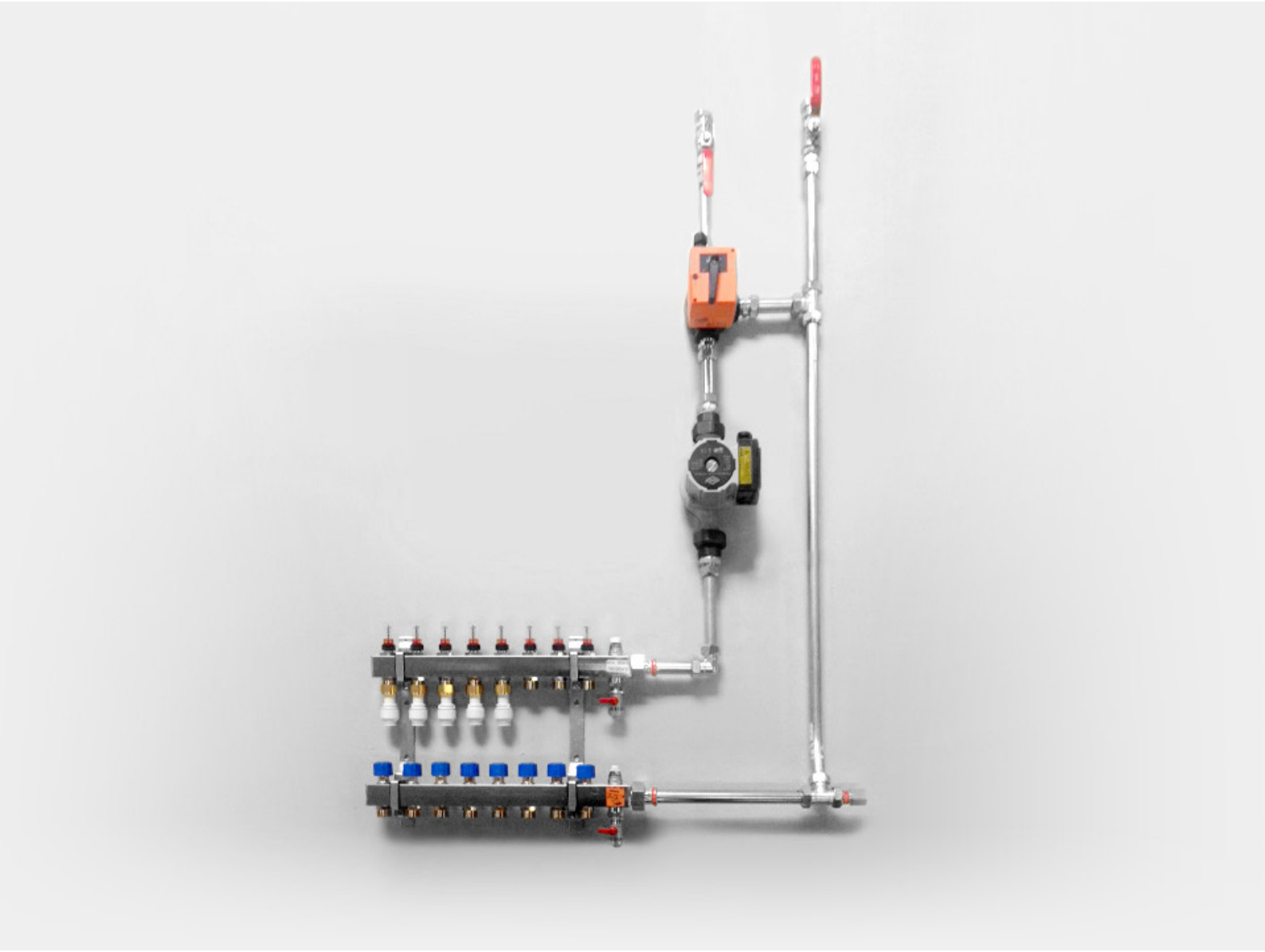
VEREIJKEN



Easy Climate

Water distribution sets

Guaranteed a good and equally heated nest for your new-born piglets.

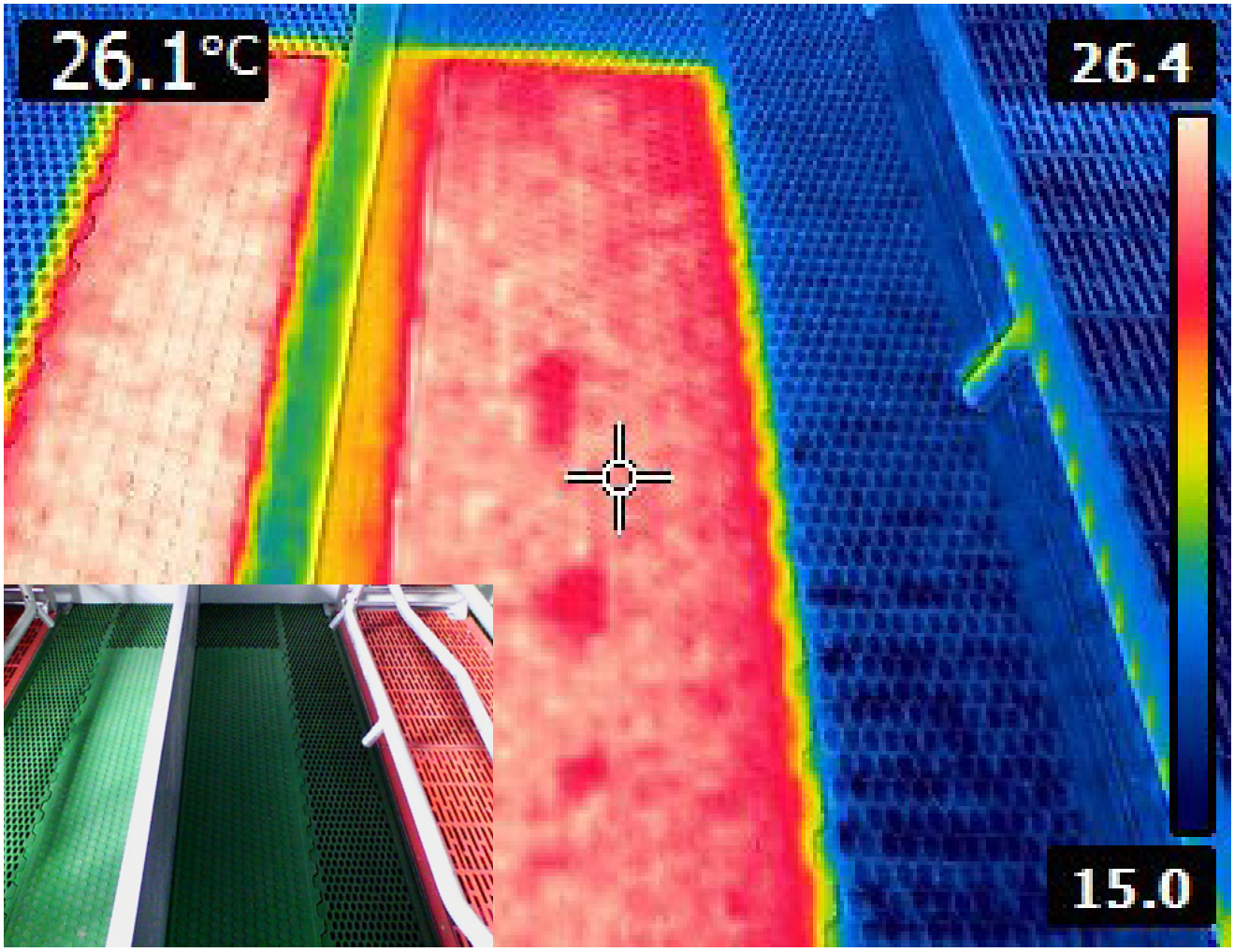
More welfare for farmers, piglets and sow

www.vereijkenhooijer.nl

Index

Introduction

At Vereijken we believe that the success of pig farming starts in the farrowing phase. Creating **the perfect environment for both the piglets and for the sow**, is thus of utmost importance. With our “waterbed” heated piglet nest solutions such as the Easy Climate slats and covers, and the Pro Dromi® Nanny cubicle, we provide the farrowing pen with a warm micro climate for the piglets. Thanks to the water-filled slats and Nanny, the piglets nests provide an equal heat distribution over the entire surface, even in the far corners! That is why the Vereijken “waterbed” heated piglet nests have a maximum temperature difference of 2 °C per slat.



By creating a separate warm nest for the piglets, the temperature in the farrowing room can be brought down to 18 °C à 20 °C after the birth, which is the ideal temperature for the sow. An environment that is too hot for the sow will lead to heat stress and reduced feed intake. Therefore, the 18 °C macro climate facilitates the optimal feed intake of the sow, and consequently optimizes its health, milk production and overall robustness and adaptability.

Consequently, the settings of the "waterbed" heated piglet nest are very important. They make or break the effectiveness of the separated micro and macro climate of the farrowing pen. To create a surface temperature of 34 °C, which is ideal for the new-born piglets, the temperature of the water input needs to be ca. 37 °C – 40 °C. Subsequently, the temperature needs to be lowered daily to finally achieve a surface temperature of 23 °C at the end of the farrowing period. **But who controls this?** And how do we know that the contact temperature on the surface is always perfect for the piglets?

We allow the differences between the piglet nests in the farrowing room to be 3 °C to 4 °C at the most. However, we have often noticed differences much larger than that. This causes the nests to be either too hot or too cold, influencing the lying behaviour of the young piglets. To achieve equal temperatures among the waterbeds, Vereijken has developed the Easy Climate water distribution sets. These sets can be connected to a climate computer and even to data loggers, allowing you to control the temperature curves of each circuit of waterbeds. This way, you will have piglet nest with **uniform heating both within the nest and among the nests** and a temperature which is easily adjustable!

How does it work?

The Easy Climate water distribution sets are equipped with flow-meters to optimize the amount of water flowing through the circuit, equally distributing the heat.
The sets each control 2 to 8 circuits of maximally 4 “waterbed” heated piglet nests. We have done this, because we allow the differences between the piglet nests to be 3 °C to 4 °C at the most, and the water flow in the circuit cools off by approximately 1 °C per nest.

The distribution sets include a servo-motor (24V) and a mixing group to easily set the temperature curve manually or with a climate computer. It is also possible to equip the sets with data loggers, which will give you real-time temperature measurements and thus even more control over the heating of your piglet nests!

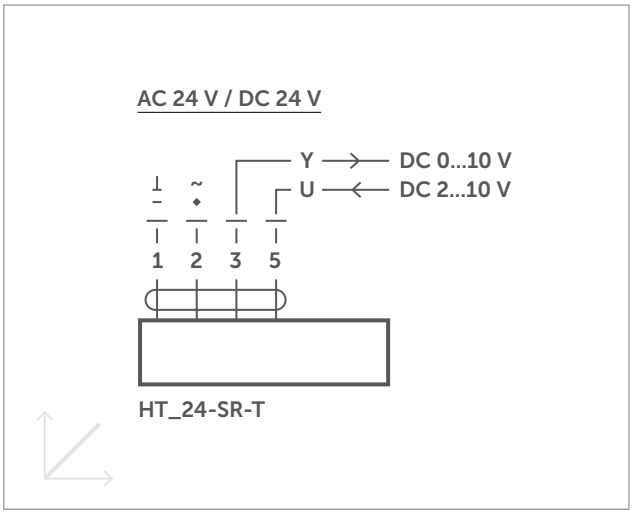
Installation and maintenance

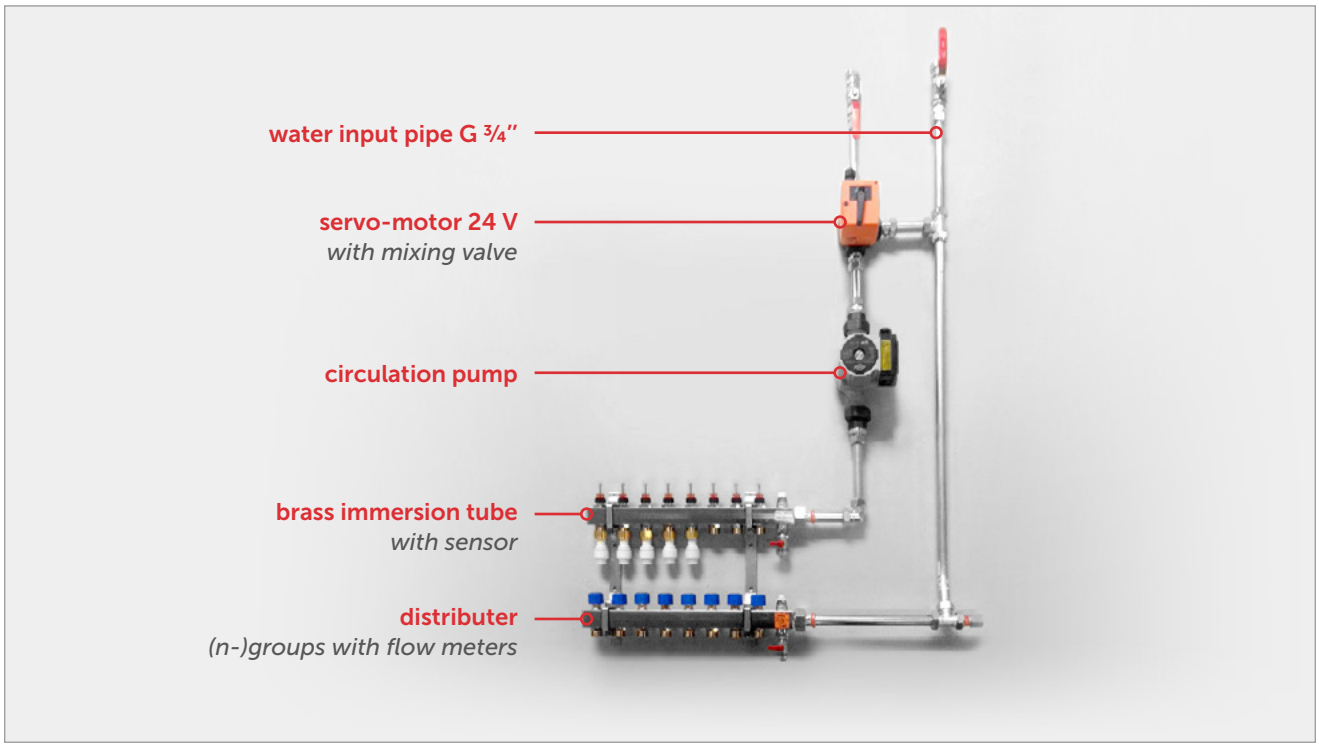
The water distribution set is to be connected to the water input and output pipes by the installer. These pipes are branches of the water main and are to be provided by the installer. They should measure ¾” or 22 mm at least.

When connecting the distribution set with the waterbeds, we strongly advise that the water hoses will not lie in the manure. If they are regularly in direct contact with the manure, the acid will eventually pass through the hose and affect the sets from within. In any case, we advise that you will annually check the quality of the water. Should it be contaminated, we recommend that you flush it through and refresh the water. This will prevent future problems with the distribution sets.

The climate computer

The servo-motor of the distribution sets works on 24 Volt and gives a 0-10 Volt feedback of the mixing valve to the climate computer. This feedback tells the computer precisely how far open the valve is and what the ratio between warm and cold water is, and whether this needs to be adjusted. On the right, you see the electrical diagram of the servo-motor. Points 1 and 2 are the input from the climate computer and points 3 and 5 are the feedback outputs to the climate computer.





The installer also has the possibility to place a (brass) immersion tube the distribution set, by means of a ½" connection. This immersion tube measures the speed of the water flowing into the circuits with a sensor, and communicates this with the climate computer. The circulation pump can then be adjusted (manually) to the desired flow rate.

Data loggers

An additional possibility for the distribution sets, is a data logger. This means that you will have a tool with which you can see the real time in- and out-going temperature of the distribution sets at any moment of the day, but also the real time temperature of the heated piglet nests and the room temperature. This data will give you a much better insight in the micro and macro environment of your farrowing rooms and will help you adjust the temperature curve to optimize the lying behaviour of the piglets. Besides, the data will inform you of the Wattage the distribution sets use. Averagely, the Vereijken "waterbed" heated piglet nest consume 250 to 300 Watt, but this depends on the ingoing water temperature, the size of the nest and the heat loss. The latter being dependent on the room temperature, the insulation and the use of a cover above the nest. To illustrate the importance of those data, the following calculation was made:

If you assume **250 Watt** energy conversion per heated piglet nest, a farm with **200 farrowing pens** and an average **run-time of 60%**, the total usage of the piglet nests is **30 KW**

$$(200\ nests \times 250\ W) \times 60\% = 30\ kW$$

Subsequently the difference between setting the output temperature to **35 °C** or to **55 °C** can be calculated using the COP values *(see table)*:

$$(30\ kW)/6 = 5\ kW\ electra$$
$$(30\ kW)/4{,}1 = 7{,}3\ kW\ electra$$

As there are **8.760 hours** in a year and if you assume an electricity price of **€ 0,09 per kWh**, you would **save € 1.813,--** on an annual base:

$$(7{,}3kW - 5kW) \times 8.760\ h \times € 0{,}09 = € 1.813$$

COP (Coefficient of Performance) values for output temperature distribution set.

Output temperature	COP
30 °C	6,5
35 °C	6,00
40 °C	5,40
45 °C	4,86
50 °C	4,40
55 °C	4,10

COP is the amount of kW heat which can be generated with 1 kW of electrical energy, at a source temperatureof 15 °C from the air scrubber. *(Source: Inno Plus)*

In short, the data logger will help you control the lying behaviour of the piglets, the temperatures in the piglet nests and in the room and consequently your energy bill!

Contact

At Vereijken Hooijer BV we believe that pig farming success starts with farrowing. Happy, healthy piglets are the best indicators of a successful, healthy pig farm that focuses on the wellbeing of sow, piglets and pig farmer alike. That is why we challenge ourselves to excel in developing farrowing systems and delivering them worldwide.

For more information on Vereijken's Easy Climate solutions, please visit one of our websites. We also have our own YouTube channel, with videos of our products (YouTube channel: Vereijken Hooijer BV Stalinrichting). You can also contact us via the address at the right side of this page. We are happy to answer any questions or discuss possibilities.

VEREIJKEN HOOIJER BV
Specialists in Livestock Equipment

Everbest 4c
5741 PM Beek en Donk
The Netherlands

Tel: + 31 (0)492 450 733
Fax: + 31 (0)492 450 400
E-mail: info@vereijkenhooijer.nl
K.v.K. nr. 58865233

www.vereijkenhooijer.nl
www.vereijkenpigflooring.com