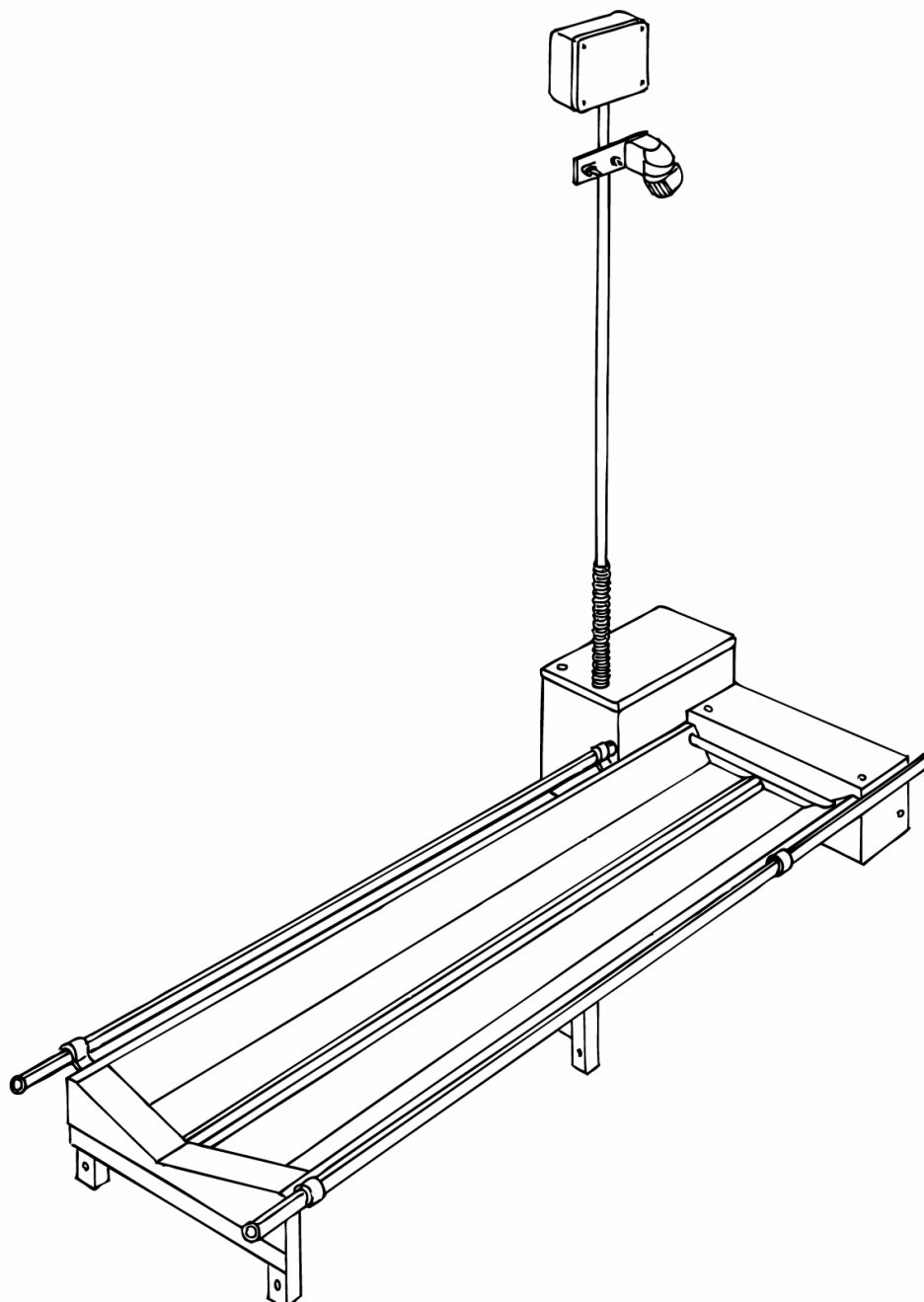


# Vink hydromatic footbath Installation manual and Userguide



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## Preface

The Vink hydromatic footbath is a robust unit completely constructed from stainless steel. The system consists of two parallel channels. Fluid (water with a disinfecting agent or medicine) is forcefully pumped through these channels. At the end of the channel the fluid is caught in a fine mesh sieve, which catches manure and other contaminants. A brush rotating over the sieve ensures that the sieve remains clean and the dirt is ejected out of the unit. The fluid is then caught in a small reservoir where a submersible pump forcefully ejects the fluid back into the channels. The entire system contains approximately 15 litres of fluid. Elsewhere in the cowshed is a storage tank in which the fluid is prepared. A pump, which is connected to the float valve in the small reservoir via a pipe, automatically keeps the fluid in the system at the correct level by refilling it from the storage tank. It is also possible to place the storage tank at a higher level, so the fluid can fill the system without the aid of a pump (see fig. 1). The system can also be connected directly to the water supply system. In this case a medicine injector ensures the addition of the disinfecting agent (see fig. 2). As soon as the motion sensor detects the cow the system starts functioning.

Fig. 1

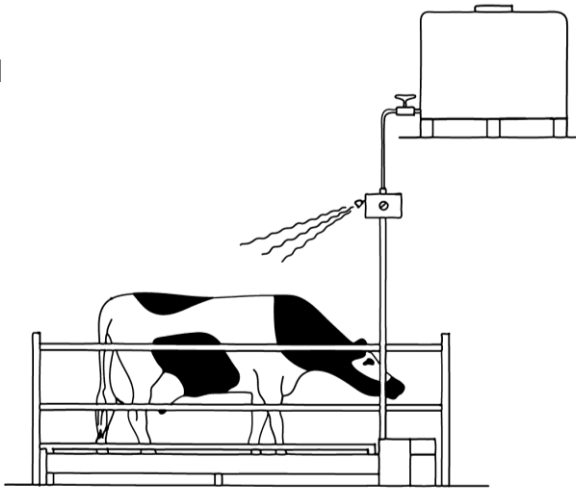
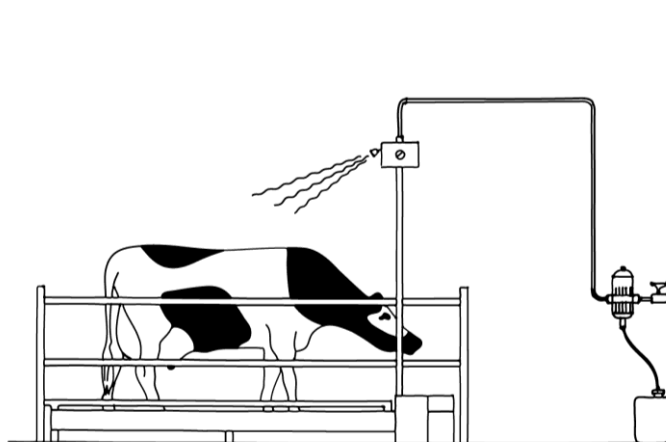
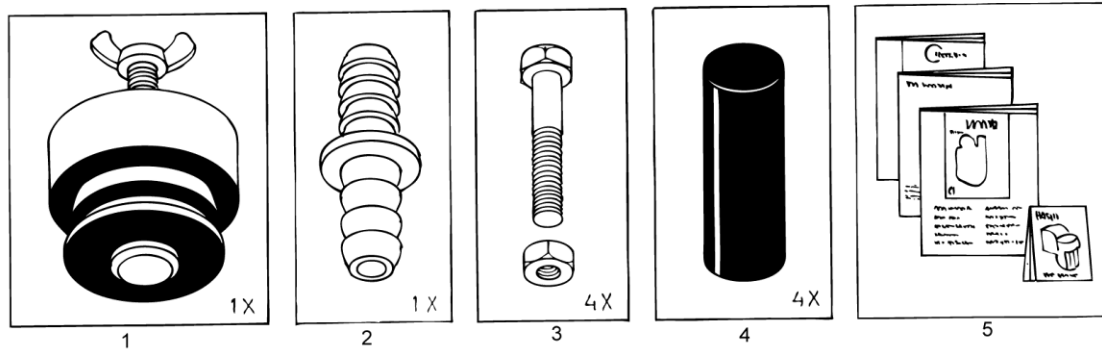
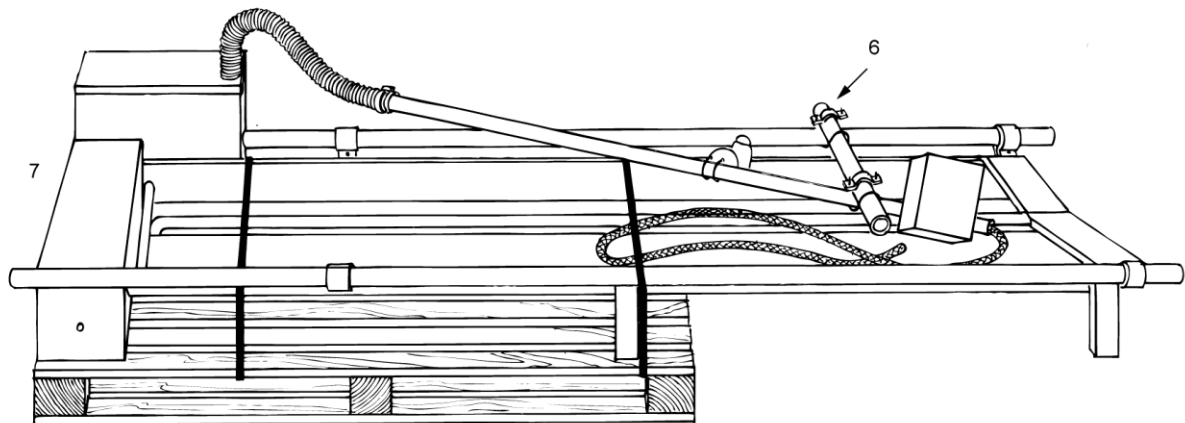


Fig. 2



## List of parts



### The delivery:

The hydromatic footbath is delivered on a pallet of 105 x 180 cm and can be lifted on three sides with a forklift or pallet truck.

With the delivery is a box containing the following parts:

- 1 Rubber plug 1x
- 2 Connection hose extension joint 1x
- 3 Bolt m10x60 4x
- 4 Plastic feet adjustable 4x
- 5 Instructions for use 4x
- 6 1.5 " clamps 2x
- 7 hydromatic footbath 1x

### Installation in the cowshed

The best location for the hydromatic footbath is just outside the exit of the milking shed. Thus an area is created between the milking shed and the feeding place of the animals. Hereby should be taken into account that it is not advisable for the animals to walk through the system if it is not in use. It will contaminate the system. Install the system in such a way that the animals walk through the system when in use and walk past the system when it is not in use. It is not always necessary to create two walkways (see fig. 3), because it is also possible to hoist the system (see fig. 4).

Fig 3

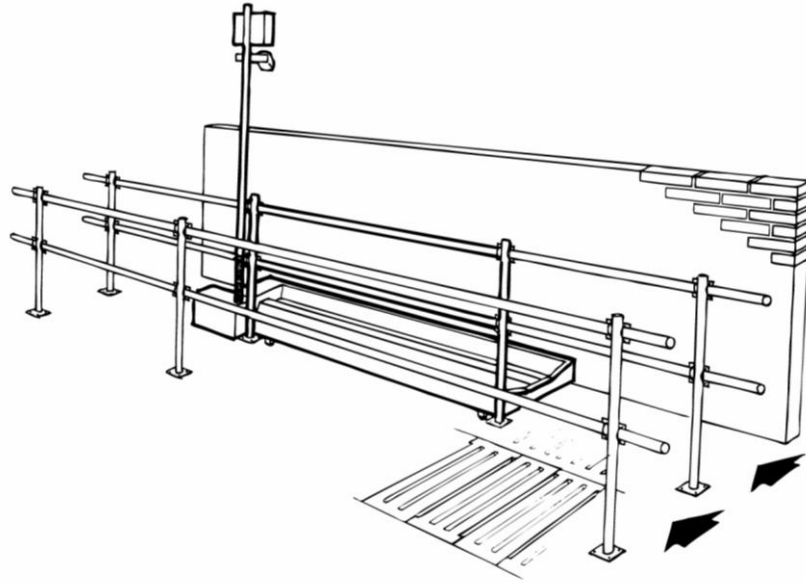
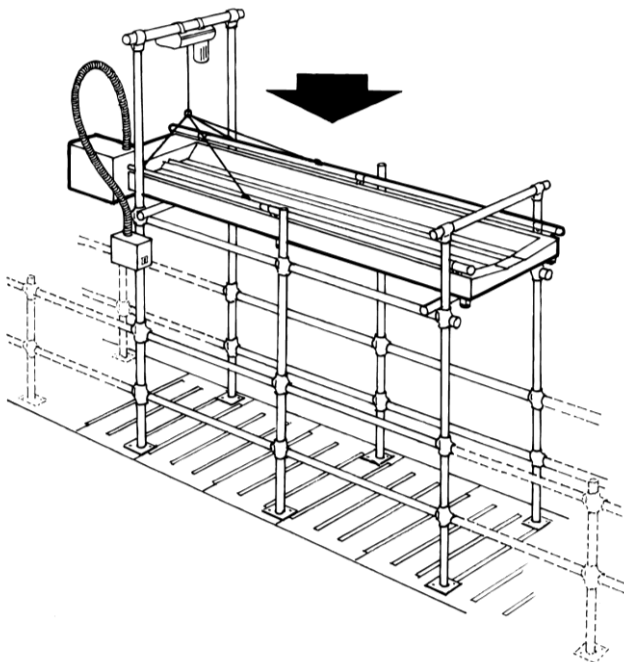


Fig 4



Sometimes the choice is made not to combine the cleaning and disinfecting with the milking of the cows. In that case the hydromatic footbath can be installed elsewhere in the cowshed, where, by enclosing the animals behind the hydromatic footbath, they have to walk through the hydromatic footbath to get to the feeding place. See figures 5 and 6.

Fig. 5

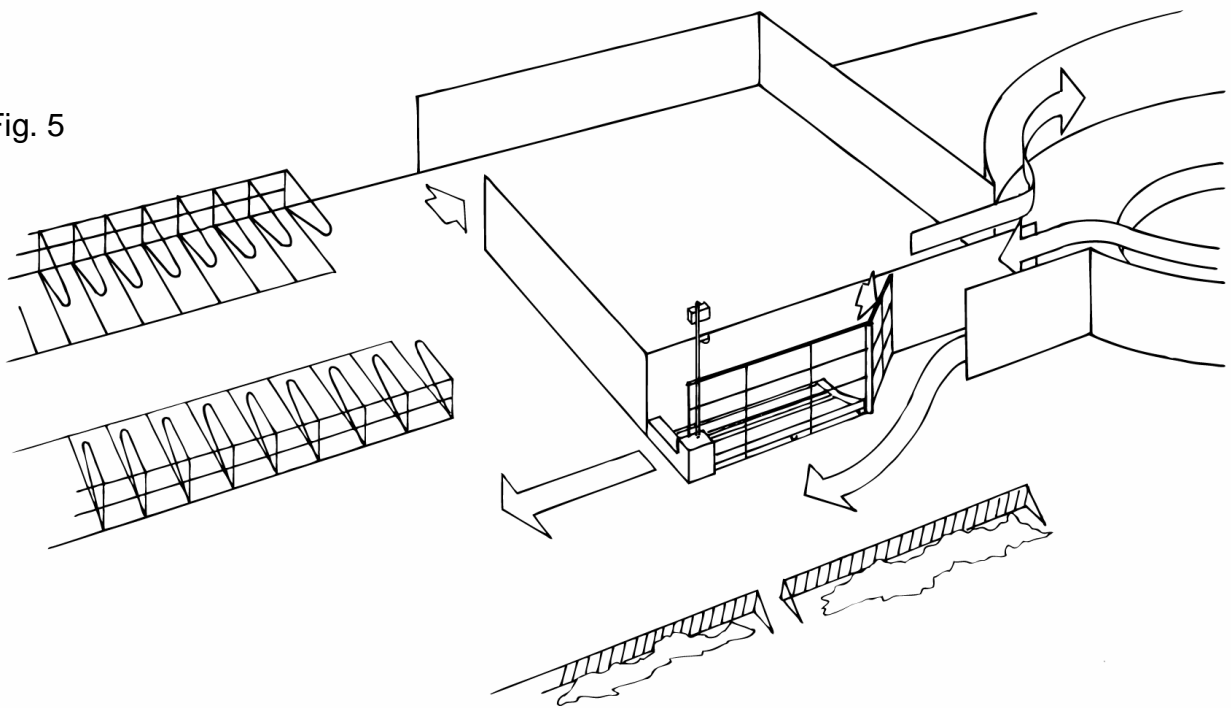
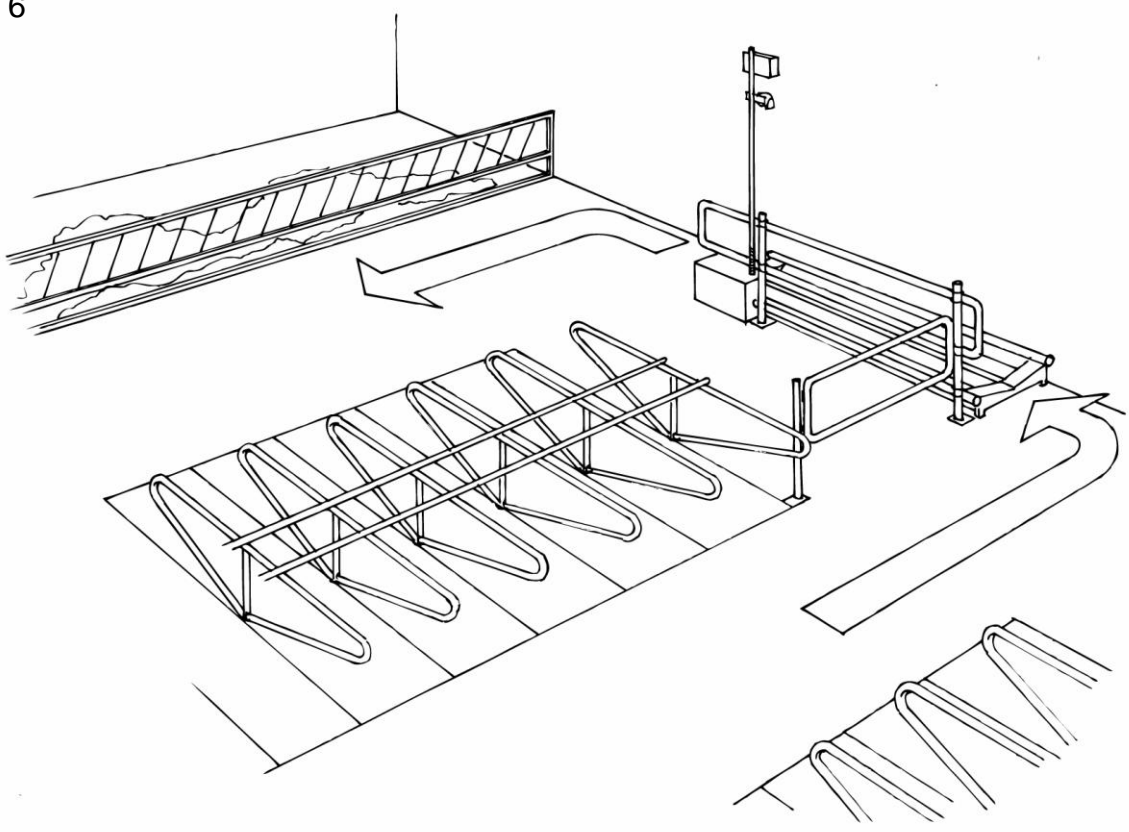


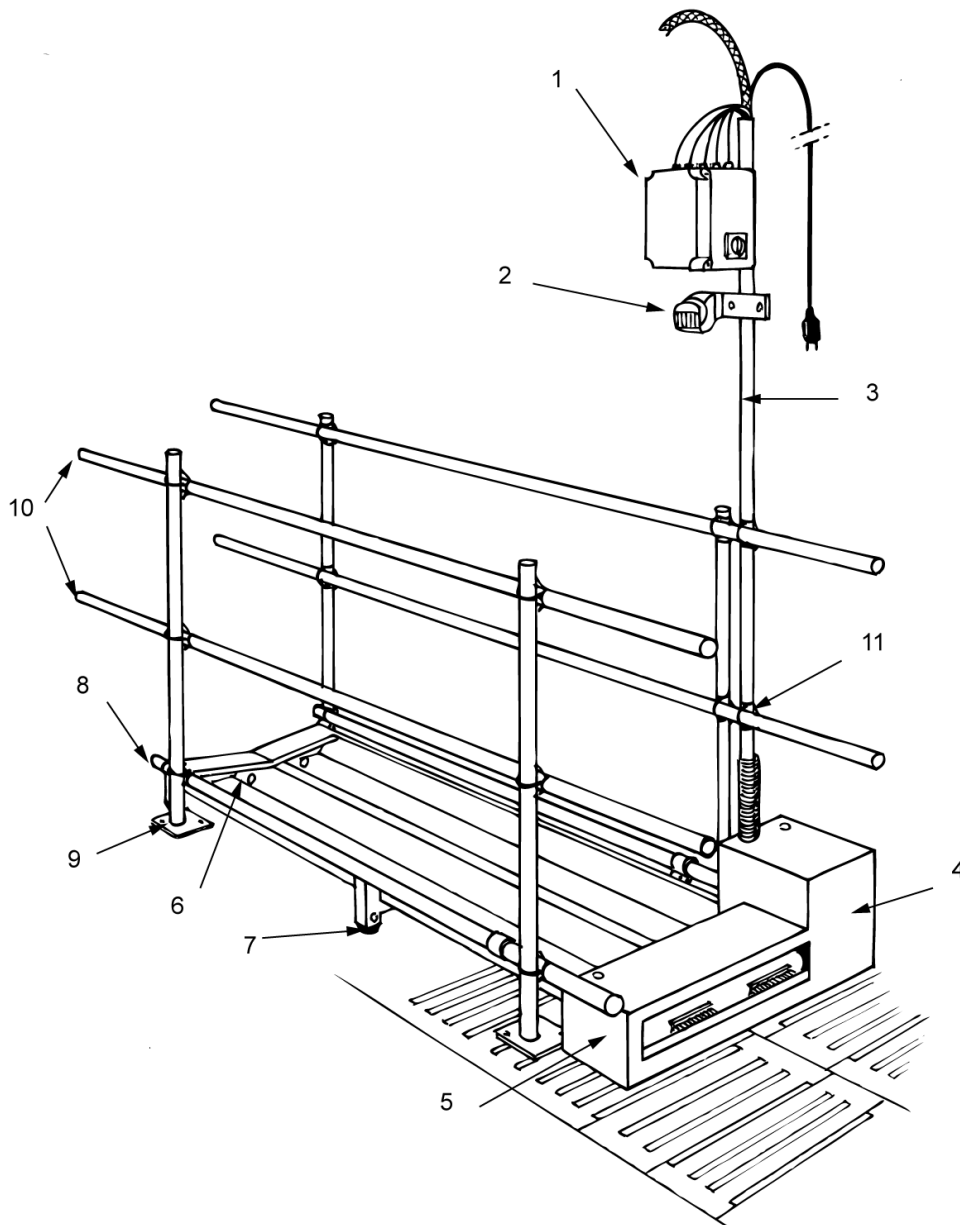
Fig. 6



## Basic assembly

On this page the standard method of placing the system in the open area is illustrated.

Fig. 7

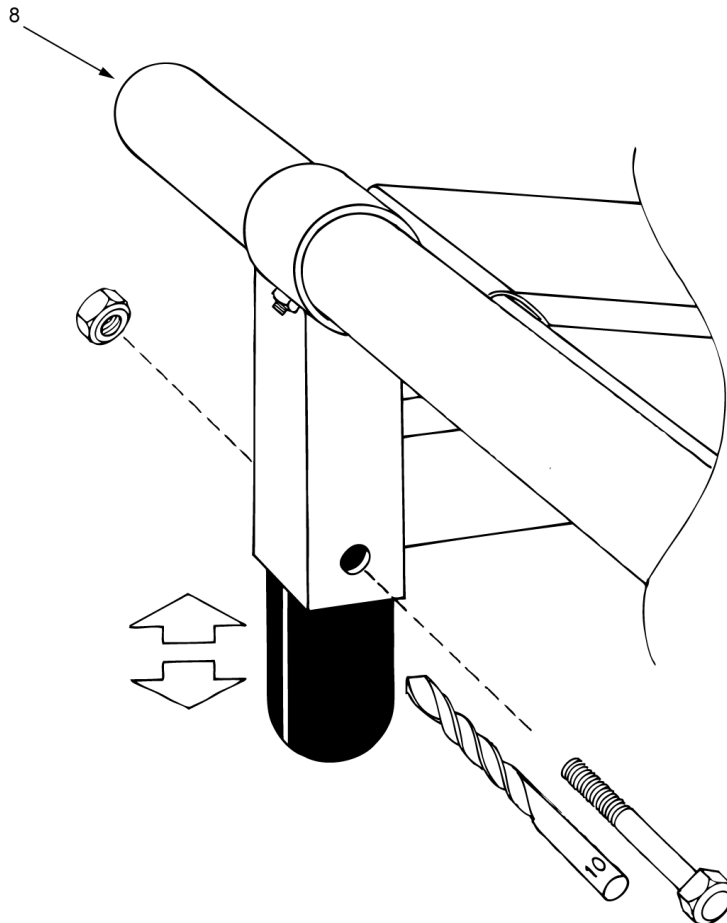


- 1 electrical box with switch.
- 2 motion sensor.
- 3 fixing pipe for electrical box, filling hose and grounded plug.
- 4 small reservoir with pump and float valve.
- 5 catch basin with sieve and drum motor.
- 6 adjustable nozzles.
- 7 square pipe with plastic feet for height adjustment.
- 8 1.5" fixing pipe.
- 9 grid poles plus fastening
- 10 return pipe.
- 11 clamps of 1.5".

## Installing the system.

Take the system to the right place in the cowshed. Place the supplied synthetic legs in the bottom of the square pipes. Adjust the system to the correct height. The hydromatic footbath should be installed with a decline of 3 cm in the direction of the sieve. Push the feet to the floor, drill through the synthetic material and secure it with the supplied m 10 bolts. See fig. 8.

Fig. 8



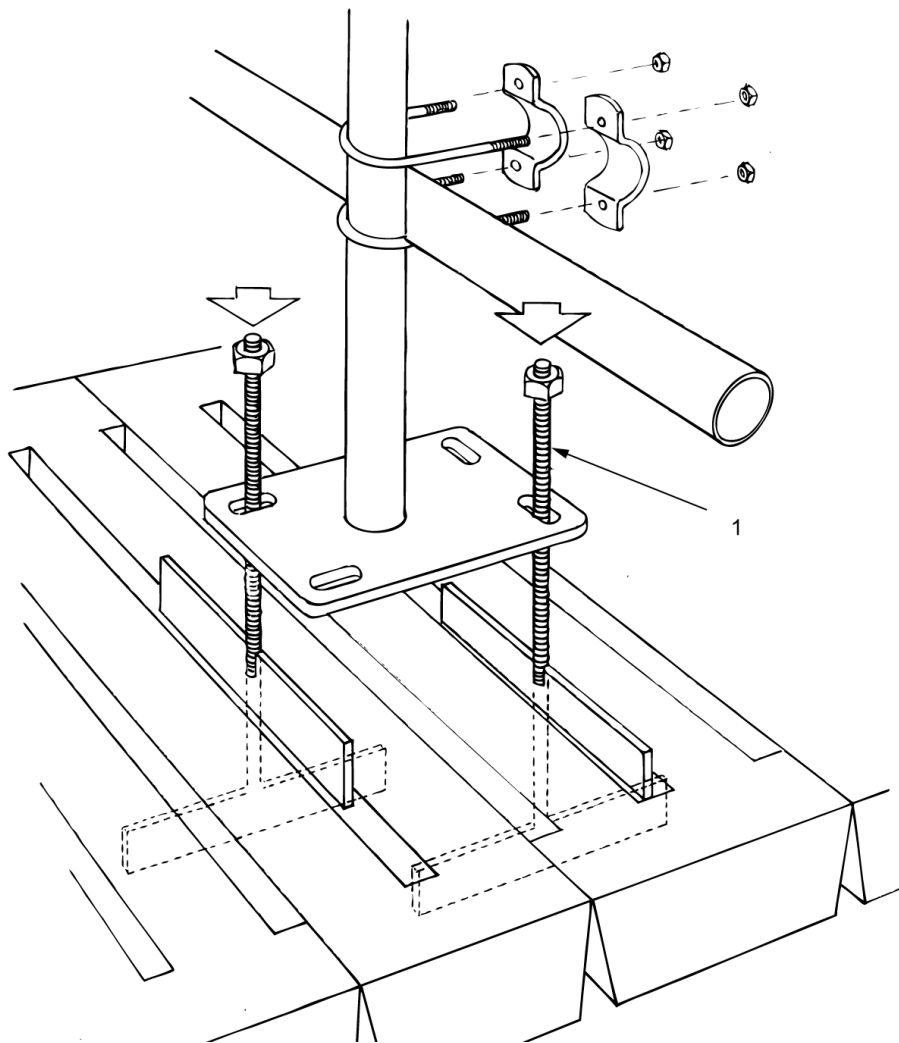
The system is supplied with a 1.5" fixing pipe, no. 8, on both sides.

(Fig. 8)

The standard method to install the system in an open area is by placing a grid pole, no. 9 (fig. 7) at every corner and to attach these to the grid beams or concrete floor.

The following should be done to attach the grid pole to a steel grid floor. Mount the anchors no. 1 (fig. 9) in the floor slab of the grid pole. Install the grid pole on the floor in such a way that the anchor drops through the grid gaps and the grid pole sits against the fixing pipe of the hydromatic footbath. Turn the anchors 90 degrees and tighten the screw nuts of the anchors.

Fig.9



If the system is placed on a concrete floor the grid poles must be attached with chemical anchors. Next attach the fixing pipe of the hydromatic footbath to the grid poles with clamps and attach another two horizontal pipes to the grid poles at 60 and 120 cm height. (See fig. 7)

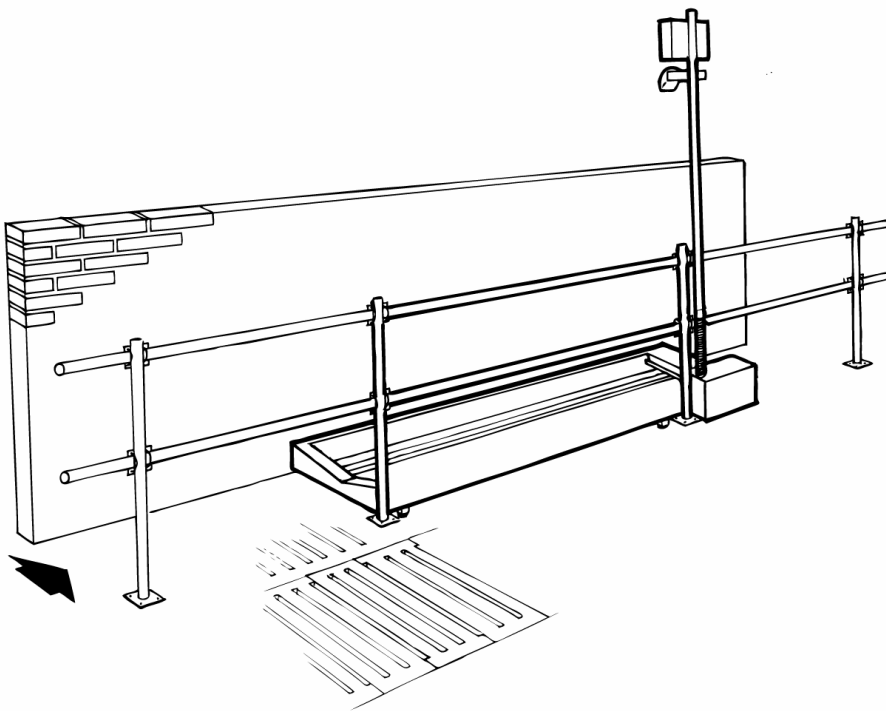
Now attach the pipe, to which the switch box has been mounted, vertically to the horizontal pipes with the supplied clamps.

### Place with one side against the wall.

In the above illustrated placement in the open area it concerns a left-sided system. This means that the small reservoir is located on the left side. If it is preferred to place this side against the wall then a right-sided system should be chosen. Place the system in its entirety with the left side against the wall, so only the right side has to be fenced off, and anchor the entire system. Do this as it is shown in figure 10 by placing only 2 grid poles on the right side, then attach the fixing pipe no. 8 of the hydromatic footbath to the grid poles with clamps, and at 60 and 120 cm height attach another two horizontal pipes to the grid poles. See fig. 7

Now attach pipe 3, to which the switch box has been mounted, vertically to the horizontal pipes with the supplied clamps.

Fig 10



## Small reservoir with pump and float valve

The reservoir figure 11 is opened by removing pin, no. 1, and by sliding the lid, no. 2. In this reservoir is the circulation pump, no. 3, the float valve, no. 4, and the drain plug, no. 5. The circulation pump must be attached to the flush pipe by means of the coupling, no. 6, by moving both levers upwards. See figure 12. In order to mount the drain plug, no. 5, the wing nut must be loosened, the plug, no. 5, must be placed in the opening from the outside and the wing nut must be tightened until no more fluid leaks through. The float valve, no. 4, can be adjusted in height.

Fig.11

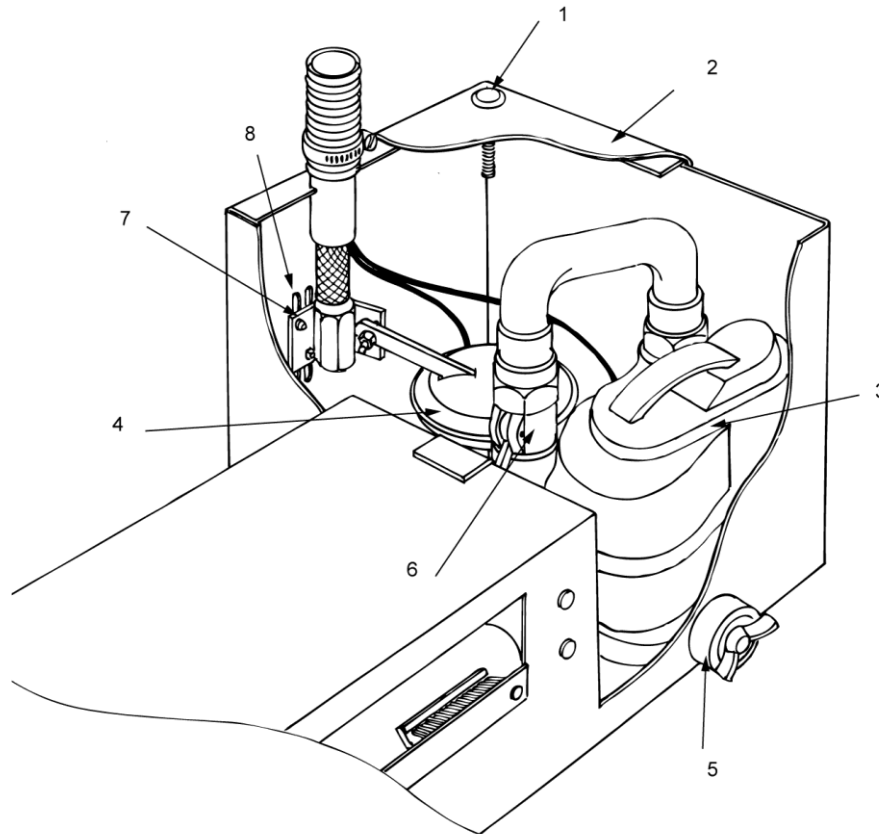
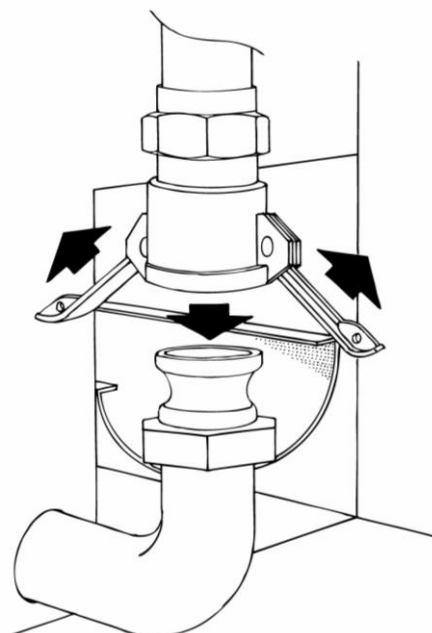
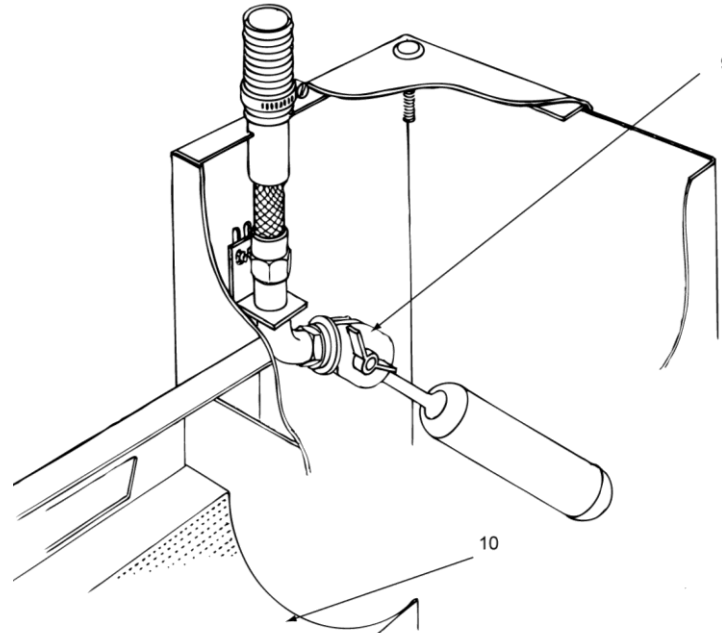


Fig. 12



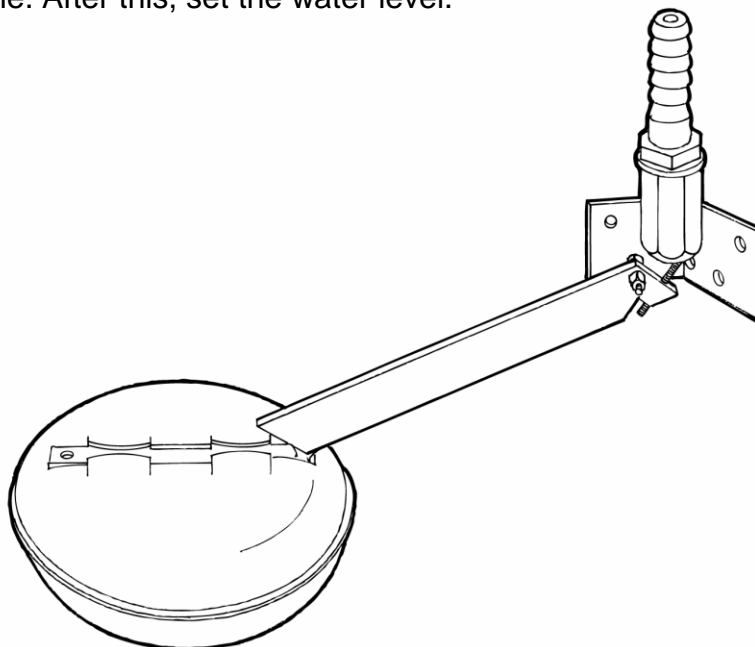
In order to set the water to the correct level the screw bolts, no. 7, are loosened, after which the float valve, no. 4, can be slipped through the split holes, no. 8. There is a distinction between two types of float valves for the use of a supply reservoir or filling pump, one for connecting to the water supply (2 to 4 bar) (see fig. 13) and one float valve for low pressure (see fig. 14).

Fig. 13



The red attachment pin, no. 9, figure 13, of the float valve should be turned to the right as far as possible. After this, set the water level.

Fig.14



The water level should be set in such a way that it sits just underneath the sieve, (no. 10 figure 13). When the system is operating (and the water is pumped around) this should be equivalent to a water level of 5 cm.

Replace the lid, no. 2, on the reservoir, slide it back and secure it with pin no. 1. (fig.11)

## Installing the reservoir

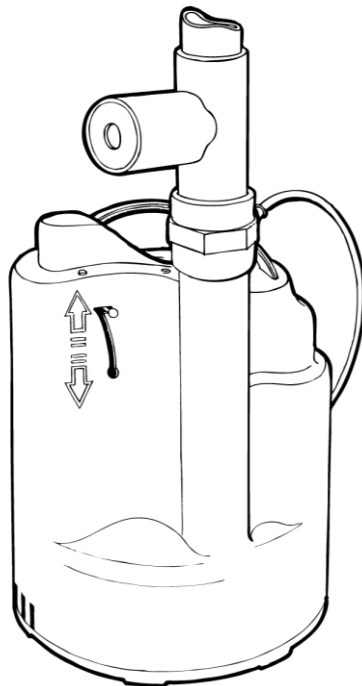
The reservoir, not supplied, can be installed elsewhere in the cowshed in a place where it can easily be filled. If it is possible to install the reservoir at a higher level the fluid will automatically flow towards the float valve and continuously refill the system. Connect the reservoir, with a hose and the supplied hose tulle, to the system with the hose.

Attach the hose in a manner so it runs off to the system and does not hang in order to prevent an air bubble from forming and obstructing the flow of fluid from the reservoir.

If the reservoir cannot be placed at a high level an additional pump is needed. (Not a standard supply.) This is the same type of pump also mounted in the system. This pump can also be used to keep the fluid in the reservoir mixed.

Because the pump has a much larger capacity than needed for refilling, a part of the fluid is pumped back (see fig. 15) so the fluid in the reservoir is continually in motion. For the electrical connection of this pump see the instructions on page 19.

Fig. 15



## Dosage pump

For a connection directly to the water supply the high pressure float valve (fig. 13) is used. Connect the dosage pump according to the instructions enclosed with the dosage pump.

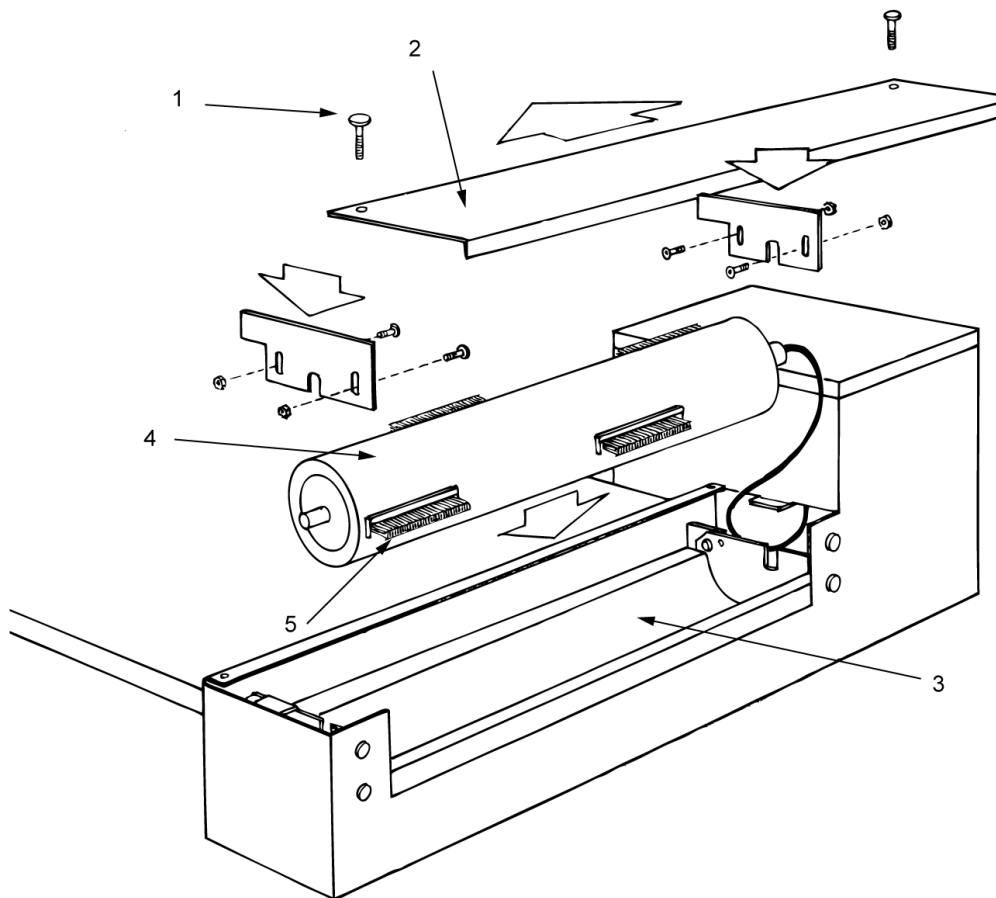
## Motion sensor

The sensor should detect the cow even before the cow reaches the hydromatic footbath, while the other animals in the area next to it are not detected. For adjusting the sensor see page 21

## Catch basin with sieve and drum motor

The catch basin, figure 16, can be opened by removing pin no. 1 and sliding the lid no.2. In the catch basin is the sieve no. 3 that stops dirt. Above the sieve 3 is the drum motor no. 4 with the brushes no. 5. The direction in which the drum motor no. 4 turns should be such that the brushes 5 will fling the dirt that is on the sieve out at the front of the system. Place the lid no. 2 back on the reservoir no.5 and slide it to the back and secure it with pin no. 1

Fig. 16



## Circulation pump

The circulation pump, fig. 17, has been manufactured from synthetic material and stainless steel. The pump has thermal protection against overheating.

### Technical information:

Power: 650 watt/50 Hz

Voltage: 220 volt

Temperature range from 1 to 40 degrees Celsius

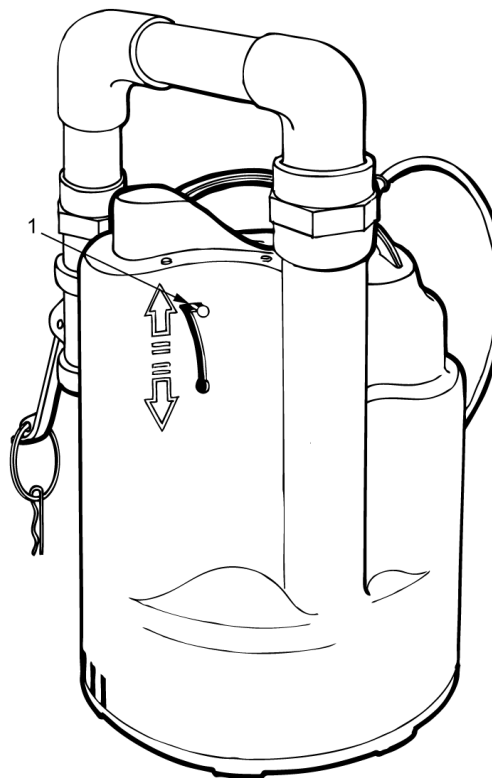
Capacity: 11500 l/h

Weight: 4.8 kg

Protection: ip 68/f

The built-in float valve must be switched off by moving the lever, no. 1, on the side of the pump upwards. See fig. 17.

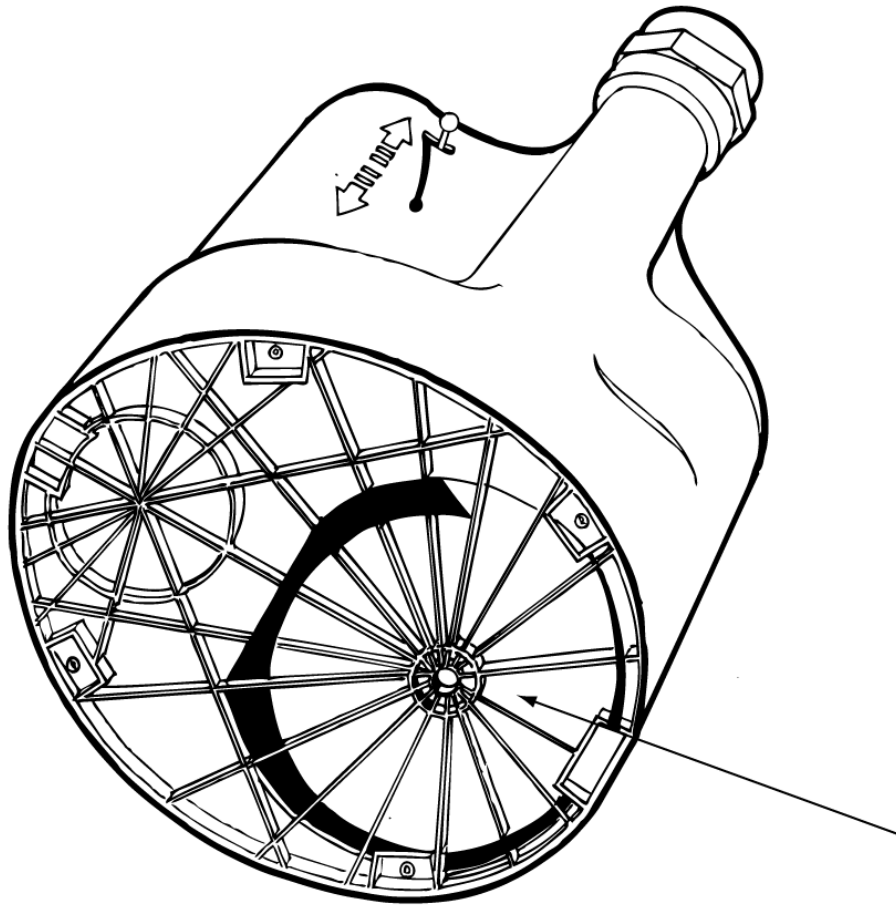
Fig . 17



The pump will not become dirty very quickly because the fluid that comes in contact with the pump has passed through the sieve first. However, when hosing out the channels dirt can be hosed across the sieve. This dirt may stop up the grid in front of the inlet. The jet of water will be less powerful. This dirt can be removed as follows: First switch off the power supply. Disconnect the pump (fig 12) and remove the pump from the reservoir. The inlet is at the bottom of the pump in the centre and is only 3 cm in size. Remove the dirt from it. See fig. 18

If, upon starting, the pump runs but does not supply water, it means that there is air in the housing of the pump motor. Repeat the start-up a few times in order for the air to be removed from the housing.

Fig. 18



### **Drum motor**

The drum motor is made of stainless steel and does not require maintenance, is resistant to acid, salt etc.

### **Technical information**

Length: 650 mm  
Diameter: 82mm  
Speed: 0.20 m/sec  
Power: 120 W  
Condenser: 10uf  
Isolation: Class F  
Thermal protection in motor 120 degrees Celsius  
Type: latt 82  
Frequency: 50 Hz  
Voltage: 220 volt  
Material: stainless steel 304

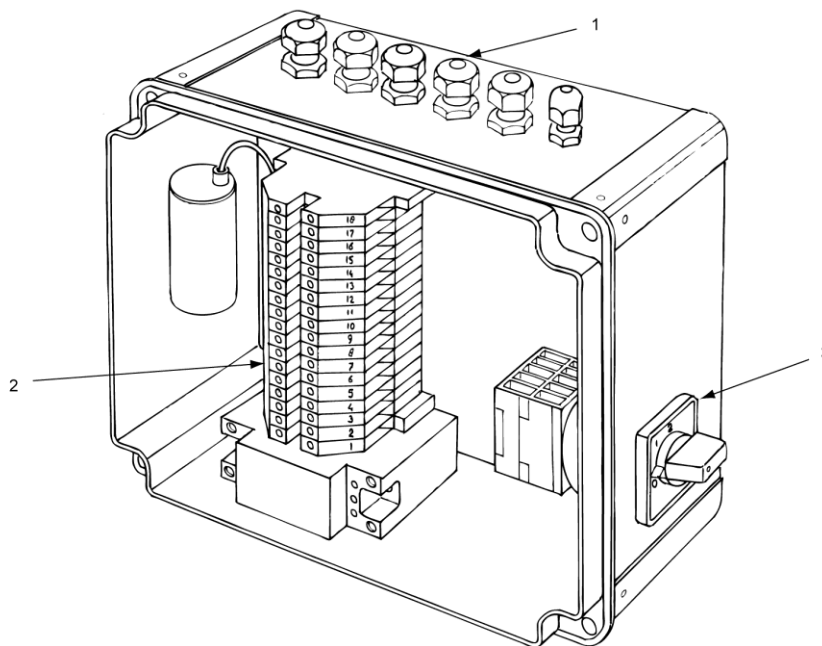
### **Brush:**

Bristle length: 35 mm  
Bristle material: Nylon  
Core: PVC  
Length: 160 mm

## Switch box

Fig. 19 shows the switch box. At the top are turnbuckles no. 1. The cables of the pump, the drum motor, the sensor, the ground cable and the 220 volt power supply cable go through 5 of these turnbuckles. The sixth turnbuckle can be used for the possible connection of the filling pump. In the switch box are the connecting clamps no.2. The numbers of the electrical chart (fig. 20 and 21) correspond with the places of the connecting clamps.

Fig. 19



Switch nr. 3 has 3 settings:

0 – system is switched off

1 – circulation pump is switched off and the brush turns opposite to the normal direction of turning.

2 – the entire system is switched on and the drum motor turns with the brush in the right direction.

Note: Electrical malfunctions should always be checked by a professional.

Fig 20

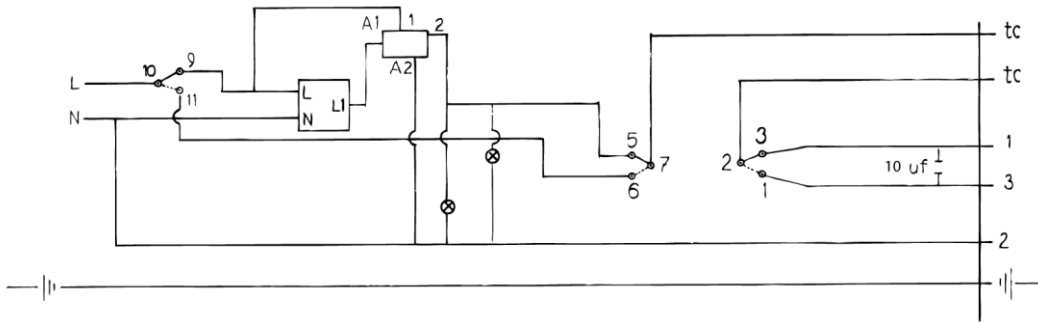
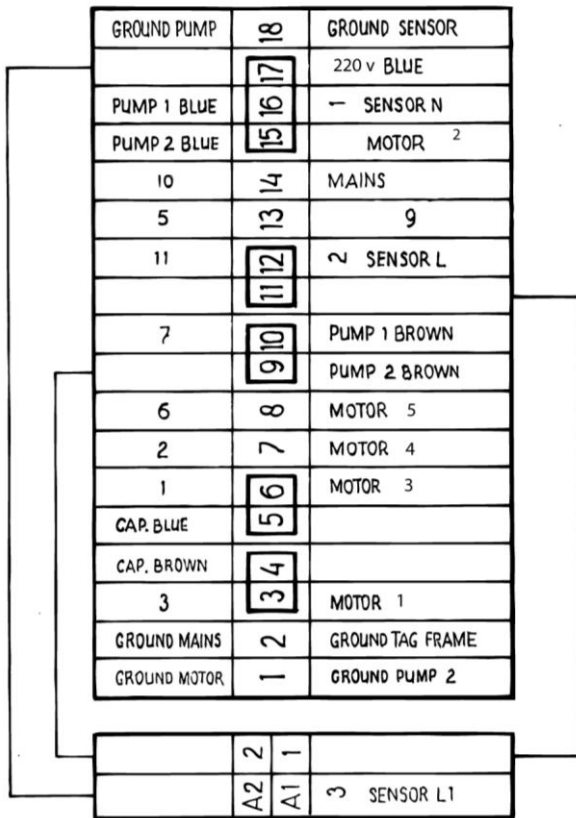
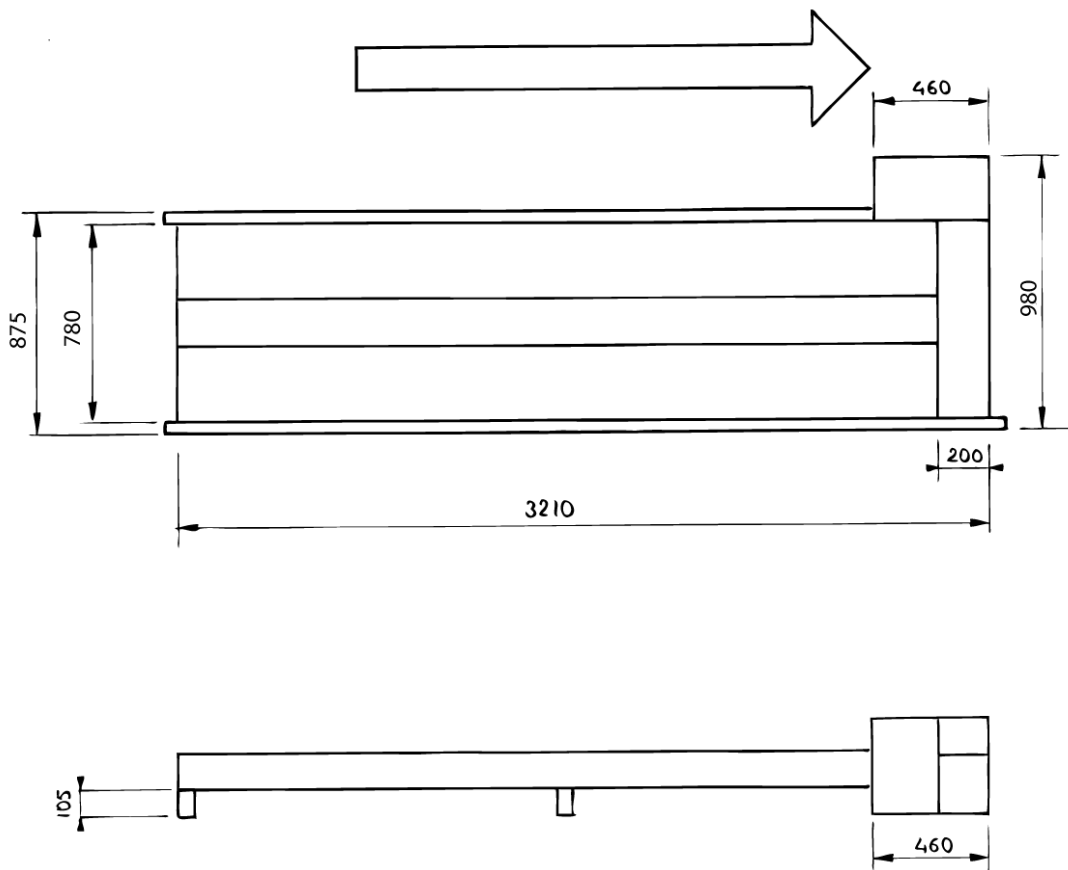


Fig. 21



## Stainless steel channel

Material: stainless steel 304  
Weight: 150 kg  
Length: 3210 mm  
Width: 980 mm  
Water content: approx. 15 litres

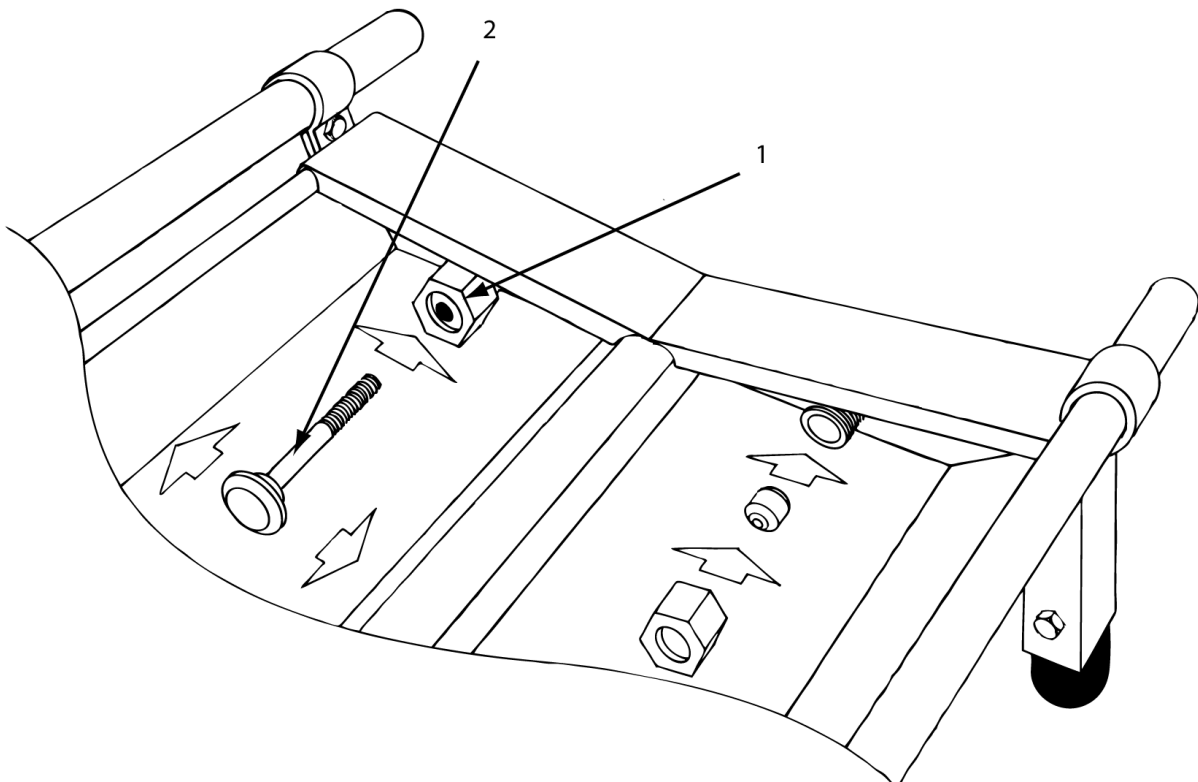


## Adjusting the nozzles

The nozzles mounted on the back of the hydromatic footbath are spherical and adjustable to all directions. The water jet should be directed straight forward through the centre of the channel. The height should be adjusted so the water jet touches the bottom at approximately 115 cm from the back of the channel. With this the centre of the water jet should not reach higher than 8 cm.

In order to adjust the nozzles, the pin is placed in the hole of the spherical sprayer. Moving the pin to the left, right, top or bottom adjusts the sprayer. By turning screw the nozzle can be loosened

Fig. 22



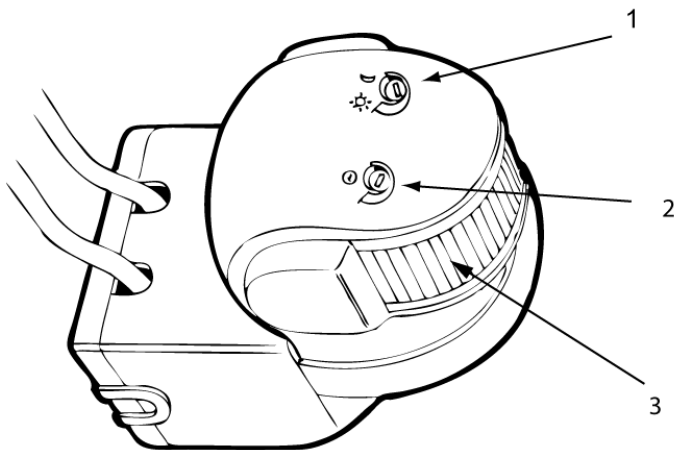
## Adjusting the sensor

In order to be able to adjust this, the two switches which are at the bottom of the device, must be turned to the following positions:

Lux: completely clockwise (no. 1)

Time: completely counter clockwise. (no. 2)

Fig. 23



In this position the sensor works both day and night. Now the system should be activated by setting the main switch to 2. (fig. 19 no.3) The system will now remain activated for about 2 minutes in order to warm up the sensor. Stay out of the detector area during this warming-up period. Following this the sensor will put the system in motion for about 5 seconds each time it is activated. First the distance at which the sensor detects the cow should be limited by turning it downward. Then the width of the sensor range can be limited by turning it away to one side, for example, if there is a wall on that side. The range of the sensor can also be limited by applying tape or the supplied cover strips on the lens, no. 3, of the detector. The time limit in which the detector activates the system can be extended by turning the "Time" switch (see drawing) clockwise. This should be done in very small increments given the fact that the sensor can be set between 5 seconds and 15 minutes. For further information please consult the enclosed User Instructions.

## How it works

As soon as the animals exit the milking shed, they are detected by the sensor which switches the system on. As soon as the cow walks through the rinsing channel, a powerful jet is sprayed against the back of the hooves. This jet is so powerful that it not only reaches the bottom but sprays upwards to the dewclaw and especially between the hooves where it also reaches the front of the toe.

Because the jet is so powerful, the hoof is thoroughly cleansed and the medicinal fluid penetrates deeply into the affected area. Because the tank is three metres long, the animals place their hooves in the channel at least three times. Due to the fact that there is only 15 litres of fluid in the system, and that the fluid is constantly renewed, the quality of the disinfecting, medicinal fluid remains constant.

## Usage

Once the system has been installed in the cowshed, it is recommended that the animals are allowed to get used to the system by letting them walk through the rinsing channel a number of times before the pump is activated. Spreading a layer of sand in the channel makes it easier for the animals to get used to the system. To activate the system, the storage tank should be filled, the plug in the circuit box should be plugged into an earthed power supply and the switch set to "2". The fluid is now pumped around for about 2½ minutes. This is due to the fact that the sensor which detects the cow needs a warming up period. After this time, and once the fluid has reached the required level, the channel is ready for use. Once the sensor detects a cow, the fluid will be sprayed through the channels. This stops once the sensor does not see the cow any more and the delay time which

was initially set has elapsed. The power up time for the sensor so should be set depending on the number of animals walking through the channel after each other. For example, if the cows are coming out of the milking shed (an automated milking shed), this can be short; 5 to 10 seconds. If the animals walk through the rinsing channel in larger numbers (for example 6 or 12 at the same time) then the sensor should be set for a longer period; 10 to 12 seconds. This is to give the system time to refill and to filter any dirt out of the system.

### **How do the animals easily get used to the hydromatic footbath?**

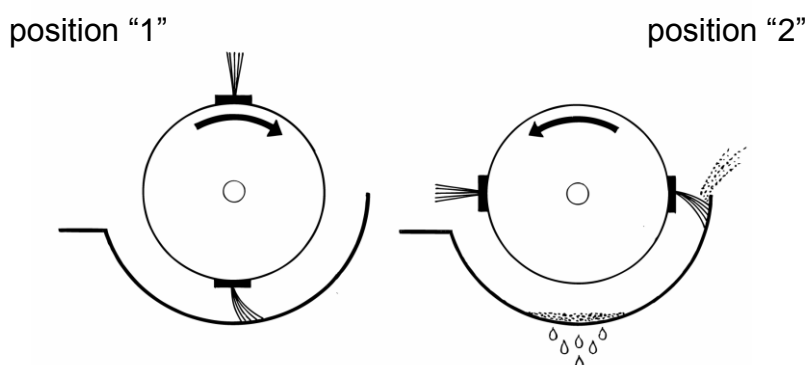
Once the system has been installed in the cowshed, it is recommended not to use the hydromatic footbath immediately to allow the animals to get used to the system by letting them walk by the system for a few days. Then you have to spread a layer of sand in the channels, and let the animals walk through the channel a number of times after milking. This makes it easier for the animals to get used to the system. Now you can start using the system, first time with water only.

The hydromatic footbath should be adjusted in such a way that the water starts spraying before the animal approaches the footbath. In the beginning use the footbath intensively which is positive for the animal to get used to the footbath. Intensive treatment is also advisable for the healing process of the hoofs.

Stay calm, do not rush the animals. If in the beginning the animals will get the time to get used to the system they will walk through the footbath easily.

### **Switching off:**

In order to switch the system off, set the switch to position "1" for a number of seconds. The brush which removes dirt from the sieve will then rotate in the opposite direction. If the switch is now set to "0" and the system is switched off, the bristles of the brush will hang in the opposite direction and, because they will be in this position for a long time, they will retain this form and their elasticity when they rotate in the normal direction when used to clean the sieve.



### **Maintenance:**

If the system is used correctly, almost no maintenance is necessary. Neither the drum motor which ejects dirt using the brushes nor the pumps require any maintenance. It is possible, however, that after some time, finely grained sand can accumulate under the sieve. This can be corrected by removing the rubber plug on the side of the storage tank, opening the covers under which the submersible pump and drum motor are located, and hosing the sand out from under the sieve.

Also it is possible that the inlet of the submersible pump gets blocked. This is the case when the jets are less powerful. In that case take the pump from the reservoir and remove the dirt which has accumulated on the underside in the middle of the grid. This inlet has a diameter of only 3 cm. (fig.18)

## **Frequently Asked Questions:**

Which Agent?

Any agent which dissolves in water and which can be used for cows.

For example: 4% solution of 40% industrial formalin.

How often can it be used?

Curative: 4 to 7 times per week depending on the solution used.

For example: 1% solution of 40% industrial formalin

Preventive: 2 times per week or less.

For example: 4% solution of 40% industrial formalin

How wide should the path be where the channel is situated.

See diagram on page 19

What is the water usage?

Approximately three quarters of a litre per cow

## **Malfunctions:**

Brushes do not rotate

Drum motor has overheated.

Pump does not work

No or too little water in the tank,

The floating valve in the pump prevents it from working without water.

This can be remedied by raising handle on the side of the pump to its highest position. See page 6

The nozzles do not give a sufficient powerful jet

The inlet of the pump is blocked. See circulation pump page 7

Filling pump does not work

Storage tank is empty

The floating valve in the pump prevents it from working without water.

Sensor does not detect the cow

The temperature in the cowshed is the same as the cow's body temperature

The sensor is dirty

Day and Night setting has been set wrongly

The sensor is defect.

If in doubt, take up contact with your dealer or the manufacturer

**EG- Declaration of conformity**



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E-mail: [info@vink-elst.nl](mailto:info@vink-elst.nl),  
Website: [www.vink-elst.nl](http://www.vink-elst.nl)

**We declare that, the VINK foot bath**

- conforms to the Machine Directives (Dir. 2006/42/EC), as recently amended;
- conforms to the Low voltage Directives (Dir. 2006/95/EC), as recently amended

GJ. Vink - Managing Director

Bemmelen, Juni 2011

**Vink Warranty**

If properly installed and used Vink grants a warranty for the period of one (1) year from invoice date on the complete footbath (warranty on the footbath itself and on material- and manufacturing defects) Defects, mal functions or failures of the warranted product caused by acts of nature (such as floods, fire etc.) environmental and atmospheric disturbances, other external forces such as powerline disturbances or incorrect cabling and damage caused by misuse and unauthorized alteration or repair are not warranted.

The warranty is limited to the supply of the defective parts during its warranty period. Replaced parts are warranted for the remainder of the original product's warranty period.

## **Technical specifications:**

### **Channel**

Material channel: Stainless Steel 304

Length 3210 mm

Width 980 mm

Weight 150 kg.

Water content Approximately 15 litres

### **Drum Motor**

Weight: 12kg

Length 650 mm

Diameter 82mm

Speed 0,20 m/sec

power 120 W

Oil type : Full synthetic oil

Condenser: 10 uf

Isolation Class F

Thermal protection in motor 120 degrees c

Type latt

Frequency: 50 Hz

Voltage: 220 volt

Material: stainless steel 304

### **Rinsing Pump**

Power: 650 watt

50 Hz

220 volt

### **Filling Pump**

Power: 650 watt

50 Hz

220 volt

Temperature range from 1 to 40 degrees C

### **Brush**

Bristle length 32 mm

Bristle material Nylon

Core : PVC