8 February 2021

Installation and operating manual

CalfRail attachment

Circulation cleaning

TA version S 3.06 and higher

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1. Introduction

This operating manual enables users to operate the CalfRail circulation cleaning attachment safely and as intended.

- Please read this operating manual carefully before putting the CalfRail circulation cleaning attachment into service.
- Keep the operating manual readily available at all times and pass it on to the next user.
- Observe all of the warnings and safety instructions in this operating manual at all times.

1.1 Functional description

The CalfRail circulation cleaning attachment adds fully automatic circulation cleaning of the CalfRail.

Your advantages:

- Automatic suction hose cleaning ensures a high degree of hygiene.
- Time saving as manual work steps are no longer necessary.
- Up to 4 automatic suction hose cleanings per day.
- Longer durability of the hoses used.

1.2 Manufacturer's contact details

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2. Important safety instructions

2.1 Intended use

The CalfRail circulation cleaning attachment, which is mounted on the automatic feeder, is used for fully automatic cleaning of the complete hose system of the CalfRail.

2.2 Target group

2.2.1 Necessary qualifications of the owner

The owner must be a trained farmer or have good practical experience in farming. He must know the relevant accident prevention regulations and generally accepted safety regulations.

2.2.2 Necessary qualifications of the service technician

Only trained service technicians are authorized to install the CalfRail circulation cleaning attachment, commission it, and perform maintenance and repairs.

Service technicians are specialists with the appropriate qualifications. Service technicians are able to assess the work assigned to them and detect potential risks on the basis of their technical training as well as their knowledge of the relevant standards. They are familiar with the relevant accident prevention regulations, generally accepted safety regulations and country-specific standards and provisions.

2.3 Residual risks

Hazards to health and life caused by the CalfRail circulation cleaning attachment:

⚠ WARNING!

Danger from electric current

The automatic feeder to which the CalfRail circulation cleaning attachment is connected is electrically operated.

► You must observe the general precautions for handling electrical equipment.

- Read the operating manual before putting the CalfRail circulation cleaning attachment into service.
- Keep children away from the CalfRail circulation cleaning attachment.
- Only use genuine spare parts from the manufacturer.
- Turn off the automatic feeders and disconnect the power plug before carrying out any maintenance or cleaning work on the CalfRail circulation cleaning attachment.
- The electrical system of the CalfRail circulation cleaning attachment present the following special hazards:
  - **Electrical discharge**. If there is an electrical or voltage breakdown, electric current will flow through parts of the CalfRail circulation cleaning attachment that are normally insulated. Touching the unit can cause a fatal electric shock. The CalfRail circulation cleaning

attachment must be checked regularly for electrical safety in compliance with national regulations (repeat inspection). Make sure that a 30 mA residual current device (RCD) is installed.

- **Short circuit, indirect contact**. If there is a short circuit, current at many times the level of the operating current can flow. Touching the unit can cause a fatal electric shock. Make sure to install fuse protection (provided by the customer) and an earth leakage circuit breaker (ELCB) of 30 mA in compliance with local regulations.

- **Burns**. The solenoid valves can reach temperatures of up to 100 °C. Touching them can cause burns. Do not touch the solenoid valves during operation.
- **Poisoning**, **difficulty in breathing, suffocation**. Liquids used to clean the teats may contain substances that are hazardous to human health. Avoid direct contact and always wear protective gloves and goggles when handling these liquids.
- **Rough ambient conditions**. The CalfRail circulation cleaning attachment is operated in a harsh working environment. Damage of any kind can result in hazards. Regularly check the CalfRail circulation cleaning attachment for damage and have any damage rectified as necessary by a service technician.

Property damage caused by the CalfRail circulation cleaning attachment

The following property damage can result from the CalfRail circulation cleaning attachment:

- **Infection**. Improper cleaning can result in calves becoming infected by pathogens at the teat. This can lead to medical costs or cause the death of the calves. Observe the specifications issued by the manufacturer of the cleaning agent that is used.

2.4 Your duties

The owner has a duty to:

- Prevent misuse by children.
- Keep children, young persons and persons with physical, sensory or mental disabilities away from the CalfRail circulation cleaning attachment.
- carefully read and understand this operating manual before putting the CalfRail circulation cleaning attachment into service.
- Only allow operating personnel to work with/on the CalfRail circulation cleaning attachment who
  - Are familiar with the basic operational safety and accident prevention regulations.
  - have been instructed in the work with/on the CalfRail circulation cleaning attachment.
  - Have read and understood this operating manual.
- Comply with the operational safety and accident prevention regulations.
- When cleaning the HygieneBox, observe the safety instructions stipulated in the safety data sheet for the cleaning agent.
- Wear the safety equipment specified in the safety data sheet for the cleaning agent, such as goggles and chemical-proof protective gloves, when cleaning the HygieneBox.
- Provide the required personal protective devices for the operator.
- Operate the CalfRail circulation cleaning attachment only as intended.

- Keep all safety signs on the CalfRail circulation cleaning attachment in legible condition and renew any that become damaged.
- Do not change the design or functions of the CalfRail circulation cleaning attachment.
- Operate the CalfRail circulation cleaning attachment only in perfect functional condition.
- Subject the CalfRail circulation cleaning attachment to regular visual inspection for possible damage and have it rectified by a service technician if necessary.
- check the safety devices applied to the CalfRail circulation cleaning attachment regularly for perfect working order.
- make sure the CalfRail circulation cleaning attachment is operated only with safety devices installed.
- make sure that the CalfRail circulation cleaning attachment and all parts which can be manually cleaned or which are needed for cleaning procedures are easy to access at all times.
- protect the CalfRail circulation cleaning attachment and all corresponding cables from exposure to sunlight.
- Use only original accessories, original spare parts and original wearing parts. These are available from your dealer.
- Keep the environment of the CalfRail circulation cleaning attachment clean and tidy.

2.5 How am I warned of hazards?

Hazards are indicated directly on the CalfRail circulation cleaning attachment by safety labels (warning signs, instruction and prohibition notices), and in the operating manual by specially marked hazard descriptions.

The warnings for hazards that can cause death or injury to people are emphasized more than those for material damage, for example through the colors, hazard words or symbols used.

Safety labels are an important element of the overall safety concept of the CalfRail circulation cleaning attachment. They provide warnings about hazards and explain how to avoid them.

Make sure that all the safety labels are fitted to your CalfRail circulation cleaning attachment and that they are in a legible condition. If the safety labels are difficult to read, replace them immediately. New safety labels are available from Förster-Technik GmbH.

2.5.1 What are the components of a hazard description?

A hazard description always consists of the following elements:

- Hazard word (danger, warning, caution, attention)
- Type of hazard (what can happen?)
- Location of hazard (where can it happen?)
- Actions necessary for preventing the hazard (what should I do?).

2.5.2 Potentially fatal hazards or health hazards

Depending on their severity and the probability of them occurring, hazards that can cause death or injury to people are indicated by a hazard symbol ⚠ (warning triangle with exclamation mark) and the following hazard words:

⚠ DANGER!

The word DANGER indicates an imminent hazard that will lead to death or serious injury.

Warning signs in the operating manual: **DANGER** (white text on red background).

⚠ WARNING!

The word WARNING indicates a potentially hazardous situation that could lead to death or serious injury.

Warning signs in the operating manual: **WARNING** (black text on orange background).

⚠ CAUTION!

The word CAUTION indicates a potentially hazardous situation that could lead to minor injury.

Warning signs in the operating manual: **CAUTION** (black text on yellow background).

2.5.3 Material damage

NOTICE!

The word ATTENTION indicates possible material damage. The CalfRail circulation cleaning attachment or an object in its vicinity may be damaged, for example a calf.

Prohibition notice on the CalfRail circulation cleaning attachment: a pictogram crossed out in red in a white circle with a red border indicates something you are not allowed to do.

Operating manual: white text on blue background

2.5.4 Safety signs

Different safety labels are attached at the hazardous points on the CalfRail circulation cleaning attachment. Warning signs, prohibition and instruction notices.

What are warning signs?

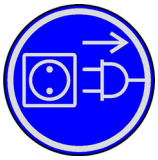
Warning signs consist of:

- A pictogram in a yellow triangle illustrating the potential hazard.

What are prohibitory signs?

Prohibitory signs have a pictogram of the prohibited action in a red circle with a line through it. See the adjacent example. They graphically depict the prohibited action. In this example, the hose with a line through it means that you may not use high-pressure cleaners.

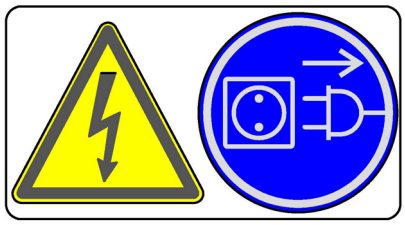
What are instruction notices?



Instruction notices show a pictogram of what you are being instructed to do in a blue circle. They illustrate what you have to do. In the example, the pictogram means that you must always disconnect the plug first.

2.5.4.1 Warning signs on the machine

Danger of death by electric shock



Burning/scalding

Warning about injuries to the hand

No spraying

2.6 Safety devices

The safety devices at the machine are an important part of the safety concept and help prevent accidents.

- Do not remove or change the safety devices unless the corresponding safety instructions have been complied with.
- Put the machine into service only once all safety devices have been fitted and are in the guard position!

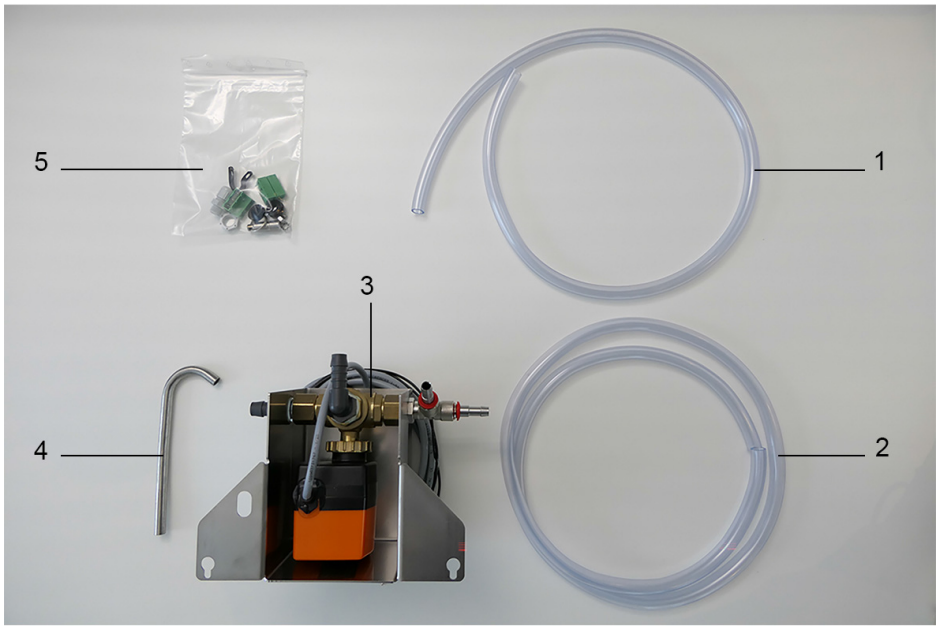
2.7 Structural alterations

The CalfRail circulation cleaning attachment must not be subjected to any unauthorized alterations at any time.

Only genuine spare parts, wearing parts and accessories may be used, since any warranty claims will otherwise be void.

3. Scope of delivery

3.1 Scope of delivery of the CalfRail circulation cleaning attachment



1 Gully hose
2 Flushing hose
3 External ball valve
4 Discharge pipe
5 Accessories Kit

4. Commissioning

This chapter describes how to retrofit the CalfRail circulation cleaning attachment.

Retrofitting of the CalfRail circulation cleaning attachment may only be performed by a service technician.

The end user must provide you with the operating manual for the automatic feeder and the safety data sheets for cleaning agent.

NOTICE!

► In order to use the CalfRail circulation cleaning attachment with all its functions, the automatic feeder must be updated to the latest program version.

4.1 Installing the CalfRail circulation cleaning attachment

To install the CalfRail circulation cleaning attachment:

⚠ DANGER!

Fatal electric shock

The external ball valve is operated using a 220 V power supply. A uncovered external ball valve can lead to a lethal electric shock.

► Always install the ball valve cover after removal.

1. Fasten the external ball valve to the back of the automatic feeder.

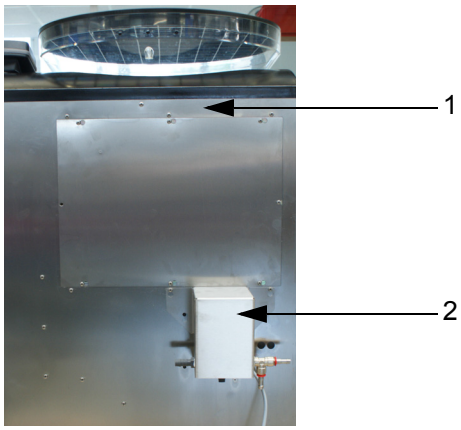


Fig. 4-1 Rear panel automatic feeder with mounted CalfRail circulation cleaning attachment

1 Rear wall of the automatic feeder
2 CalfRail circulation cleaning attachment

2. Go to the left side of the automatic feeder.
3. Remove the dummy plug.

Fig. 4-2 Left side of the automatic feeder

1 Left side of the automatic feeder
2 Dummy plug

DANGER!

Fatal electric shock!

The automatic feeder is powered by electricity!

► Switch off the automatic feeder and disconnect the mains plug before starting the retrofit procedure.

4. Replace the dummy plug with a feed-through grommet.
5. Release the two screws fastening the powder funnel to the automatic feeder.
6. Release the screws fastening the grounding cable to the powder funnel.
7. Lift the powder funnel off the automatic feeder.

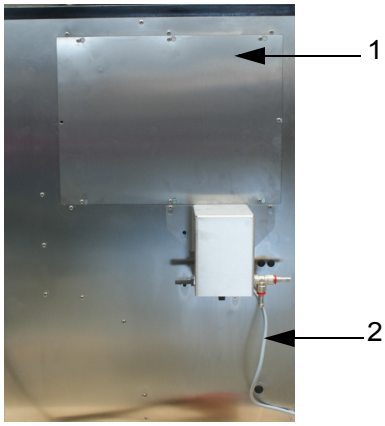


Fig. 4-3 Rear wall of the automatic feeder

1 Control box cover plate
2 Cable for the CalfRail circulation cleaning attachment

8. Unscrew the cover plate from the control box of the automatic feeder.
9. Feed the cable of the CalfRail circulation cleaning attachment through the feed-through grommet.

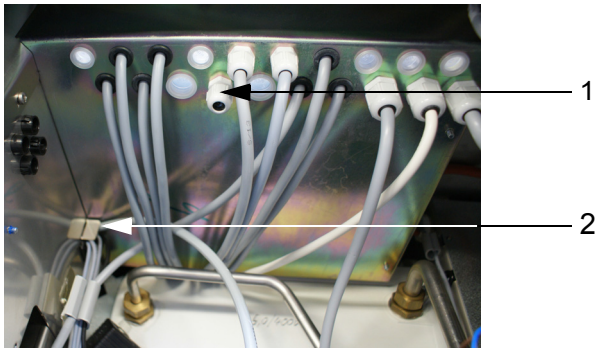


Fig. 4-4 Automatic feeder rear wall interior

1 Cable gland
2 Cable for the CalfRail circulation cleaning attachment

10. Route the external attachment cable through the cable gland to the circuit board.
11. Connect the cable to the attachment according to the circuit diagram.
12. Install the control box cover plate.
13. Screw the discharge pipe onto the front of the automatic feeder.

    Note: If a supplementary liquid dosing unit is installed, the supplementary dosing unit hose is fastened using the same screws as the discharge pipe.

Fig. 4-5 Discharge pipe installed on the front of the automatic feeder

14. Install the powder funnel.
15. Drill a 15 mm diameter hole in the bottom of the automatic feeder.

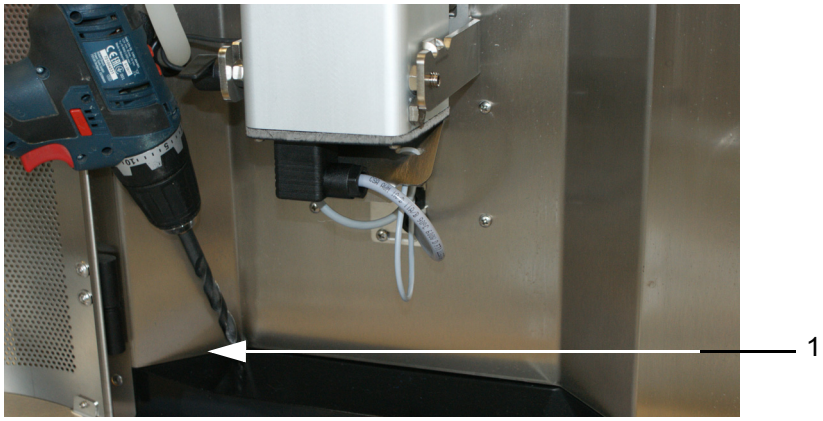


Fig. 4-6 Drilling a hole for the flushing hose

1 Position the drill in the left corner

16. Route the flushing hose to the discharge pipe.

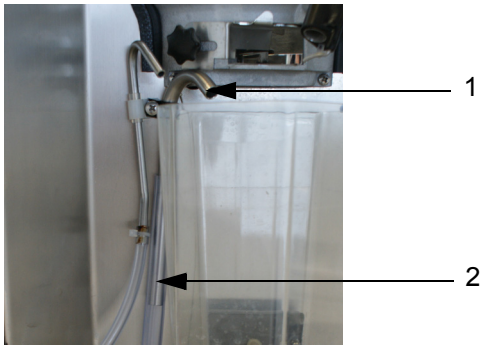


Fig. 4-7 Flushing hose fastened to discharge pipe

1 Discharge pipe
2 Flushing hose pushed onto discharge pipe

17. Push the flushing hose over the discharge pipe.

    Note: When using calibration scales, the flushing hose must not touch the mixer otherwise this will falsify the measurements.

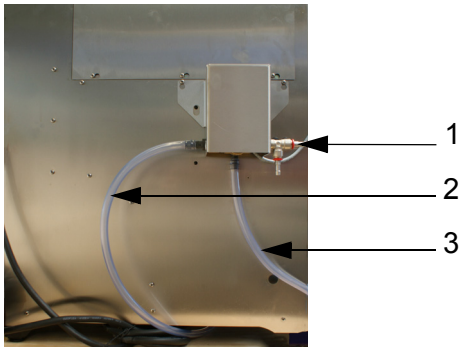


Fig. 4-8 CalfRail circulation cleaning attachment with mounted hoses

1 Connection point for CalfRail return line
2 Flushing hose
3 Gully hose

18. Route the flushing hose through the hole drilled in the bottom of the automatic feeder.
19. Route the flushing hose to the CalfRail circulation cleaning attachment.
20. Attach the flushing hose to the CalfRail circulation cleaning attachment.
21. Attach the gully hose to the CalfRail circulation cleaning attachment.
22. Route the gully hose to the drain.
23. Attach the return line of the CalfRail to the connection point of the CalfRail circulation cleaning attachment.

    Note: If only one CalfRail is connected, the dummy plug included in the scope of delivery must be attached to the second connection point on the CalfRail circulation cleaning attachment.

4.2 Software updates

When using the CalfRail circulation cleaning attachment, the automatic feeder must always be kept updated to the current program version.

The options available for your equipment can be seen in the dealer area of Förster-Technik's web site **www.foerster-technik.de**.

4.3 Activation in the setup

The CalfRail circulation cleaning attachment must be activated in the Setup of the automatic feeder.

1. Switch the automatic feeder off.
2. Press [2] and keep the button pressed while you switch the automatic feeder back on.
   After a short time, the **Setup menu** will appear in the display.
3. Select the **Stations > Feeds > CalfRail** menu item from the Setup menu.
4. Select the desired CalfRail with [<] [>].
5. Set **CR Circulation** to **Yes**.
6. To exit the setup, repeatedly press [Esc], until the message **Exit setup?** appears. Confirm with [Enter].

4.4 Cleaning

For reasons of hygiene you must completely remove any coolant and lubricant residues from the system before commissioning it. To do this, perform a suction tube cleaning cycle (see 6. "Cleaning" - 18).

⚠ WARNING!

Beware of chemical burns from cleaning agents.

The cleaning agent can cause chemical burns to your eyes or hands.

► Always wear goggles and chemical-proof protective gloves when using cleaning agents. Follow all the safety instructions listed in the safety data sheet for the cleaning agent and wear the specified safety equipment.

5. Hygiene

As a farmer with experience in calf rearing, you understand how unhygienic conditions affect the health of your calves. Diarrhea and respiratory infections are frequently occurring infectious diseases in calves.

Every sick calf involves additional costs, for example for veterinarians and medication, and requires extra time for care.

The younger the calf, the weaker its immune system, and the more prone to infection it will be.

The possibility of infection can never be completely eliminated, but it can be minimized by taking measures to ensure good hygiene.

Maintaining cleanliness is one important and easy measure that helps prevent infectious diseases.

Through proper cleaning at regular intervals, every calf-rearing business can reduce the risk of infection for its calves and save money as a result.

Measures to ensure hygienic conditions save time and money.

What are infections? An infection occurs when germs invade and multiply in a host.

Germs are all around us. However, they are not dangerous until they multiply in great numbers. The risk of infection increases with the number of germs.

When germs get into your animal feed, such as milk, they can spoil the feed and make it inedible.

When germs get into your calves, for example from infected feed or other infected calves, your calves can become sick and die.

Both situations result in costs that you can minimize by taking measures to ensure hygienic conditions.

As a farmer, it is your job to identify sources of infection and bring them under control.

So how do you prevent infections? By keeping animals in good conditions, with good drinking water and feed quality and, most importantly, through cleanliness.

Proper cleaning is an important way of ensuring hygienic conditions and also prevents infections.

If the automatic feeder is not cleaned or is cleaned improperly, germs, which are abundant in the environment, can enter the nutrient-rich feed and multiply. When they drink the feed, calves can become infected, sick and even die.

Proper cleaning of the automatic feeder reduces the number of germs and therefore the risk of infection.

The cleaning chapter (see 6. "Cleaning" - 18) explains how to clean the automatic feeders properly.

6. Cleaning

Every day you must clean all parts of the **suction tube** that come into contact with liquid or powder animal feed.

The type of feed you are using also plays a role here. For example, raw milk contains more germs than pasteurized milk. Therefore, if you are feeding raw milk, you must clean the feeder more often than if you are using pasteurized milk.

NOTICE!

► For more information about cleaning, see the operating manual for your automatic feeder.

Remember:

- The cleaning agents must be suitable for use within a temperature range of 40 °C to 58 °C.
- You must follow all safety instructions in the safety data sheet for the cleaning agent you are using.
- You must always wear the protective gear, such as protective goggles and gloves, specified in the safety data sheet for the cleaning agent you are using.
- Undiluted cleaning agent may not be drained into the ground water or sewage system. Observe the recommendations in the safety data sheet for your cleaning agent and contact your water utility company and your sewage disposal company to find out which regulations apply to you.
- Observe the cleaning intervals recommended by the manufacturer of the cleaning agent as well as those recommended in this operating manual (see 7.2 "Maintenance intervals and activities" - 21).
- Never mix alkaline and acid cleaning agents.
- Make sure that the vapors of alkaline and acid cleaning agents can never mix.
- Observe the manufacturer's guidelines regarding the amount, temperature and concentration of cleaning agent used.
- Do all of the cleaning recommended in this operating manual.

NOTICE!

Never use cleaning agents containing chlorine as they can attack the materials of the CalfRail circulation cleaning attachment and impair its function

If this happens, your calves may not receive enough feed. This can lead to malnutrition, which can cause impaired growth and development, increased susceptibility to illness or even the death of your calves.

6.1 Cleaning agents

⚠ WARNING!

Chemical burns due to the cleaning agents used.

The cleaning agent can cause chemical burns to your eyes or hands.

► Always wear safety glasses and protective gloves when using cleaning agents. Follow all the safety instructions listed in the safety data sheet for the cleaning agent and wear the specified safety equipment.

6.2 Automatic cleaning of the suction tubes

The suction tube and the 3/2-way valve are automatically cleaned with the cleaning agent.

Cleaning agent is added automatically. You must check each day to ensure that the cleaning agent containers are full and that the cleaning agents are being dispensed into the mixer of the automatic feeder.

Note: When feeding fresh milk from an external milk tank, the heat exchanger and the connecting hose from the milk tank to the combination machine are not cleaned during automatic suction hose cleaning. These components must be cleaned separately via the heat exchanger or manual circuit cleaning. You can find information about frequency and procedure in the ***operating instructions of the automatic feeder***. If a SmartTank is connected to your combination feeder, the heat exchanger and the connecting hose from the SmartTank to the automatic feeder are cleaned automatically.

⚠ WARNING!

Chemical burns due to the cleaning agents used.

The cleaning agent can cause chemical burns to your eyes or hands.

► Always wear safety glasses and protective gloves when using cleaning agents. Follow all the safety instructions listed in the safety data sheet for the cleaning agent and wear the specified safety equipment.

The are 2 pre-set automatic suction tube cleaning cycles.

You set up automatic suction tube cleaning as follows:

1. Choose  **> Cleaning** in the **auto.** sub-menu. **Tube cleaning**.
2. In the **Cleaning/day** menu, you enter the required number of cleaning cycles. You can set a maximum of 4 cleaning cycles.

   Note: You should define at least 1 cleaning cycle per day in order to prevent unhygienic conditions.
3. In **SP 2 switchover n.** (option), enter if necessary the number of cleaning cycles after which the automatic feeder should switch to the second cleaning agent. The default setting is 3 cleaning cycles.

The lines below show the current count **SP 2 in x cleaning cycles**.

4. For **Cleaning 1**, enter the desired time of day.
5. For **Cleaning 2** (option), enter if necessary the desired time of day.

Note: Start the cleaning at a time when there is minimal entitlement to feed so that your calves do not have to wait too long for feed.

Note: If there is still feed in the mixer beaker at the set cleaning time, automatic cleaning will be postponed by a maximum of one hour. After that, any remaining feed will be pumped out if necessary via the mixer drain valve, and the cleaning cycle will be started.

7. Maintenance/servicing

This chapter covers the regular maintenance work and functional inspection of the CalfRail circulation cleaning attachment so as to ensure that the required standards of hygiene are maintained. Maintenance includes scheduled replacement of wearing parts, for example.

Visual and functional testing of components as well as replacement of simple wearing parts, such as the teat, can be carried out by the owner/operator.

Repair work as well as the replacement of wearing parts in the CalfRail circulation cleaning attachment may be performed only by a service technician.

7.1 Safety instructions

⚠ DANGER!

Fatal electric shock.

The electrical components of the automatic feeder are live.

► Always disconnect the mains plug of the automatic feeder before carrying out any work on the CalfRail circulation cleaning attachment.

⚠ WARNING!

Risk of burns due to hot surfaces.

The 3/2-way valve and the solenoid valves can reach temperature of up to 100 °C during operation or malfunctions. This can cause severe burns.

► Never touch the valves when they might be hot.

⚠ WARNING!

There is a risk of injury due to automatic start-up.

Reaching into places which are marked as danger of crushing areas can lead to hand injuries.

7.2 Maintenance intervals and activities

Note: If you detect any faults or damage to the CalfRail circulation cleaning attachment between the maintenance intervals recommended below, you must make sure they are rectified immediately by a service technician as required.

7.2.1 Daily

Visual inspection of the components

- The 3/2-way valve must be checked on a daily basis for leaks and damage. If any damage or wear is detected during the visual inspection, the valve must be replaced before operation of the CalfRail circulation cleaning attachment is resumed.
- The teat cleaning hoses must be checked daily for damage, leaks and wear. If damage or wear is detected during the visual inspection, the teat cleaning system must be deactivated before the faulty components are replaced by a service technician.

7.2.2 Annually

Every 12 months the suction hose and the gully hose must be replaced by a service technician.

8. Shutdown

You can shut down the CalfRail circulation cleaning attachment temporarily or permanently.

8.1 Temporary shutdown

To shut down the CalfRail circulation cleaning attachment temporarily, proceed as follows:

1. Pull off the return line of the CalfRail at the CalfRail circulation cleaning attachment and place the return line in the gully.

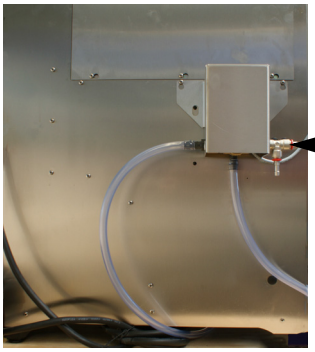


Fig. 8-9 CalfRail circulation cleaning attachment with return line

1 CalfRail return line

2. Deactivate the CalfRail circulation cleaning attachment in Setup.
   - 2.1. Switch the automatic feeder off.
   - 2.2. Press [?] on the hand terminal of your automatic feeder and hold down this key when you switch on the automatic feeder.
     After a short time, the Setup menu will appear in the display.
   - 2.3. Select the **Stations > Feeds > CalfRail** menu item from the Setup menu.
   - 2.4. Select the desired CalfRail with [<] [>].
   - 2.5. Set **CR Circulation** to **Yes**.
   - 2.6. To exit the setup, repeatedly press [Esc], until the message **Exit setup?** appears. Confirm with [Enter].

NOTICE!

Risk of infection

► To prevent infections, use a new hoses when recommissioning the unit.

NOTICE!

Make sure that there is no more water in the system to prevent damage from frost.

8.2 Permanent shutdown

If you want to permanently shut down the CalfRail circulation cleaning attachment, you must dispose of it in accordance with the legal regulations. To find out which regulations apply to you, contact your waste disposal company or a waste disposal center listed in the yellow pages.

In the appendix of the operating manual, you can find a list of the materials used to make the CalfRail circulation cleaning attachment (see 8.1 "Temporary shutdown" - 23).

1. Perform steps 1 to 2 of the shutdown (see 8.1 "Temporary shutdown" - 23).
2. Remove the CalfRail circulation cleaning attachment from the automatic feeder.
3. Dispose of the CalfRail circulation cleaning attachment as described in the disposal chapter (9. "Disposal" - 25).

9. Disposal

9.1 Disposing of cleaning agent residues.

Dispose of any residual cleaning agent. See the cleaning agent manufacturer's technical data sheet for more information on the disposal of the cleaning agent.

⚠ WARNING!

Chemical burns due to the cleaning agents used.

The cleaning agent can cause chemical burns to your eyes or hands.

► Always wear safety glasses and protective gloves when using cleaning agents. Follow all the safety instructions listed in the safety data sheet for the cleaning agent and wear the specified safety equipment.

9.2 Disposing of hoses

Dispose of hoses as controlled waste or municipal waste, depending on the material. Read the disposal instructions on the packaging of the hoses, or contact your waste disposal center for instructions.

9.3 Disposing of cables

Dispose of cables as controlled waste or municipal waste, depending on the material. Read the disposal instructions on the packaging of the cables, or contact your waste disposal center for instructions.

9.4 Disposal of the CalfRail circulation cleaning attachment

For disposal instructions, contact the appropriate authorities, such as your waste disposal company or local government agency.

See the appendix for an overview of the materials in the CalfRail circulation cleaning attachment.

Dispose of the CalfRail circulation cleaning attachment.

10. Faults and warnings

If a **Fault** occurs, the automatic mode of the automatic feeder will be interrupted. A corresponding fault message will appear on the hand terminal display, and the green LED on the hand terminal will flash.

Warnings indicate problems that do not interrupt the automatic mode of the automatic feeder. Warnings are also indicated by the flashing of the LED on the hand terminal.

Note: If the warning messages are deleted or hidden by pressing Esc then these will automatically reappear in the event of a new warning, or in any case within ten minutes.

Some warning messages and fault messages are automatically deleted once the fault has been rectified. Some are only deleted by pressing C 9 or by confirming **Delete fault?** or **Delete warning?** by pressing Enter.

10.1 Faults

10.1.1 Hoses auto. Circuit

You see the **malfunction hoses auto. Circuit** in the display if a blockage was detected during the cleaning of all lines.

NOTICE!

An interruption in feeding operation means that your calves will not receive any feed.

This can lead to malnutrition. Malnutrition can cause impaired growth and development, increased susceptibility to illness or even the death of your calves.

► You must use an alternative method to supply your calves with feed as long as the automatic feeder is out of service.

You can correct the fault as follows:

1. Confirm **malfunction hoses auto**. **Circuit** with Enter.
2. Check all hoses to determine if they are blocked, kinked or frozen up.
3. Switch to the CR Circulation submenu via 2 **> Diagnostics > Stations > CalfRail**.
4. Select the desired CalfRail with < >.
5. Set the value in **Valve set** to **[Return]** to set the valve on the teat to the return line.
6. For example, confirm **Water to the gully** with Enter to turn the valve to the gully, or confirm **Water to the mixer** with Enter to turn the valve to the mixer.

   The check mark (✓) at the end of the selected line shows the last position to which the valve was switched.
7. In **Water bo. open?**, press Enter until the mixer is filled with water.
8. Confirm **Circulate water** with Enter to pump the water around the circuit or into the gully. The direction is indicated by ✓ .

9. Replace the hoses if necessary.
10. Respond to **Delete fault?** by pressing Enter, once you have rectified the fault.

10.1.2 Flushing circuit leaking.

You will see the text **Fault flushing circuit** in the display if, when cleaning all the pipework, a leakage point or a leaky valve is detected.

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You can correct the fault as follows:

1. Confirm **Fault flushing circuit leakage** with Enter.
2. Check all hoses to determine if they are blocked, kinked or frozen up.
3. Switch to the CR Circulation submenu via 2 **> Diagnostics > Stations > CalfRail**.
4. Select the desired CalfRail with < >.
5. Set the value in **Valve set** to **[Return] to** set the valve on the teat to the return line.
6. For example, confirm **Water to the gully** with Enter to turn the valve to the gully, or confirm **Water to the mixer** with Enter to turn the valve to the mixer.

   The check mark (✓) at the end of the selected line shows the last position to which the valve was switched.
7. In **Water bo. open?**, press Enter until the mixer is filled with water.
8. Confirm **Circulate water** with Enter to pump the water around the circuit or into the gully. The direction is indicated by ✓ .
9. Replace the hoses if necessary.
10. Respond to **Delete fault?** by pressing Enter, once you have rectified the fault.

10.2 Diagnosis

The CalfRail circulation cleaning attachment and its functions can be checked via the **Diagnostics** menu of the automatic feeder. This menu facilitates troubleshooting in the event of a technical problem with the CalfRail circulation cleaning attachment.

10.2.1 Checking stations

In this menu, you check the feeding box.

1. Choose [📖2] **> Diagnostics > Stations** in the **Feeds** sub-menu.
2. Use [<] [>] to select the desired station to which a CalfRail is connected.
3. In **CR Circulation, press** [Enter] to enter the submenu.
4. Set the value in **Valve set** to **[Return] to** set the valve on the teat to the return line.
5. For example, confirm **Water to the gully** with [Enter] to turn the valve to the gully, or confirm **Water to the mixer** with [Enter] to turn the valve to the mixer.
   5.1. The check mark (✓) at the end of the selected line shows the last position to which the valve was switched.
   5.2. In **Water bo. open?**, press [Enter] until the mixer is filled with water.
   5.3. Confirm **Circulate water** with [Enter] to pump the water around the circuit or into the gully. The direction is indicated by ✓ .

11. Appendix

11.1 Materials list

The materials used in the CalfRail circulation cleaning attachment include:

- Nickel-plated brass
- Brass
- Vulcanized fiber, graphite-loaded
- V2A, V4A
- Plastics: PTFE (Teflon), TPE, PVC, NR (natural rubber)
- Silicone
- Rubber: NBR

11.2 Checking components for compliance with national regulations

All electrical components must be checked regularly for electrical safety in accordance with the intervals and test methods defined in the national regulations.

If any faults or damage are detected during the inspection, the faulty components have to be replaced before the automatic feeder can be used again.

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