## **AHC Pump User Manual**



## The Schippers Group Let's beat AMR with HyCare

- NL Klantenservice BE Klantenservice/Service Clientèle DE Kundenservice DK Kundeservice IT Servizio clienti ES Servicio al cliente UK Customer Service CA Customer Service FR Service Clientèle EX Customer Service Export
- +31 (0)497 339 787 +32 (0)14-820713 +49 (0)2833-923630 +45 89884187 035-4490369 +34 931816433 +44 (0)01733592049 +1 866 995-7771 +33 (0)2 99 61 40 40 +31 (0)497 700 278

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## Quick installation manual, milking robot

1. Start up AutoHoofClean Pump



5. Choose product



6. Choose "claw treatment"



More

2. Choose "Claw Treatment"



		4444
7 8	9	
4 5	6	۲
1 2	3	







Close

## **Quick installation manual, Milking Barn**

1. Start up AutoHoofClean Pump



#### 3.Unlock computer



12:12 Claw Treatment

: Milking Robot Ma 1 Connected

Nat 2 Connected

Mat 3 Connected : Yes

Mat 4 Connected : No

More

#### 5. Choose Barn type

Other Product : Formades

Close

16-10-2021

Barn Type





#### 4. Enter code

			4444
7	8	9	
4	5	6	۲
1	2	3	

#### 6. Select mats and after go for "More"



#### 8. Fill in milking duration and



#### **10. Choose Claw treatment**





AHC User Manual

## **General information**

The purpose of this manual is to support the use and maintenance of the AutoHoofClean pump. Do not use the AutoHoofClean (AHC) pump before you have read and understood the entire manual. In case of questions about the manual, and the use and maintenance of the product please contact the MS Schippers specialists. The following notes and explanations are absolutely necessary in order to use the unit.

## Liability and conditions

Only qualified personnel may work with the AutoHoofClean pump in accordance with all the safety requirements, and all applicable laws, regulations and standards.

This documentation has been compiled with care, however the described device is being continually developed. Therefore, it is possible that the documentation is not complete or that it does not fully correspond to the performance data, standards or other functions described. In case of technical or writing errors, we reserve the right to make changes to products that have already been delivered at any time and without prior notice. For this reason, MS Schippers cannot be held responsible for the contents of this document.

## General safety instructions

The owner of the AutoHoofClean pump must ensure that this manual is always available to the operating personnel.

Keep the equipment out of reach of children and unauthorized individuals.

The user is responsible for the safe operation of the AutoHoofClean pump. You must comply with all safety instructions before you can work with the AutoHoofClean pump. Use proper personal protective equipment (clothing, goggles, dust mask, earmuffs, gloves).

NEVER allow untrained personnel to operate the AutoHoofClean pump.

The AutoHoofClean pump is designed for use on cows.

Always mount the AutoHoofClean pump in the holes especially designed for this purpose. Always mount the AutoHoofClean pump on a flat wall.

Make sure that you always use earthed outlets and that the right water pressure (2-6 bar) is on the system at all times.

If the system is connected to the drinking water system, the latter must be equipped with a backflow prevention device that covers the risk of backflow (INTERRUPTION). Consult the drinking water company or your installer.

## The AutoHoofClean pump

Congratulations on the purchase of your AutoHoofClean pump (AHC). The AHC is a device with which you can clean and disinfect the hooves of cows in order to prevent hoof diseases like mortellaro's disease.

The AHC pump is a dosing system which pumps MS Hoofclean & other product (for example MS Formades) combined with water into the AHC mat.

The AHC pump can dose 2 different products on different days, there are 4 connections for the mats where this can be done. The mats cannot be controlled simultaneously, but per mat at specific times.

This is integrated into the programme.

This document describes how to use the device.

The AutoHoofClean pump consists of a stainless steel enclosure with a touch screen to operate the pump. The valves ensure that the right amount of disinfectant and cleaning agent is sent to the mats at all times.



#### Parts of the AutoHoofClean pump



No.	Description:
1.	Handles
2.	Touchscreen
3.	Water filter
4.	Plug/chassis part:
5.	USB port
6.	Geka coupling

#### Technical data of the AutoHoofClean pump

Device type	AutoHoofClean pump
System construction	Stainless steel housing
Complies with the guidelines	CE
Dimensions	L=465mm W=269mm H=416mm
Weight	
Operating pressure water (min/max)	2-6 bar
Storage and operating temperature	5 - 35 °C

## Set up:

In order for the AHC to function properly, it is important that the system tanks, water hoses and pump unit are set up properly. This is important to prevent siphoning. Below is a diagram of the recommended set-up. Any other set up is at the owner's risk.

- 1. The jugs of Hoofclean & other product must be placed at approximately the same level as the mat. The jugs should NEVER be placed in an attic.
- 2. The pump unit should be placed at about 1 to 2 meters above the mat (and should also not be placed in an attic).
- 3. The hoses to the mats may not be higher than 1 metre above the AHC pump. Below is an illustration of the recommended set up.



Below are two more set ups that are NOT good because siphoning may take place.



Figure 1.1 Jug above the AHC pump.



## **Commissioning and use**

In this chapter you will learn how to prepare the AutoHoofClean pump for use step by step and how it works.

## Attaching the AHC

2 bolts and plugs are supplied to mount the AutoHoofClean pump properly.

Choose the desired height at which the AHC should be mounted and drill 2 x 8 mm holes horizontally at 345mm. This is the distance of the holes where the AHC is mounted. Insert the plugs into the holes and screw in the bolts. The AHC can be mounted on them. Once you have mounted the AHC tighten the bolts as much as possible to lock the AHC.



## Water connection to the AHC

First make sure that the AHC is connected to the water supply. You can do this by connecting a water hose with a GeKa coupling to the left side of the unit (see figure 2). Always make sure that the water hose has a hose clamp! This is important to prevent leakage.





Mount the filter housing, check whether the filter cartridge has been inserted. (figure 2.2)



## Installation of suction pumps

2 suction pumps must be connected to introduce disinfectant and detergent into the system. Holes are provided at the bottom of the enclosure to connect the suction pumps. The pump at the left hole (1) must be connected to Hoofclean. The pump at the right hole (2) is



When you look at the AHC from the bottom, it looks like this:



To be able to use the pumps, the supplied suction hoses must be connected to the pumps. This should be done as follows:

Step 1: Unscrew the black cap from the pump and remove the red plug (see arrow in figure 4.2). Keep the black cap at hand!



Step 2: Slide the black cap that was unscrewed in step 1 over the suction hose.



Step 3: Insert the hose into the pump until it can go no further and tighten the cap back onto the pump.





Step 4: Check by gently pulling the two hoses to ensure that they do not slip.

## Installation of dry-running sensor/hose connector

The pump comes with dry-running sensors and hose connectors that will give a warning when your containers are (almost) empty. This chapter explains how to connect these correctly to the transparent suction hoses and place them into the jugs.





2. Drill a hole in the cap (20mm) of your jug and insert the cable of the dry-running sensor.



3. Connect the dry-running sensor to the connectors provided for this purpose on the enclosure. (left HoofClean, right other product)





4. Fit your hose connector to the dry-running sensor



5. Take the supplied tailpiece and attach the transparent suction hose.



6. Place the empty detector in the jug and tighten the cap lid on the jug. Make sure that the dry-running sensor is touching the bottom of the container.



7. Place the clip around the hose as shown below. Make sure the distance of the bottom side from the clip to upside empty detector is 24 cm. For mounting use M6x25 hex bolt, M6 plain washer and M6 torque nut.







## Connecting mats to the AutoHoofClean pump

To send the liquid to the mats they need to be connected to the AHC enclosure. Four GeKa couplings are fitted to the bottom of the cabinet for this purpose. The GeKa couplings run from the left (behind the water filter) to the right and are numbered 1,2,3,4 (figure 5).



Figure 5

Screw on the required number of mats to the GeKa coupling. Then tighten these GeKa couplings until they are watertight (figure 5.1).



Finally, the system must be powered up. Insert the cable with plugs into the pump unit. The connection is on the left-hand side of the enclosure. Insert the blue plug and lock it by turning it (so that the iron part is on top). Check if it is properly locked by pulling it gently.



Plug in the power cord. Make sure it is earthed and that the circuit is connected to an earth leakage protection.

The display will turn on and the following screen will appear (figure 5.4):



## Setting the language and time.

Before you start setting up your AutoHoofClean, it's important to configure the language/time correctly. This chapter explains how to set the desired language etc.

1. Press the cogwheel in the upper right corner (see red arrow image on previous page). The following screen will appear.



2. Click on Settings and then on Installer in the lower right corner. You will see the following screen.



3. Here you can set the desired maximum language/time. Press the "blue value", for example English, and change it with the left and right arrows.



## **Starting and testing**

To be able to start up the system for the first time, the mats must be filled with water. You can do this in the test screen. The test screen can also be used to test if there is actually liquid coming out of a specific connection. This chapter explains how the test screen works.

- 1. Press the cogwheel in the top right corner and go to settings.
- 2. Press the "test" icon on the bottom left. The following screen will appear.



In this screen you can test the following functions of the system.

- You can choose between: water, water+Hoofclean and water+other product.
- You can choose which mats you want to test/fill.
- You can set the time of the test circuit. You can choose between 1, 10, 30 or 60 minutes. Please note that during the test, the mats will be filled one by one from the bottom one up. If you fill mat 1, 2 and 4 for 30 minutes, the total test will run for 90 minutes. First mat 1 is filled, then mat 2 and finally mat 4.

The status shows where the test is located.

To start the system with a new (dry) mat, the recommended test programme is of 30 minutes of water. To do this, select the mats you have connected by pressing the relevant box, so that a checkmark appears. For the programmes "water + headclean" and "water + other product" you can check whether the cleaning agent is also sucked in through the transparent suction hose.

## Select animal housing type

The AutoHoofClean pump is specifically designed for 2 different types of animal housings for milking, namely: a milking parlour or a milking robot. This chapter explains how to select and set the animal housing type.

1. If you press the cogwheel in the upper right corner, you will get to the following screen:



2. Now press the "Claw treatment" icon and the following screen will appear.



3. Press and hold the padlock icon in the upper right and enter code 4444 to change the settings.



4. All values that can be changed are blue.



5. When you press "more" you will enter a screen where you can select the animal housing type.

When you press the blue value "milking robot", you can choose between milking robot and milking parlour.

milking parlour. The program will adapt accordingly.

## Settings for the milking robot

You have configured "milking robot" as explained in the previous chapter, and this chapter will explain how to set the other options. If you are using the AHC in a milking parlour, this chapter does not apply to you and you can go to chapter: "settings for the milking parlour" on page 16. You can go through the screens by pressing "more". If, for example, you have pressed "more" one time too often, then you can restore this by pressing "more" until you are back in the correct screen.

#### Setting the number of mats

In the chapter "connect mats", you have connected your water hoses to the GeKa couplings. To ensure that water comes out of the correct hoses, this must be set in the program.

Here you can set 4 mats. You simply click on the value yes or no and then on the checkmark or cross to adjust it.

Example: Mat 2 should become active.

- Click on the value "no"
- Change it to "yes"
- Press the checkmark, the program will now show that connection 2 is active.



#### **Configuring the problem**

After you have configured the mats, the problem must be configured as well; this is the severity of the mortellaro disease. Press "more" when you are in the screen of page 20 (figure 8) There are 3 values that can be set for the problem, these are "low", "normal" and "high". To change this, press the value "low", "normal" or "high", then use the arrows to change the problem. Confirm by pressing the green checkmark or cancel by pressing the red cross. Always start on "high". If you notice that this is no longer necessary, you can adjust this downwards and thus set the programme to "normal" or "low".



#### **Configuring the passages**

To get to the "Claw treatment" start screen, follow the steps of the chapter "Select animal housing type".

The correct passages must be set (see Figure 8.1) for the "milking robot" program to work properly. If necessary, this can be looked up in the management package of the milking robot. The passages that need to be set are the number of cows that pass through on one day. The values that can be set are: from 216 passages to 600 passages with a step size of 48. Always choose the value that is closest to it!

To set the correct value, press the blue value again, use the left and right arrows to change the value and set the relevant value. Confirm by pressing the green checkmark or the red cross.

#### **Configuring other products**

In order for the program to use the correct dosages for the amount of disinfectant used, it is important that it is set correctly. You can do this in "Other product" under the heading "claw treatment".

There are 3 different built-in programs for this, namely: Megades, Formades and Product C. To set a program, press "more" at the bottom of the screen, and you will return to the following screen:

(	Claw Treat	tment
Barn Type :	Milking Robot	Mat 1 Connected : No
		Mat 2 Connected : No
		Mat 3 Connected : No
Other Product :	Megades	Mat 4 Connected : No
Close		More

If you click on the blue value at: "Other Product" you will get to the following screen. Here you can choose from 3 different values: Megades, Formades and Product C. By pressing the arrows you can choose which disinfectant to use. Choose the right one and the program will adjust accordingly.



The program for the milking robot is now completely set.

### Settings for the milking parlour

If you use the AutoHoofClean in a milking parlour, this chapter will explain how to set up the other options for this.

#### Setting the number of mats

In the chapter "connect mats", you have connected your water hoses to the GeKa couplings. To ensure that water comes out of the correct hoses, this must be set in the program.

Here you can set 4 mats, you simply click on the value yes or no and then on the checkmark or cross to adjust it. Example: mat 2 must not become active.

- Press on the value "yes"
- Change it to "no"
- Press the checkmark, the programme will now show that mat 2 is active.

19-07-2021	10:42			
Claw Treatment				
Barn Type	: Milking Barn	Mat 1 Connec	ted : Yes	
AA'll in - Chart		Mat 2 Connec	ted : Yes	
Milking Start	Milking Start : Manual		ted :No	
Other Product	t : Formades Mat 4 Connected : No			
Close More				
<b>MS</b> Schippers				
			Figure 9	

ATTENTION: Up to 2 mats can be used in a milking parlour.

#### **Milking start function**

In the "parlour setting" there is a function to set when the cows are milked and when the AHC should be active. The selectable values are "automatic" and "manual". To change this, press the blue value and then select "automatic" or "manual" and confirm this with the green checkmark or cancel it by pressing the red cross.

#### Start automatic milking

After the selection, the milking starts "automatically". Press "more" and a screen with adjustable times will appear as shown below:

In this screen you can set how many times you milk. In "milk quantities start" this can be set to 1, 2 or 3 start times. On the right you can set the times at which you want to milk and also the duration of these rounds, this is called duration.

#### Start manual milking

If you choose not to do the milking at the same times every day, you can choose to start the AHC manually. For this, you have to set the value "milking start" to manual (see Figure 9.3).

A manual action is needed to start and stop the AutoHoofClean (start or stop control) (Figure 9.5&9.6). After a stop command, the system is flushed with water. The system can also be stopped, however this is not recommended.









#### **Configuring the problem**

After you have set the mats, the mortellaro problem must be configured. Press "more" again. There are 3 values that can be set for the problem, these are "low", "normal" and "high". To adjust this, press the value "low", "normal" or "high".

You can now change the problem with the arrows. Confirm by pressing the green checkmark or cancel by pressing the red cross. Always start on "high". If you notice that this is no longer necessary, you can adjust this downwards and thus set the programme to "normal" or "low".

19-07-2021	10:50	)	
	Claw Trea	atment	
Problems : H	igh		
Passages : 8	0 per hour		
	ose	More	
M	S Scl	hippe	arc
		Fig	ure 10

#### **Configuring the passages**

The correct passages must be set in order for the "milking parlour" program to work properly. This can be found in the farmer's data. The passages that need to be set are the number of cows that pass through per hour. The values that can be set are: from 40 passages to 200 passages with a step size of 20. Always choose the value that is closest to it!

To set the correct value, press the blue value again, use the left and right arrows to change the value and set the relevant value. Confirm by pressing the green checkmark or the red cross.

#### **Configuring other products**

In order for the program to use the correct dosages for the amount of disinfectant used, it is important that it is set correctly. You can do this in "Other product" under the heading "claw treatment".

There are 3 different built-in programs for this, namely: Megades, Formades and Product C. To set a program, press "more" at the bottom of the screen, and you will return to the following screen:



If you click on the blue value at: "Other Product" you will get to the following screen. Here you can choose from 3 different values: Megades, Formades and Product C. By pressing the arrows you can choose which disinfectant to use. Choose the right one and the program will adjust accordingly.



The program for the milking parlour is now completely set.

### Meaning of the icons on the screen

All the icons are explained in this chapter so that you can understand the AutoHoofClean really well. The following pictures show some icons that are displayed when operating the AHC.



19-07-2021	11:07	¢
12:00 <b>1</b> 2:20	1 100%	<b>2</b> 100%
Milking Robot, H	igh, 312 Passages/day	Formades
M	On the bottom right product that you have sure that this always the product that you using!	you can see the ve chosen, make corresponds to are actually

## Hoofclean & other product empty message

This message appears on the screen, if your system indicates that it is detecting an (almost) empty jug:



You must now replace your jug. Place a new jug under the pump, remove the cap and place the empty jug with a cap in the full container and screw the cap back on. The message disappears and you can continue working with the AHC.

## Saving the logbook

There is a USB port on the left side of the enclosure (see arrow figure 11.1), this is made in order to be able to read data about the use of the AHC. (The USB stick is included in the delivery) This function can also be used to read anything that has been changed in the programme and to trace any errors.

- 1. Go to settings.
- 2. Press "Save Logbook" and you will see the following screen





3. Insert a USB stick in the connection.



4. Press "Save log" in the bottom right corner. The data is now saved on the USB stick.



5. Wait until the screen indicates that the USB stick can be removed.



6. The programme can be read in Excel on a laptop/PC.

## Screen installer

On the installer screen you can set the date, time, language and screen brightness. Furthermore, there is the option to read the "Counters" in the program. Finally, in "Configuration" you can view and set a number of things, which are all explained in this chapter.

## Setting the language and time

- 1. Go to settings.
- 2. Press installer at the bottom right.
- 3. Hold the lock for a few seconds and use code 4444 to unlock and set several functions.
- 4. A language/time icon appears at the top left. Here you can make the changes. All blue values can be changed without a code.
- 5. Use the arrows on the right to go down and change other settings.



## Counter screen

In the counter screen you can find information about the number of pulses that the AutoHoofClean has detected. This is mainly for information purposes and can be useful if your system has a possible malfunction. In this screen you can see how many pulses your system has sent on one day and you can also see the total number of pulses from the beginning until now.

Finally, there is a row where you can see how much water your system has lost, which would indicate that there is a leak somewhere. To get to this screen, click on "Counters" at the top and use the arrows to switch screens. The screens that apply are shown below. (Figure 13&13.1)



In the "alarm level" headline you can see some important information. By pressing the arrows on the right-hand side of the screen, you will see the following screen, among others. Here you can see how many litres are left for your filter and the total number of litres that can go through the filter (Figure 13.2)



## Configuration

Two things can be set in the configuration screen. These 2 things only apply if you have a milking parlour. This means that you can skip this chapter, if you have a milking robot.

If you use a parlour and want to start it manually, you can choose whether you want to enter a code each time or not. The adjustable lines for this are:

- Milk start code
- Milk stop code

There are also other values displayed in the configuration screen; these are for information only and you do not need to do anything with them.

1. Press the "Config" icon at the top of the screen to open the next screen. (figure 14)



2. In this screen you will see the "milk start/stop code" value. You can select it if you so desire, this means that if you do not want any code to be entered when you start the milking process, you select "no", and if you want a code to be entered in order to start and/or stop you select "yes".

3. If you press the down arrows, you will get to the following screens. You cannot change anything in these screens as they are for information purposes only, and can be useful if there is a malfunction in the system. You do not have to do anything with them.



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## Screen "info"

There is an info screen where you can see a number of things. Some items on it may be useful when you have a malfunction.

Here you can see what is the installed software, as well as the serial number of the circuit board. You cannot make any changes in this screen, as it is for information only. This information can be useful, for example, when you call customer service who may ask for it.

An explanation of where you can find this information follows below:

- 1. Press the cogwheel at the top right.
- 2. /the screen will be displayed when you press info.



## **Maintenance**

We have tried to make the AutoHoofClean pump as maintenance-free as possible. The water filter is the only part that needs to be replaced for the unit to work properly. When the filter needs to be replaced, the message "Filter needs cleaning" will appear on the display (see figure 16). This message will appear after a certain number of litres have passed through the system. The next step will explain how to replace the filter.



## Replacing the water filter (hardware)

The water filter is easily accessible at the bottom of the AutoHoofClean pump. To replace the filter, it can be detached from the enclosure of the AutoHoofClean, which can be easily put back after the filter has been replaced.

The following picture (17) shows the filter and how to unscrew it.

Step 1: Always turn off the tap when changing the filter, otherwise water will continue to flow and the surrounding area will become wet.

Step 2: Hold a bucket under the filter while you unscrew it. Figure 17 shows an arrow indicating how to unscrew the filter.



Step 3: Now remove the filter from the tube and put in a new filter the same way.

Step 4: Screw the new filter back onto the AutoHoofClean. The arrow in Figure 17.1 shows how to tighten the filter.



## Replacing the water filter (programme)

Changing the water filter must also be indicated in the programme.

Since you have changed the filter manually, you must also do so in the programme, if you do not make this change you will get an error message, even though your filter was replaced just a little bit ago.

To reset the counter in the program, follow these steps.

- 1. Press the cogwheel at the top right and go to settings.
- 2. Press "replace filter".
- 3. Press once on cleaned/replaced in the lower right-hand corner of the screen.
- 4. Now also the program knows that a filter has been replaced and it will start counting from the beginning again.
- 5. Click on close to return to the main screen.



You have now completed all the steps correctly and can use the AutoHoofClean pump properly. MS Schippers wish you much enjoyment and good results with the use of your AutoHoofClean pump.

# The Schippers Group Let's beat AMR with HyCare

NL Klantenservice BE Klantenservice/Service Clientèle DE Kundenservice DK Kundeservice IT Servizio clienti ES Servicio al cliente UK Customer Service CA Customer Service FR Service Clientèle EX Customer Service Export +31 (0)497 339 787 +32 (0)14-820713 +49 (0)2833-923630 +45 89884187 035-4490369 +34 931816433 +44 (0)01733592049 +1 866 995-7771 +33 (0)2 99 61 40 40 +31 (0)497 700 278