counterbalance the linear expansion of the floor during warming up.

Robot manifolds are standard delivered in a hydraulically neutral design (in other words no pressure difference between the supply and return primary).

When exchanging the pump, if required, account should be taken that only the socket head screws will be unscrewed. Any form of guarantee will lapse if changes are made to the nickelplated socket head screws in the pumping house (back-panel).

**PLEASE NOTE:** THE PUMP MUST ALWAYS BE RUNNING WHEN THE SYSTEM IS FILLED. This will prevent damage to the pump, which will invalidate the guarantee.

### Additives:

The addition of chemicals (water descalers or detergents etc.) to the boiler water can adversely affect the lifetime of the system or even damage it. An exception to this is mono-ethylene Glycol (rate of maximum 30% Glycol). This additive is used if the underfloor heating is mounted outside i.e. driveway heating.



### Mounting actuators, optional:

Actuators can be used in combination with a room control. It will then be possible to control each area separately. Remove the handwheel of the thermostatic valve (white cover) and mount the Robot actuator 24 or 230 Volt.

## 8. Maintenance & Service

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We recommend to frequently clean the manifold.

- For your own safety, remove the power from the manifold before you start cleaning it.
- Clean the manifold with a damp soft cloth and/or a tried and tested neutral detergent. Do not use any aggressive detergents and/or abrasives.
- The manifold must be checked on connections and damage at least once a year. Repair the defects immediately, such as loose connections.
- Repairs and maintenance of manifold components may only be performed by qualified employees.

# 9. Failures

## 9.1 Troubleshooting

Failure	Possible cause	Solution
Underfloor heating is not heating up	There is no heat demand	Create heat demand by raising the temperature of the room thermostat.
	Thermostatic valves are closed	Open the thermostatic valves
	Pump is not running	See "putting into operation"
Central heating supply is hot but the floor is not heating up.	Insufficient flow to the manifold (primary)	<p>1. Use the pipe with the right diameter and length (see connecting the manifold to the central heating system)</p> <p>2. Check the temperature of the supply pipe on the side of the central heating. This should indicate the temperature mentioned in Chapter 3 for the relevant type.</p>
	Trapped air in the underfloor heating system	Check if there is no air left in the system and vent
	Pump is not running	See putting into operation and the explanation on pumps
Temperature of the floorheating too high.	Thermostatic control is too high	Lower the temperature on the thermostatic control
	Thermostatic valves are not set	Set thermostatic valves (see putting into operation/ setting the manifold).
Pump makes a noise	Trapped air in the circuit	Vent the pump. NOTICE: Pump must be vented. Check appendices Wilo Para HU 25/6

## 10. Environment/waste disposal

Dispose of the product according to local legislation and regulations.

## 11. Guarantee

The guarantee is in accordance with the guarantee conditions and the general terms and conditions of Robot Vloerverwarming B.V. These can be found on the website: [www.robotclimate.com](http://www.robotclimate.com).

## 12. Contact

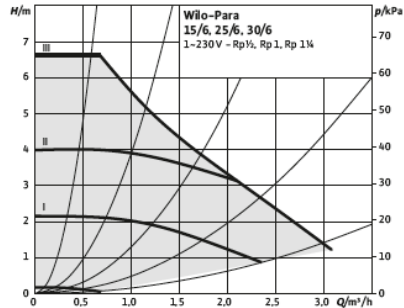
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# Appendices

## Wilo Para HU 25/6-43/SCU Manual



### Constant differential pressure $\Delta p$ -c (I, II, III)

Recommended for underfloor heating or for large-sized pipes, applications without a variable pipe network curve (e.g. storage charge pumps) or single-pipe heating systems with radiators. The control keeps the set delivery head constant irrespective of the pumped volume flow. There are three pre-defined pump curves (I, II, III) to choose from.

Setting I = 2 metre (20kPa);

Setting II = 3 metre (30 kPa) advised setting for group lengths up to 90 metre each;

Setting III = 4,5 metre (45 kPa) advised setting for group lengths up to 120 metre each.

### Venting



Fill and vent the system correctly.

If the pump does not vent automatically:

- Activate the pump venting function via the operating button: press and hold for 3 seconds, then release.
- The pump venting function is initiated and lasts 10 minutes.
- The top and bottom LED rows flash in turn at 1 second intervals.
- To cancel, press and hold the operating button for 3 seconds.

**NOTICE: After venting, the LED display shows the previously set values of the pump.**

### Setting the control mode



The LED selection of control modes and corresponding pump curves takes place in clockwise succession.

- Press the operating button briefly (approx. 1 second).
- LEDs display the set control mode and pump curve.

The following shows the various possible settings, beginning with the factory setting:

	LED display	Control mode	Pump curve
1		Constant speed	II
2		Constant speed	I
3		Variable differential pressure $\Delta p-v$	III
4		Variable differential pressure $\Delta p-v$	II
5		Variable differential pressure $\Delta p-v$	I
6		Constant differential pressure $\Delta p-c$	III
7		Constant differential pressure $\Delta p-c$	II factory setting
8		Constant differential pressure $\Delta p-c$	I
9		Constant speed	III

• Pressing the button for the 9th time returns to the factory setting (constant speed / pump curve II).

### Activating factory setting

The factory setting is activated by pressing and holding the operating button whilst switching off the pump.

- Press and hold the operating button for at least 4 seconds.
- All LEDs flash for 1 second.
- The LEDs for the last setting flash for 1 second.

When the pump is switched on again, the pump runs using the factory settings (delivery condition).



## Lock / Unlock



- To activate the key lock, press and hold the operating button for 8 seconds until the LEDs for the selected setting briefly flash, then release.
- LEDs flash constantly at 1-second intervals.
- The key lock is activated: pump settings can no longer be changed.
- The key lock is deactivated in the same manner as it is activated.

**NOTICE: All settings/displays are retained if the power supply is interrupted.**

## Faults, causes and remedies

Faults	Causes	Remedy
Pump is not running while power supply on	a. Electrical fuse defective b. No voltage supply at pump	a. Check fuses b. Rectify the power interruption
Noisy pump	c. Cavitation due to insufficient suction pressure	c. Increase system pressure within permissible range c. Check thermostatic control and set it to a lower temperature if necessary
Building does not warm up	d. Thermal output heating surfaces is too low	d. Increase setpoint d. Change control mode from $\Delta p$ -c to $\Delta p$ -v

LED	Faults	Causes	Remedy
lights up red	1. Blocking 2. Contacting/winding	1. Rotor blocked 2. Winding defect	Activate manual restart or contact customer service
flashes red	3. Under/over voltage 4. Excessive module temperature 5. Short-circuit	3. Power supply too low/high on mains side 4. Module interior too warm 5. Motor current too high	Check mains voltage and operating conditions, and request customer service
flashes red/green	6. Generator operation 7. Dry run 8. Overload	6. Water is flowing through the pump hydraulics, but there is no mains voltage at the pump 7. Air in the pump 8. Sluggish motor, pump operated outside specs. Speed lower than normal.	Check the mains voltage, water quantity/pressure and the ambient conditions

WILO SE declares that the products mentioned in this statement comply with the provisions of the following European directives as well as to the national laws in which these provisions have been adopted:

Low voltage 2014/35 / EU; Electromagnetic Compatibility 2014/30 / EU; Energy-related products 2009/125 / EC

# Appendices

## Wilo Para

### EU/EG KONFORMITÄTSERKLÄRUNG DECLARATION DE CONFORMITE UE/CE EU/EC DECLARATION OF CONFORMITY

Als Hersteller erklären wir unter unserer alleinigen Verantwortung, daß die Nassläufer-Umwälzpumpen der Baureihen,  
*Nous, fabricant, déclarons sous notre seule responsabilité que les types de circulateurs des séries,*  
*We, the manufacturer, declare under our sole responsibility that these glandless circulating pump types of the series,*

**Para AB\*/4-20/\***

**Para AB\*/6-43/\***

**Para AB\*/7-50/\***

**Para AB\*/8-75/\***

*(Die Seriennummer ist auf dem Typenschild des Produktes angegeben / Le numéro de série est inscrit sur la plaque signalétique du produit / The serial number is marked on the product site plate)*

in der gelieferten Ausführung folgenden einschlägigen Bestimmungen entsprechen:  
*dans leur état de livraison sont conformes aux dispositions des directives suivantes :*  
*In their delivered state comply with the following relevant directives:*

- \_ **Niederspannungsrichtlinie 2014/35/EU**
- \_ **Basse tension 2014/35/UE**
- \_ **Low voltage 2014/35/UE**
  
- \_ **Elektromagnetische Verträglichkeit - Richtlinie 2014/30/EU**
- \_ **Compatibilité électromagnétique 2014/30/UE**
- \_ **Electromagnetic compatibility 2014/30/EU**
  
- \_ **Energieverbrauchsrelevanter Produkte - Richtlinie 2009/125/EG**
- \_ **Produits liés à l'énergie 2009/125/CE**
- \_ **Energy-related products 2009/125/EC**

*Nach den Okodesign-Anforderungen der Verordnung 641/2009 für Nassläufer-Umwälzpumpen, die durch die Verordnung 622/2012 geändert wird  
suivant les exigences d'éco-conception du règlement 641/2009 pour les circulateurs, amendé par le règlement 622/2012  
This applies according to eco-design requirements of the regulation 641/2009 for glandless circulators amended by the regulation 622/2012*

und entsprechender nationaler Gesetzgebung,  
*et aux législations nationales les transposant,*  
*and with the relevant national legislation,*

sowie auch den Bestimmungen zu folgenden harmonisierten europäischen Normen:  
*sont également conformes aux dispositions des normes européennes harmonisées suivantes :*  
*comply also with the following relevant harmonised European standards:*

**EN 60335-2-51**

**EN 16297-1**  
**EN 16297-3**

**EN 61000-6-1:2007**  
**EN 61000-6-2:2005**

**EN 61000-6-3+A1:2011**  
**EN 61000-6-4+A1:2011**

Aubigny-sur-Nère, 11/10/2017

  
**S.BORDIER**  
**Quality Manager**

N°4224933.01 (CE-A-S n°4530300)

**wilo**

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