



# Troubleshooting Guide

THERMOSYSTEM™ UNDERFLOOR HEATING

Version 2303

# CONTENT

We hope this instruction will be helpful in troubleshooting when the underfloor heating system, in whole or in part, does not deliver heat as it should. If you are a home owner and cannot or do not want to troubleshoot yourself, we recommend that you contact the company that installed your system.

01. THE WHOLE UNDERFLOOR HEATING SYSTEM IS COLD

1.1 Ensure that the room control is working.....

1.2 Control the heat source.....

1.3 Vent the heating system.....

4

5

5

02. GENERALLY COOL (NOT COLD) INDOORS

2.1 Ensure that the room control is working.....

2.2 Check the temperature drop in the manifold.....

7

7

03. UNEVEN INDOOR TEMPERATURE

3.1 Varying indoor temperature.....

3.2 Cool indoors at certain outdoor temperatures.....

3.3 Cold after using fire place.....

3.4 Cold - one loop (one room).....

3.5 Cold - several loops (several rooms).....

9

9


9

9

10

04. CONTACT AND ORDER

12

Thermotech

2

# 01.

**THE WHOLE  
UNDERFLOOR  
HEATING SYSTEM  
IS COLD**



# 01. THE WHOLE UNDERFLOOR HEATING SYSTEM IS COLD

## 1.1

### Ensure that the room control calls for heat and that the actuators are open

Start by turning up all room thermostats and checking that all actuators opens up. Below you can see how our actuators look over the years in open and closed positions and which actuator replaces them. In the case of wireless room control, the receiver unit's NO/NC setting may need to be checked. Also read sections 3.4 and 3.5.

#### CLOSED

#### OPEN

Year: 2017 -

Article no: 67024



Our current actuator. It can replace actuators on all our older manifolds, except manifolds from Petinarolli (year 2001 - 2005).

Year: 2011 - 2016

Article no: 67034



Replaced by our current actuator.

Year: 2005 - 2010

Article no: 67024



Replaced by our current actuator.

Year: 2005 -

Article no: 37231-024



Möhlenhoff actuator for Petinarolli manifold.

This actuator remains in our assortment, so if a replacement is needed, an identical one is ordered. The adapter ring is retained from the broken actuator. If the adapter ring is missing, a new one can be ordered (article no. 37230-P).

Year: 2000 - 2004

Article no: 37230-024



Möhlenhoff actuator with adapter ring for Petinarolli manifold in brass with integrated valves. Replaced by actuator with article no. 37231-024.

The adapter ring is retained from the broken actuator. If the adapter ring is missing, a new one can be ordered (article no. 37230-P).

**Year:** Before 2000



Möhlenhoff actuator with adapter ring for Kilimi's brass manifold (the valves are located under the manifold extensions).

Alt 1: Replaced by actuator 37231-024. The adapter ring is retained from the broken actuator.

Alt 2: Replaced by our current actuator (67024) and the adapter is removed.



**Watch video to see how to troubleshoot, order and replace your actuator**

Scan the QR-code or use the link.



**Youtube link** (copy and paste into web browser):

<https://youtu.be/F3VYZudLXu8>

## 1.2

### **Check that the heat source produces enough hot water**

Normally, the heat source produces hot water with a temperature that relates to the prevailing outdoor temperature according to a preset heating curve. Simply put, you can say that warmer water is produced at a lower outdoor temperature and the level is adjusted with different curve settings.

If all actuators are open and it still does not get warm enough in the house, you can adjust the curve upwards so that warmer water is produced. How warm it should be depends on the house's geographical location, wind conditions, how well it is insulated etc. Setting the heating curve for the house in question should be expected to initially have to be done.

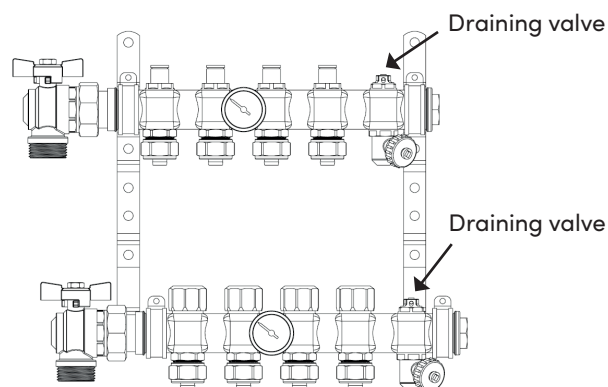
*If you need help setting up or adjusting the heat curve, we recommend that you contact the installer / supplier of the heat source.*

## 1.3

### **Drain the heating system of air**

A heating system can collect air in many different places and normally in high points. Therefore, the system should be drained of air at high points where there are vents. In the underfloor heating system, the underfloor heating manifold is normally the highest point and therefore draining valves are available there - see picture.

If there is air in the system, you can hear it rippling/bubbling in some cases. With air in the sys-



tem, there is poor, or no, circulation of the water, which for the underfloor heating system in particular results in heat only being available up to the flow loop of the manifold, while the return loop is cold, or maintains the current room temperature.

Draining of air takes place in principle in the same way as venting a radiator. Using the same key, or the back of the filler cap on the manifold, loosen the draining valve carefully and, if necessary, air is released until only water comes out. The top part of the draining valve, the white part, can be turned so that the drainage hole comes out and you can hold a cup and cloth under it to take care of the water that comes.

Normally, the difference between flow and return loops should be about 5 degrees. On the extensions of the manifold, flow and return, there are normally thermometers where you can check the temperature difference. Otherwise, you have to use your own measuring equipment to check the temperatures to and from the manifold, e.g. IR thermometer.

# 02.

**GENERALLY  
COOL (NOT COLD)  
INDOORS**



## 02. GENERALLY COOL (NOT COLD) INDOORS

### 2.1

**Ensure that the room control calls for heat and that the actuators are open**

Start by turning up all room thermostats and checking that all actuators opens up – see section 1.1.

***If the difference is lower than 5°C, the problem is likely that the flow temperature is too low.***

Lower the pump speed centrally or balance the manifolds between each other so that they maintain the same temperature drop.

### 2.2

**Check the temperature drop of the manifold**

If all thermostats call for heat and the actuators are open, the temperature drop across the floor heating distributor needs to be checked. The aim is to maintain a temperature difference of about 5 degrees between flow and return.

The pump speed is changed in the heat source and the approach may vary from unit to unit. Check the manual for the heat source or seek help from the supplier/installer of the heat source.

Balancing of manifolds between each other should be carried out by the installer and preceded by a calculation.

On the extensions of the manifold, flow and return, there are normally thermometers where you can check the temperature difference. Otherwise, you have to use your own measuring equipment to check the temperatures to and from the manifold, e.g. IR thermometer.

***If the difference is higher than 5°C, the problem is likely that the total flow is too low.***

To reduce a high difference between flow and return, due to a flow that is too low, the pump speed in the heating system must be increased. Alternatively, balancing of the manifolds may be necessary. This can be detected if one of the manifolds has a low temperature difference and one has a high one.



**Watch video to see how to troubleshoot, order and replace your actuator**

Scan the QR-code or use the link.



**Youtube link (copy and paste into web browser):**

<https://youtu.be/F3VYZudLXu8>

# 03. UNEVEN INDOOR TEMPERATURE



## 03. UNEVEN INDOOR TEMPERATURE



Watch video to see how to troubleshoot, order and replace your actuator

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### 3.1

#### Varying indoor temperature

If the indoor temperature varies a lot, the problem may be that the supply temperature from the heat source is too high. When the room thermostat closes the loop, the concrete has had time to become very hot and then continues to emit heat for some time, this causes an overtemperature in the rooms.

##### Action:

A cooler supply temperature results in longer running times and a more even indoor temperature – see section 1.2.

*If you need help setting up or adjusting the heat curve, we recommend that you contact the installer/supplier of the heat source.*

### 3.2

#### Cool indoors at some outdoor temperatures, usually around 0°C outdoors

It is common for the cooling effect around 0°C to be enhanced by wind and the supply temperature from the heat source may therefore need to be raised slightly around this temperature.

##### Action:

Check the heat source's instructions to see if it is possible to "break the curve" by choosing the same supply temperature at 0°C as the curve gives at -5°C.

*If you need help setting up or adjusting the heat curve, we recommend that you contact the installer/supplier of the heat source.*

### 3.3

#### Cold after using the fireplace (floor heating embedded in concrete)

When burning in a fireplace, there is a great risk that the floor heating's room thermostat closes

the room's loops. If you fire for a longer time, the concrete has time to cool down. When the fire goes out and the room thermostat opens the floor heating loops again, the slab must be heated before the indoor temperature rises. This results in a temperature drop.

##### Action:

Raise the temperature of the room thermostat in connection with the fire. If possible, install a room thermostat with a floor sensor.

### 3.4

#### Cold – one loop (in one room)

Start by turning up all room thermostats and checking that all actuators opens up – see section 1.1.

#### 3.4.1

One or more actuators do not open

Check that the cables to the actuators that do not open and to the room thermostats are firmly attached. You can do that by pulling them a little lightly.

#### 3.4.2

One or more actuators do not open even though the thermostats call for heat and the connection of the actuator is correct

Feel the actuator with your hand – if it is warm but not open, it is broken and needs to be replaced. You can also unscrew the actuator on the loop in question – if the loop gets hot after a while, the actuator is broken.

*Tip! You can unscrew the actuator from the valve to get heat in the loop until a new actuator is procured.*

#### 3.4.3

All actuators open, but one loop is cold

Then one can suspect that the loop is controlled

from the wrong thermostat. Check the temperature of the return loops from the floor. Use a measuring device, e.g. an IR thermometer, or feel with your fingers. If any loop has been standing still for a long time, this is noticeable by the return quickly becoming colder than the others.

If one of the other rooms feels very hot, regardless of the thermostat setting, the probability is high that the rooms' thermostats are controlling each other's loops.

**Action:**

Replace the relevant actuators and see if the problem disappears.

In that case, no room is experienced as too hot.

**Action:**

Turn down the thermostat in the cold room to minimum and wait a few days. If two thermostats are mixed up, you will now "move the heat" from a previously warm room to the cold one. Then change the position of the actuator on the floor heating distributor.

### **3.5 Cold - multiple loops (in multiple rooms)**

Start by turning up all room thermostats and checking that all actuators opens up - see section 1.1.

#### **3.5.1**

**One or more actuators do not open**

Check that the cables to the actuators that do not open and to the room thermostats are firmly attached. You can do that by pulling them a little lightly.

#### **3.5.2**

**One or more actuators do not open even though the thermostats call for heat and the connection of the actuator is correct**

Feel the actuator with your hand. If it is warm but not open, it is broken and needs to be replaced. You can also unscrew the actuator on the loop in question - if the loop gets hot after a while, the actuator is broken.

Tip! You can unscrew the actuator from the valve to get heat in the loop until a new actuator is procured.

#### **3.5.3**

**All actuators open, but several loops are cold**  
Start by checking the floor heating drawing. The drawing with calculations should be in the underfloor heating cabinet.

If the room control is installed according to the drawing, one can suspect that the loops are connected to the wrong outputs.

**Action:**

Set all thermostats to maximum and check that all actuators opens up. After a while, the whole house should be warm. Now you have to close one loop at a time and wait until you have ascertained for sure where it will be cold.

Carefully note on both the drawing and the floor heating manifold which surface the loop serves. Then open the loop and close the next - repeat until all loops are located.

**Note!**

With underfloor heating embedded in concrete, it can take many hours for the concrete to cool down / heat up. This control is not possible at higher outdoor temperatures.

If the problem persists even though all loops are open and the actuators are on the correct loop output, the flow is probably not enough in some loops.

**Action:**

Contact your installer and ask them to check that the balancing valves on the manifolds flow extension loops are set according to Thermotech's calculations and the adjustment table. The drawing with calculations should be in the underfloor heating cabinet.

# 04. CONTACT AND ORDER



## 04. CONTACT AND ORDER



If you are a home owner and cannot or do not want to troubleshoot yourself, we recommend that you contact the company that installed your system.

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### ORDERING ACTUATORS ETC.

Thermotech does not sell directly to end consumers, but only B2B through companies, i.e. via an installation company, chain or shop.

We offer the following options:

- Contact your local installer and ask them to order from the nearest Thermotech Center.
- In Sweden you can order at your nearest Comfort or Bad & Värme store. Thermotech has nationwide agreements with both of these chains.
- In Sweden you can place your order at [www.vvsbutiken.nu](http://www.vvsbutiken.nu)