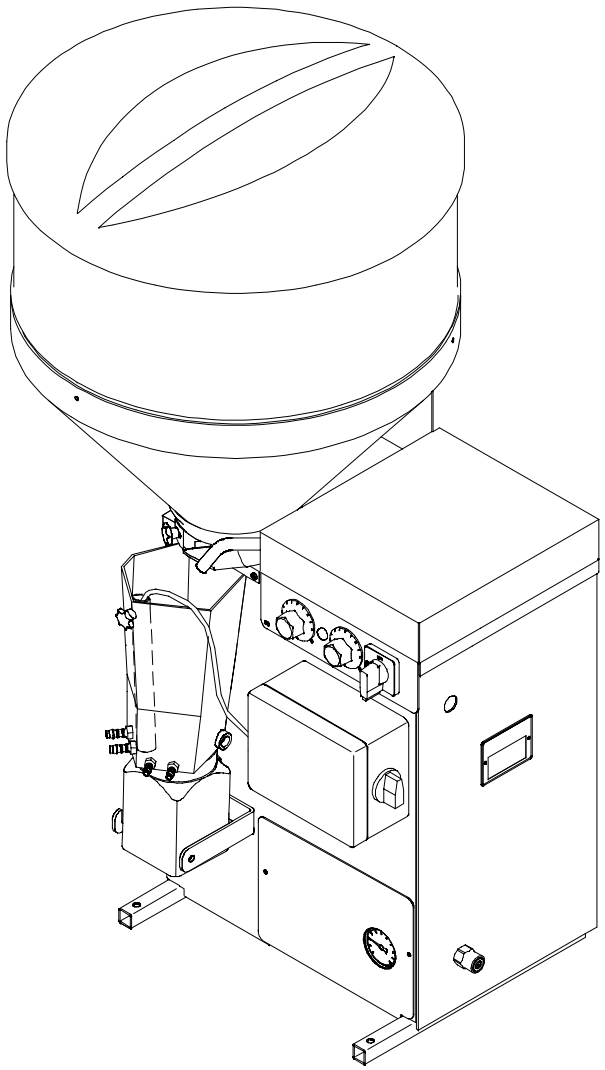
December 2002

Instruction Manual

Automatic Lamb Feeder

TAP0-EZ1-38-M
TAP0-EZ1-32-M
TAP0-EZ1-28-M
TAP0-EZ1-27



1 Introduction

1.1 Safety Instructions

Be sure to read and follow all instructions contained in this manual before connecting and using the automatic feeder.

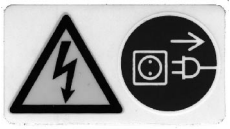
- Use the appliance only to feed lambs or kids.
- Servicing and installation of the automatic feeder has to be restricted to qualified and authorised service personnel.
- Read the instruction manual carefully before installing or operating the machine.
  To facilitate customer service on the automatic feeders, store the documentation accompanying the appliance near to it.
- The faultless functioning of the automatic feeder requires expert installation, correct handling, as well as careful care and maintenance.
- Incorrect data inputs may have serious consequences. Therefore, check the correctness of all data inputs.
- The livestock owner is responsible for a regular and scrupulous control of his animals and the functioning of the appliance. If, for any reason, the system should break down or some animals should not make use of it, the livestock owner is responsible for choosing other feeding methods for those animals.
- The manufacturer accepts no responsibility for damages and their consequences caused by incorrect installation and operation, improper use, inadequate service and maintenance or false entries.
- You will find further safety instructions in the following chapters.

1.2 Danger Signs on the Automatic Feeder

CAUTION!
This sign warns you of **rotating parts starting to work automatically.**

This sign is located on potential danger areas such as the milk powder hopper, the milk powder outlet, the mixer as well as the outlet for powder additives on the additive dispenser.

In order to avoid injuries, **before** carrying out any kind of operation on above-listed parts, it is imperative to make the automatic feeder currentless by turning the main switch to position „0/OFF“ or by pulling the mains plug.



CAUTION!
This sign warns you of **electric shocks**.

In order to avoid injuries, **before** opening the control- or the power unit, it is imperative to make the automatic feeder currentless by turning the main switch to position „0/OFF“ or by pulling the mains plug.

1.3 Information Signs on the Automatic Feeder

Before connecting the **automatic feeder** to the **mains supply** and **activating** the **heating** (see chapter 4 “Starting Up the Automatic Feeder”, page 12), **carefully read** the **operating instructions**.

Any questions about this product? Then, feel free to get in touch with us. Before calling us, please write down the information (machine type, machine number) on the rating plate located at the left of the feeder chassis, as well as the program version).
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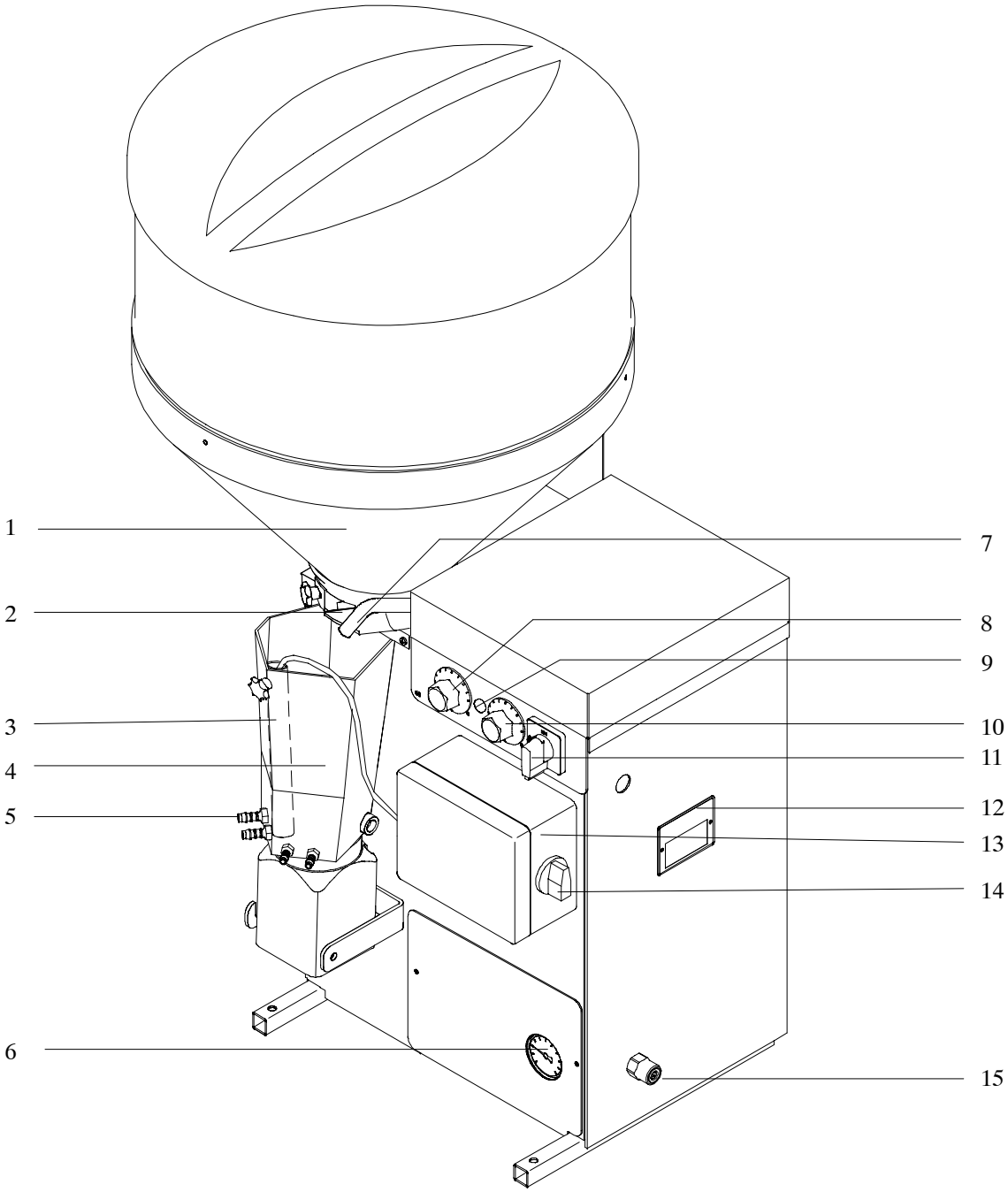
1.4 Components of the Automatic Feeder



1 = Milk powder hopper
2 = Dosing slide
3 = Pressure tube
4 = Mixer
5 = Suction hose connection
6 = Manometer
7 = Milk/Water outlet
8 = Thermostat für minimum operating temperature **(not for TAP0-EZ1-27)**
9 = Pilot lamp for heating
10 = Heating thermostat
11 = Main switch ON/OFF **(not for TAP0-EZ1-27)**
12 = Rating plate
13 = Power unit
14 = Program switch
15 = Water supply

2 Specifications of the Automatic Feeder

Please observe the information on the rating plate located at the left of the chassis!

Electrical connection

TAP0-EZ1-27

230V / L / N / PE, 50 Hz, 16 A

TAP0-EZ1-28-M (only for USA and Canada)

240V / L1, L2 / Grd / 60 Hz, 15 A

TAP0-EZ1-32-M

230V / L / N / PE, 50 Hz, 16 A

TAP0-EZ1-38-M

230V / 400V / 3 / N / PE, 50 Hz, 16 A

Dimensions of the automatic feeder

Height: 108 cm

Width: 61 cm

Depth: 53 cm

Weight (with basic equipment): approx. 40 kg

Water supply

1/2“ hose with 3/4“ hose coupling.

The local water pressure has to be between 2,5 and 6 bar.

Boiler

Boiler capacity: approx. 6 liters

Milk powder hopper (with top section) - capacity

approx. 35 kg

Number of feeding stations

Each automatic feeder can provide approx. 20 animals per feeding station with feed.

Specifications are subject to change without prior notice!

3 Locating the Automatic Feeder

3.1 Local Electrical Connection

- Refer installation of the local electrical connection to qualified electricians.
- Observe local recommendations and protective measures. To operate the automatic feeder, it is demanded to install a fault-current circuit breaker (30 mA) in the main distribution frame.
- The automatic feeder requires its own power supply: *refer to chapter 2, page 7, „Specifications of the Automatic Feeder“*.
- Observe rated voltage and rated frequency. The supply voltage indicated on the rating plate of the automatic feeder must correspond to the one of the mains.
- In case of overvoltage risk, install an overvoltage limiter in the local main distribution frame.

Equipotential bonding

For animals' safety and to prevent electrical interferences, carry out an equipotential bonding of all metal parts such as the water line, the feeding station, the race-way and the automatic feeder. At the rear of the automatic feeder is located the connection screw for the equipotential bonding which has to be connected to an earth circuit connector or to a local earth electrode by means of a short coupling.

Lightning protection

As it is technically impossible to protect the installation against lightning stroke separately, it is to the owner to install an adequate lightning protection, such as e.g. a lightning protection system for the entire building. We recommend to conclude a lightning protection insurance.

3.2 Installing the Automatic Feeder

- The automatic feeder has to be placed in a dry location, if possible, not in the animal area (e.g. in the fodder storage or similar detached room).
- A fence of planks protects the automatic feeder against dirt and flies.
- In order to ensure a good functioning of the feeding process even in case of frost, you have to equip the automatic feeder with a protection against frost (accessory). The owner is responsible for a reliable water supply.
- The suction hoses can be easily guided through a wall.

3.3 Water Supply

- Connect the 1/2“ water hose with the 3/4“ screw-type hose coupling to the water connection located at the right of the automatic feeder.

The water pressure supplied by customer has to be between 2,5 and 6 bar.

Note: To ensure troublefree functioning of the automatic feeder, take care that the water pressure does not fall below 2,5 bar!

Take care that there is no pressure variation of the water pipe.

In case of water pipes with small cross section it may happen that, in the feeding mode or when water is taken out of the same pipe simultaneously, the water pressure will drop.

When the water pressure is below 2,5 bar you have to use a header tank.

Install an additional water stop valve.

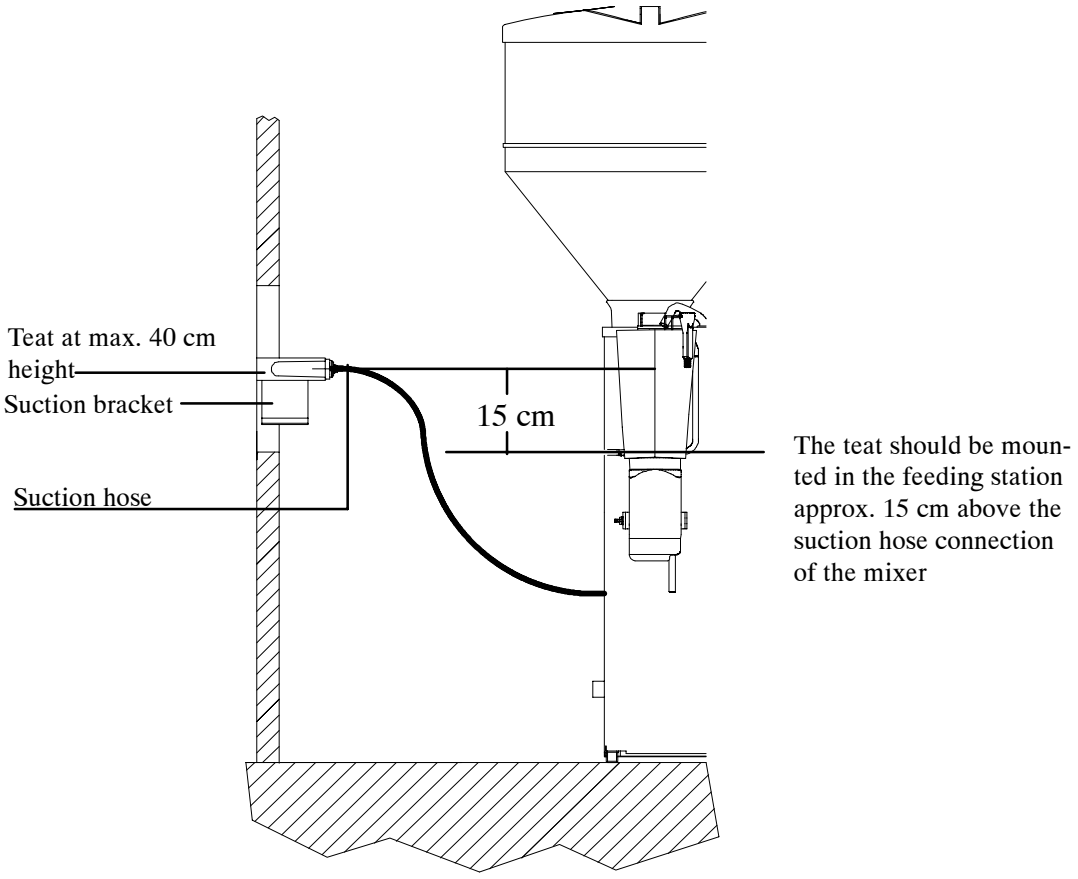
The pressure reducer is factory-set to 1,5 bar.

Do not alter the setting of the pressure reducer!

In case the notes above should not be observed, there is no guarantee that the automatic feeder will run trouble-free!

3.4 Mounting the Feeding Station

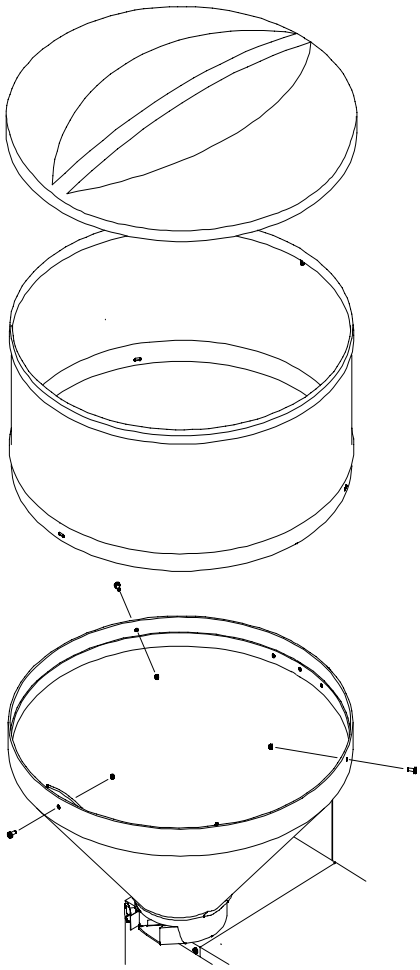
- Install the feeding station 30 – 40 cm above the stable ground.
  Mount the teat approx. 15 cm above the suction hose connection of the mixer.
- Secure the suction hose in such a way that the mixer jar can easily be tilted in forward position. The suction hoses should not exceed a length of 2 meters.
- Mount the suction bracket with splash board towards the bottom.
- Make sure that there is no sag in the connecting hose between mixer and feeding pump, in order to prevent accumulation of water or milk.



3.5 Mounting the Top Section of the Milk Powder Hopper

- Screw the top section together and place it onto the milk powder hopper.

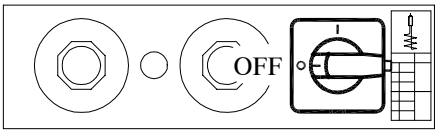
Only use the original milk powder hopper!



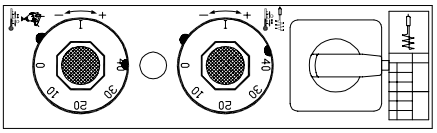
4 Starting Up the Automatic Feeder

4.1 Filling the Boiler with Water

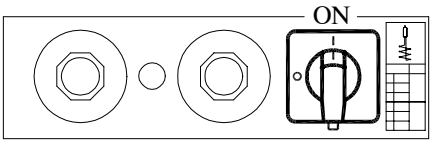
Warning: Before switching the heating on, fill up the boiler with water, otherwise the boiler will be damaged. There will be no guarantee for a reliable functioning of the automatic feeder.



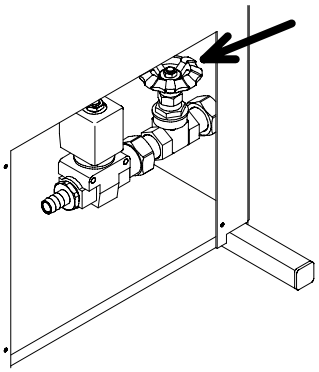
Turn the main switch to **0/OFF.**



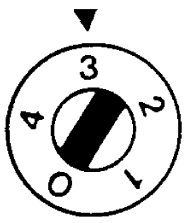
Turn both thermostats to **0**.



Connect the mains plug and turn the main switch to **I/ON** in order to switch the automatic feeder on.



Open the water control valve.



Turn the program switch to 3.

4.2 Filling the Milk Powder Hopper

Only fill in milk powder that is suitable for lamb and kid feeding.

Do not put paper or other foreign matter into the powder hopper.

For those models being equipped with a lid protection, check the following:

- The lid of the powder hopper has to keep the fuse switch pressed.
- In case the lid should not be mounted properly, the milk powder will not be dispensed.

4.3 Setting the Concentration

The concentration is set by varying the water flow rate.

Take the pressure tube and the water hose out of the mixer.

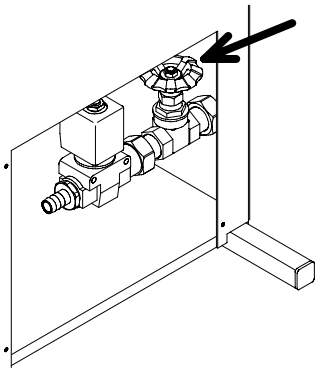
Hang a cup into the mixer in order to collect the dispensed powder.

Place a measuring cup under the water outlet.

Turn the program switch to **4** and collect the dispensed water into a measuring cup.

After having collected 1 liter of water, immediately turn the program switch to **0.**

The milk powder amount that has been dispensed during the same time represents the milk powder concentration per liter of water.



When the dispensed milk powder amount is too low, close the water control valve a little bit.

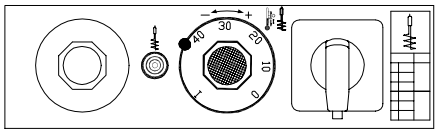
When the dispensed milk powder amount is too high, open the water control valve a little bit more.

Remount the pressure tube. The lower end must touch the mixer base.

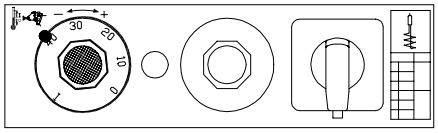
Hang the water hose into the mixer once again.

4.4 Setting the Temperature

The boiler has to be filled with water!



Turn the heating thermostat so far clockwise until both red marks will coincide.



Turn the thermostat for minimum operating temperature so far clockwise until both green marks will coincide.

The thermostat for minimum operating temperature is activated as soon as the water temperature in the boiler falls below the preset temperature.

The minimum operating temperature has always to be 3°C below the boiler heating temperature, in order to avoid overlapping in the adjustment range.

The marks are intended to help the operator setting the temperature. Nevertheless, he has to check the set values on his own authority.

For cold-soluble milk powders, a temperature of approx. 38°C will be sufficient.

For those milk powders containing fats with higher melting point, the outlet temperature has to be between 42°C and 43°C.

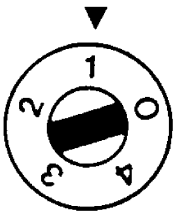
4.5 Avoiding Measurement Errors

The temperature has always to be set very carefully!

Too low temperatures may cause digestive troubles due to undissolved fats.

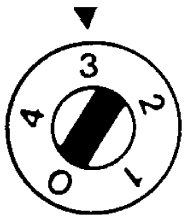
Too high temperatures may cause inflammation of the mucosa in the abomasum that on its part may lead to flatulences.

4.6 Measuring the Temperature



Turn the program switch to **1**.

Wait until the yellow pilot lamp for heating goes out.



Turn the program switch to **3**.

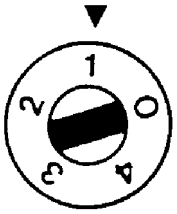
Wait until the water dispense is interrupted by the pressure switch.

Immediately afterwards measure the temperature by means of a precise thermometer.

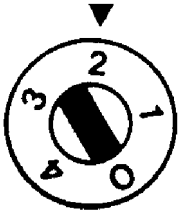
Measure the temperature carefully and, if necessary, adjust the thermostats until the desired temperature is reached.

5 Functionality

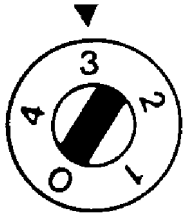
5.1 Program Switch Positions



1 = Option

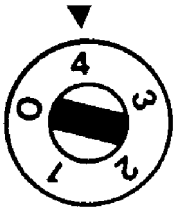


2 = Mixer ON



3 = Water conveyance

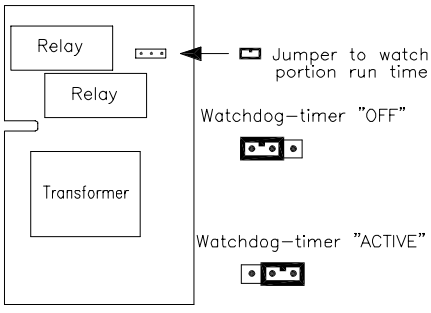
When the pressure tube is located outside the mixer, the water will flow incessantly.



4 = Automatic mode

The powder, the water and the mixer are activated simultaneously. The water tank or the pressure reducer are intended to ensure constant flow velocity. The water control valve is used to set the water flow rate.

The concentration is set by modifying the water flow rate.

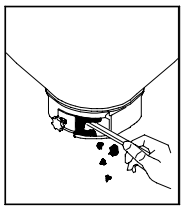


The pressure switch connected to the pressure tube switches the water- and powder conveyance off, as soon as a certain pressure has been reached. After several seconds a relay switches the mixer off. A portion is prepared as soon as the mixer is empty. In case of water deficiency the automatic feeder switches off automatically after approx. 40 seconds, provided that the jumper is in position ON.

6 Care and Maintenance of the Automatic Feeder

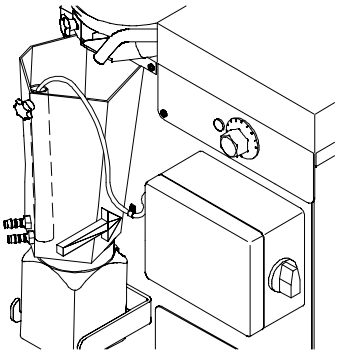
Always keep the automatic calf feeder clean and dry. Never spray it with water!

CAUTION! In order to avoid injuries, **before** carrying out any kind of operation on the milk powder outlet or on the mixer, it is imperative to make the automatic feeder currentless by turning the main switch to position **0/OFF** or by pulling the mains plug.



Check the milk powder outlet daily and remove potential incrustations. Incrustations impair the dosing precision.

In order to avoid injuries, always remove incrustations of the powder outlet by means of a small piece of wood or similar. Never use your fingers!



Always lay the cable between the pressure tube and the pressure switch towards the bottom. In case the milk flows into the pressure tube, the latter will become inoperative.

6.1 After Start-Up

- The day after start-up, carry out the following:
  - Measure the feed temperature
  - Check the concentration of the milk powder.

6.2 Regular Check

Clean the mixer daily.

Remove the suction hoses from the teat and suspend them.

Turn the program switch to **3**.

Fill the mixer with water until the pressure switch interrupts water conveyance.

Add some detergent also used in dairy farming.

Turn the program switch to **2**.

Shortly afterwards, turn the program switch to **0**.

Wipe out and empty the mixer resp. drain the cleaning water via the suction hoses.

Turn the program switch to **3.** Rinse with clean water.

Remount the suction hoses on the teat.

Turn the program switch to **4**.

Check the concentration of the milk powder after each new milk powder delivery.

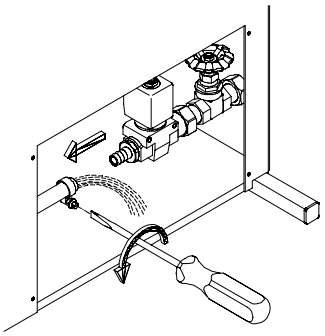
Check the temperature of the milk.

In case of direct water supply, check whether the filter of the pressure reducer and the solenoid valve are clean. Clean them, if necessary.

6.3 Shutdown

Turn the heating thermostat entirely counter-clockwise. Switch the automatic feeder off by turning the main switch to position **0/OFF** and pull the mains plug.

6.3.1 In case of Frost Risk



Drain the whole water from the boiler and the pressure reducer.

Remove the boiler hose and hold the hose towards the bottom to drain the water.

Remount the boiler hose.

Remove the whole pressure reducer and drain the water.

Remount the pressure reducer.

For reinstallation, proceed as for start-up.

7 Troubleshooting

We assume that the automatic feeder has been installed according to the information contained in this instruction manual and that the setting has been carried out correctly.

The causes are listed according to their frequecy. Therefore, during troubleshooting always start with the first one.

Fault	Cause	Countermeasure
1. The automatic feeder does not prepare any portion; the green LED is not illuminated.	The lid is defective.	Close the lid.
	The minimum operating temperature has not been attained.	Check the heating and the thermostats.
	The line is interrupted.	Check the supply lead.
	The mains supply fuse (2,5 A) is defective.	Replace the fuse.
2. The automatic feeder does not prepare any portion; the green LED is illuminated.	There is water in the hose between the pressure tube and the pressure switch.	Clean and dry the hose.
	There is water in the pressure tube.	Replace the pressure tube.
3. The feed overflows.	The pressure tube is leaky.	Check the pressure tube. Seal it, if necessary.
	The hose between the pressure tube and the pressure switch is leaky.	Check the hose. Replace it, if necessary.
	The pressure tube is damaged.	Replace the pressure tube.
	The water solenoid valve does not close.	Replace the water solenoid valve.
4. The powder motor runs continuously (only for automatic feeders that are not equipped with an electronic protection against water deficiency).	The water supply is interrupted.	Check the water supply.
	The water solenoid valve does not open.	Check the water solenoid valve and the pressure reducer. Replace them, if necessary.

EC DECLARATION OF CONFORMITY

We, **Förster Technik GmbH**
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Tel.: +49 (0)7733/9406-0
Fax: +49 (0)7733/9406-99

declare that our products with the designation:

TAP*-EZ1-27
TAP*-EZ1-28-M
TAP*-EZ1-32-M
TAP*-EZ1-38-M
including all accessories, *with chassis size 0 or 1

to which this declaration relates are in conformity with the following relevant regulations:

EN	292-1 / 11.91	Safety of machinery - Basic concepts, general principles for design; Part 1: basic terminology, methodology
EN	292-2 / 06.95	Safety of machinery - Basic concepts, general principles for design; Part 2: technical principles and specifications
EN	294 / 8.92	Safety of machinery - Safety distances to prevent danger zones from being reached by the upper limbs
EN	349 / 6.93	Safety of machinery - Minimum gaps to avoid crushing of parts of the human body
EN	50081-1 / 3.93	Electromagnetic compatibility(EMC) - Generic emission standard; Part 1: residential, commercial and light industries
EN	50082-1 / 11.97	Electromagnetic compatibility (EMC) - Generic immunity standard; Part 1: residential, commercial and light industry
EN	563 / 01.2000	Safety of machinery - Temperatures of touchables surfaces - Ergonomics data to establish temperature limit values for hot surfaces
EN	1070 / 01.99	Safety of machinery - Terminology
EN	60204-1 / 11.98	Safety of machinery - Electrical equipment of machines; Part 1: general requirements

Date: December 1, 2002

per the provisions of Council Directives 89/392/EEC, Annex II A, 89/336/EEC, 73/23/EEC and 93/68/EEC

Wolfgang Latz Alfred Steiner

Signatory: Mister Latz, Head of Production
Mister Steiner, Head of Department Electrical Components