BENIFERRO

MANUAL

AUTOMATED THREE WAY VALVE
+
BENIFERROSOL

Produced by:
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Introduction

This manual explains the working of the Beniferrosol with the automated three way valve. The components are made in Belgium by Beniferro BV and are of the highest quality. The control-unit measures pool and EPDM temperature with 2 sensors and activates accordingly the three-way-valve.
The 3 way valve has gear wheels made of steel and are virtually unbreakable. If you in the rare occasion do experience trouble, please read our troubleshooting manual or contact your dealer.

Attention!

- Damage caused by not following these introductions is not covered by warranty.

- The J2-H series is suitable for voltages between 85-240V. With normal use it's not needed to remove the cap of the automatic 3-way valve. During proceedings you need to make sure the voltage is turned off. It is recommended to let the electrical installation be adjusted by a qualified technician.

- The automatic 3-way valve is controlled by micro switch. If the power supply is interrupted when the valve was opening or closing, the valve will stop. As soon as the valve receives power again, the valve will continue in the same position.

Assembly

1. Connecting the valve

The valve is connected to 3 tubes according to the connection scheme below. As the water enters the valve from the front, it is possible to have the solar heating to the left or to the right side of the valve by adjusting the wiring (see 4. Connecting the automatic valve with the Beniferrosol)

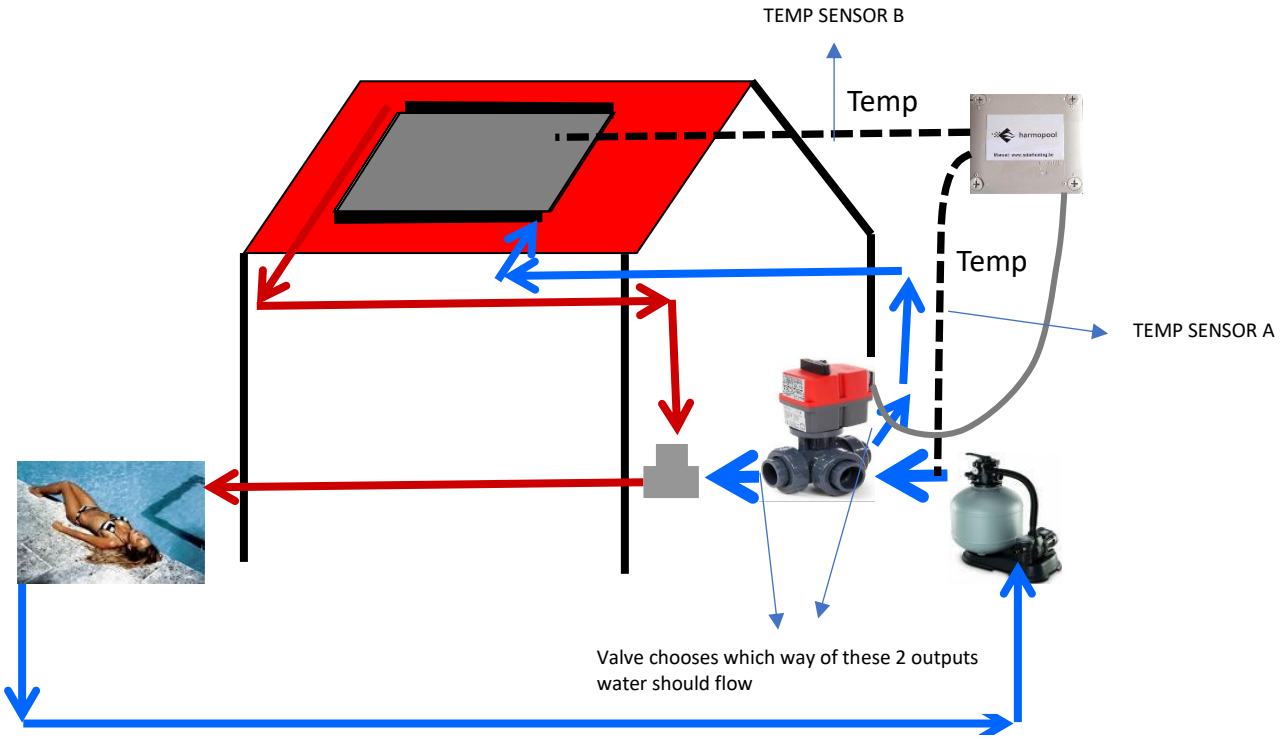


Figure 1

Warm water left

Warm water right

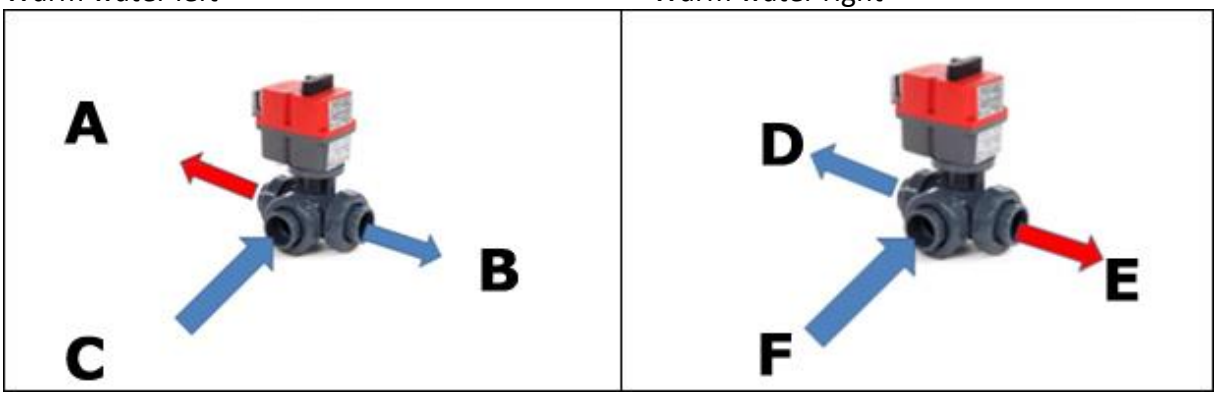


Figure 2

2. Temperature sensors of the Harmosol

The left temperature probe is used for the cold pool water thermometer (A). This temperature probe is put via a T-piece and a 1/2 inch teflon insert in the filter outlet. When first installing the Beniferrosol, the probes will not be attached and should be attached by yourself. Please connect the probes as in figure 3.

The right temperature probe is used for the solar heating air thermometer (EPDM side : B). The air thermometer should be on top of the EPDM solar panels fully exposed to the sun.

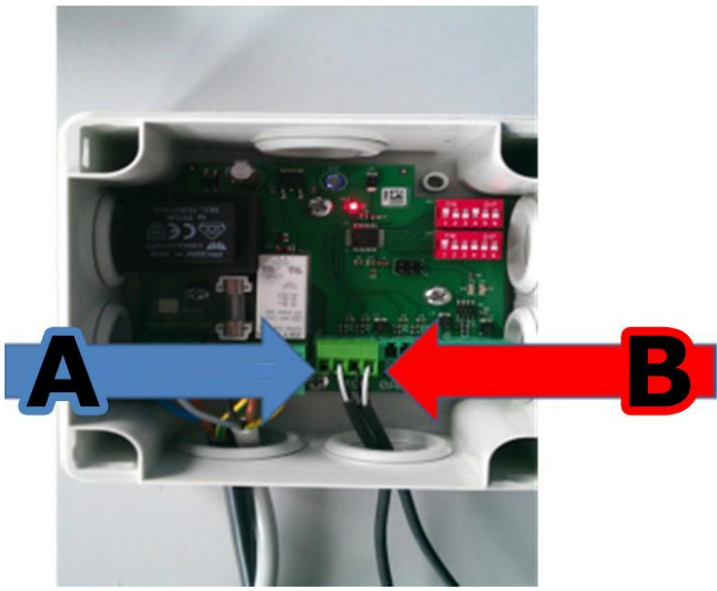


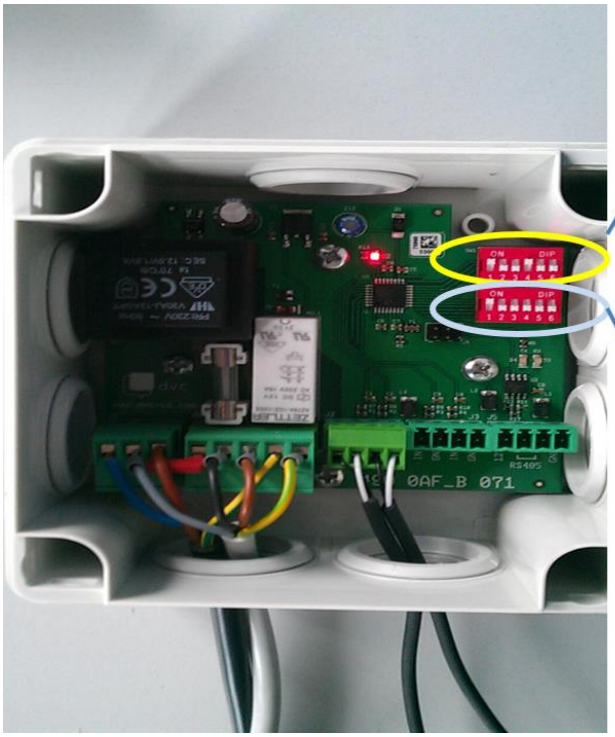
Figure 3

3. Setting the delta-temperature and maximum water temperature

On delivery, your Beniferrosol is pré-installed. The maximum pool temperature can be installed, this will be pré-set on 32 °C. Also the delta temperature can be set. This is the difference in temperature between the pool and the EPDM panels and is pré-set on 4°C. If you want to personalise the maximum and delta temperatures you can do so by following these steps:

Choose the maximum temperature difference between the outer air and the water (Yellow circle). Usually a difference of 4 degrees is chosen. In the example photograph below : when the outer air is more than 4°C warmer than the water, the automatic valve (or pump) will be activated and the will send pool water through the heating system.
To set the maximum pool water temperature, it is necessary to make sure the switch in the blue circle (left top) to position 1.
The maximum water temperature is then set on the bottom switches (blue circle)

Usually a max temperature of 32 degrees is chosen. In the example photograph below : when the pool water temperature is more than 32°C , the automatic valve (or pump) will be deactivated and the will Not send water through the heating system



Setting temp difference

0°C = 100000
1°C = 100001
2°C = 100010
3°C = 100011
4°C = 100100
5°C = 100101
6°C = 100110
7°C = 100111
8°C = 101000
9°C = 101001

Setting max temperature

22°C = 010110
24°C = 011000
26°C = 011010
28°C = 011100
30°C = 011110
32°C = 100000
34°C = 100010

Figure 4

4. Connecting the automatic valve with the Harmosol

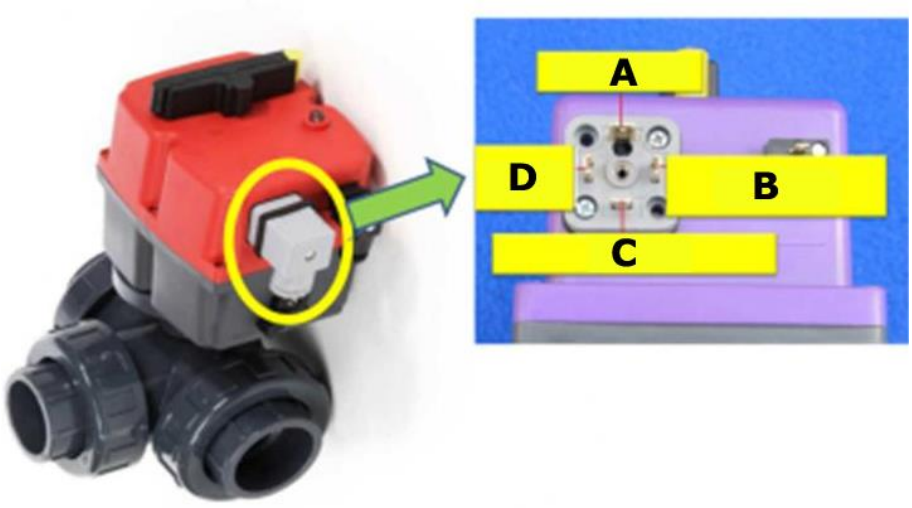


Figure 5

A	Earthing
B	Black
C	Brown
D	Blue or Grey

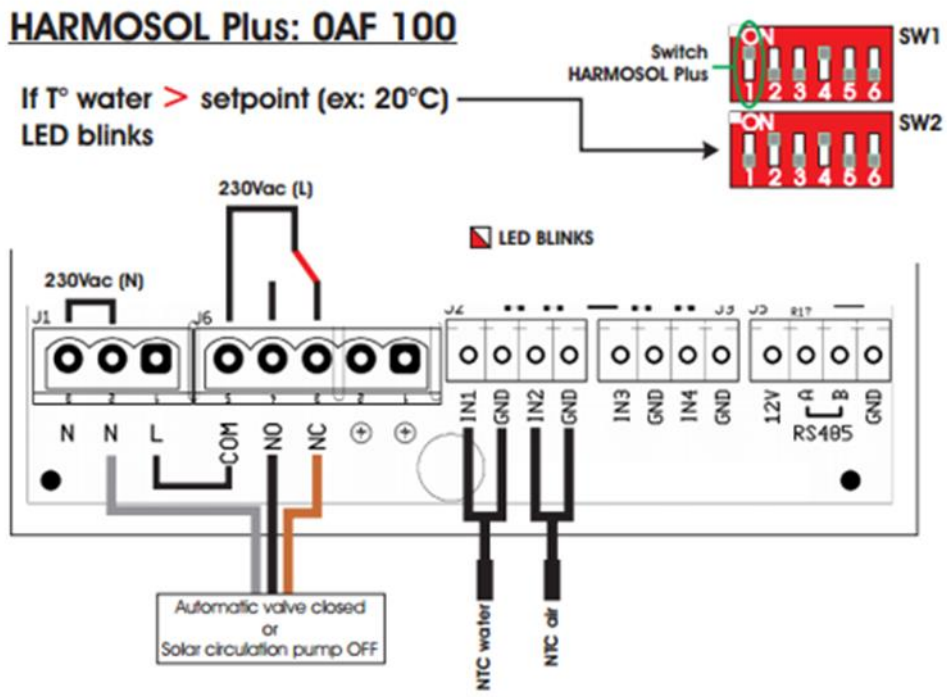
The Beniferrosol has been cabled beforehand, but this grey cable is not yet connected to the three-way-valve. In the picture above, you can find the instructions regarding the connections. In this case, the warm water will be sent to the left. By switching the black and brown wire, the warm water will be sent to the right. The little black connecting cap is not used. The big grey cable connected to the Beniferrosol contains 4 small cables : a grey one, black, brown and yellow-green. Please connect them as shown in figure 5.

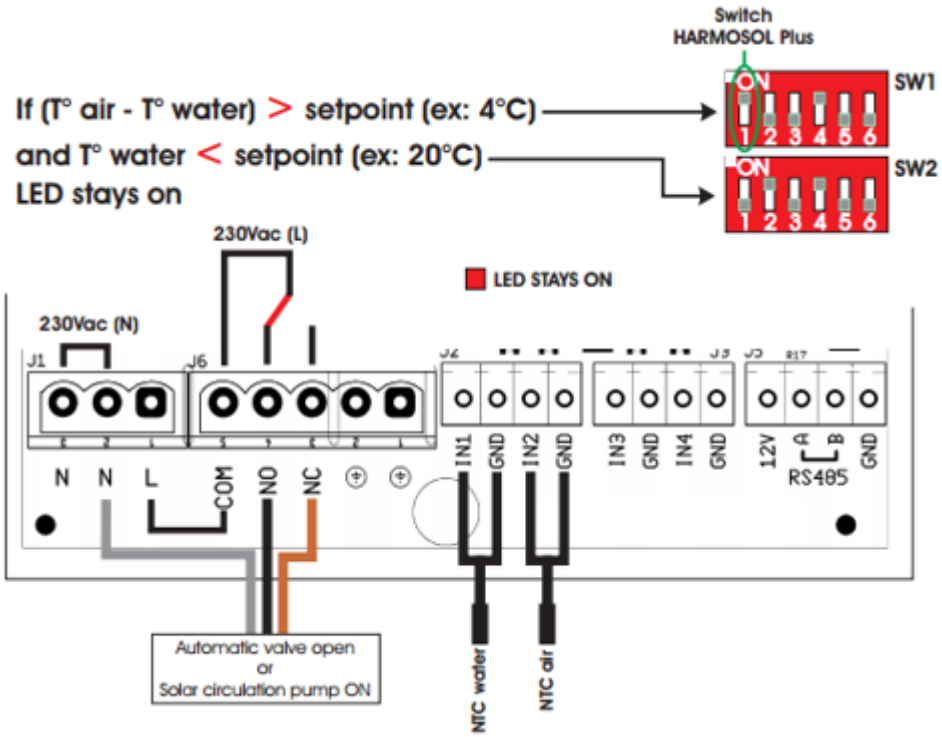
5. Connecting the Beniferrosol to a filter pump.

It is possible to control the flow through the solar heating system via a separate circulation system with pump, rather than via an automated valve.

In this case, the black and the grey cables are to be connected to the circulation pump. The remaining brown wire, needs to be isolated as it can be loaded with 240V.

6. Connection scheme of the Beniferrosol





What to do in case of power outage

The automatic 3-way valve can also be used to manually, for example during a power outage. This can be done by placing the levers on the side on MANUAL instead of AUTOMATIC.

AUTO = automatic operation
MAN = manual operation

Attention!: the difference between the positions AUTO and MAN isn't more than 10°. Do not use force to prevent