

# Installation instructions

## Liquid dosing device

from version H 7.00





## Table of contents

<b>1</b>	<b>Introduction</b>	<b>5</b>
1.1	Copyright	5
1.2	Disposal	5
1.3	Transport	5
1.4	Contact details of the manufacturer	5
<b>2</b>	<b>For your safety</b>	<b>7</b>
2.1	Target group	7
2.1.1	Necessary qualifications of the owner	7
2.1.2	Necessary qualifications of the service technician	7
2.2	Intended use of the dosing device	7
2.3	Use of the dosing device other than as intended	7
2.4	Safety signs on the machine	7
2.5	Indication of hazards	8
2.6	Residual risks	9
2.7	Safety devices on the dosing device	12
2.8	Obligations of the owner	12
2.9	Obligations of the operator	13
2.10	Structural alterations	14
<b>3</b>	<b>Dosing device components</b>	<b>15</b>
<b>4</b>	<b>Technical data</b>	<b>17</b>
<b>5</b>	<b>Putting into service and taking out of service</b>	<b>19</b>
5.1	Electrical connection provided by the customer	19
5.2	Lay and connect the control cable (when retrofitting)	19
5.2.1	Vario	20
5.2.2	Compact	20
5.3	Install the dosing device (when retrofitting)	21
5.4	Registering the dosing device at the calf feeder	23
5.4.1	Activating the dosing device	23
5.5	Software	24
5.6	Calibration	24
5.7	Checking the dosage accuracy (calibration)	24
5.8	Taking out of service	24
<b>6</b>	<b>Calibration</b>	<b>27</b>
6.1	Manually calibrating liquid additives	27
6.1.1	Without a calibration scale	27
6.1.2	With a calibration scale	28
<b>7</b>	<b>Feeding</b>	<b>29</b>
7.1	Dispensing of additive	29
7.1.1	Creating a medicine prescription plan	30
7.1.2	Creating electrolyte prescription plan	35
7.1.3	Setting dispensing of additive	35
7.1.4	Handling of residual portions	39
7.2	Dosing of extra portions with additive	41
<b>8</b>	<b>Animal control</b>	<b>43</b>

8.1	Calling up animal information . . . . .	43
8.2	Information about interrupted feeding procedures . . . . .	43
8.3	Information about animals with expire date messages . . . . .	43
8.3.1	Deleting expire date messages . . . . .	44
8.4	Information about animals with dispensing of additive . . . . .	44
<b>9</b>	<b>Cleaning . . . . .</b>	<b>47</b>
9.1	Specifications for cleaning . . . . .	47
9.2	Performing cleaning . . . . .	47
9.2.1	General safety instructions . . . . .	47
9.2.2	Perform cleaning every time there is a change of additive or if there is a long break out of use. . . . .	48
<b>10</b>	<b>Diagnosis . . . . .</b>	<b>51</b>
10.1	Motors. . . . .	51
<b>11</b>	<b>Failures and warnings . . . . .</b>	<b>53</b>
11.1	Failures. . . . .	53
11.1.1	Calibration . . . . .	53
11.2	Warnings. . . . .	53
11.2.1	Calibration . . . . .	53
<b>12</b>	<b>Maintenance/servicing . . . . .</b>	<b>55</b>
12.1	Safety instructions . . . . .	55
12.2	Maintenance intervals and activities . . . . .	55
12.2.1	Daily . . . . .	55
12.2.2	Every 12 months . . . . .	56
12.2.3	In compliance with national regulations. . . . .	56
12.2.4	Exchanging the dosing pump hose . . . . .	56

# 1 Introduction

These installation instructions enable you to install and operate the liquid dosing device safely and as intended.

- > Please read these installation instructions carefully before putting the dosing device into service.
- > Keep the installation instructions ready and available at all times and pass them on to the next user.
- > Comply with all warnings and safety instructions in these installation instructions at all times.

## 1.1 Copyright

The copyright for these installation instructions is retained by Förster-Technik.

## 1.2 Disposal

All components, liquids and solids must be disposed of in compliance with the official local regulations for waste prevention and appropriate waste recycling or disposal which apply in your country. Also comply with the corresponding safety data sheets.

## 1.3 Transport

The dosing device is delivered in a box with dimensions of 30 x 23 x 19 cm.

- > Check the product for visible signs of damage upon delivery and report them immediately to the carrier.

## 1.4 Contact details of the manufacturer

Please contact us if you have any questions on our products or require technical support.

Please note down the item number stated on your device to have it ready and available whenever you make a call.

**Item no.:**

Our contact details:  
Förster-Technik GmbH  
Gerwigstrasse 25  
D-78234 Engen, Germany  
Phone: +49 / (0)7733 / 9406 - 0  
Fax: +49 / (0)7733 / 9406 - 99  
[info@foerster-technik.de](mailto:info@foerster-technik.de)  
[www.foerster-technik.de](http://www.foerster-technik.de)

## **2 For your safety**

### **2.1 Target group**

#### **2.1.1 Necessary qualifications of the owner**

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

#### **2.1.2 Necessary qualifications of the service technician**

Only trained service technicians are authorised to install the dosing device, put it into service and subject it to maintenance and repairs.

Service technicians are electricians with appropriate qualifications, i.e. they 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. This also includes knowledge of relevant accident prevention regulations, generally accepted safety regulations, EC guidelines and country-specific standards and provisions.

### **2.2 Intended use of the dosing device**

Only use the dosing device for storing (during use) and dosage of liquid animal feeds. The liquid animal feed can for example be medicines, electrolytes or feed additives.

### **2.3 Use of the dosing device other than as intended**


Do not use the dosing device for storing and dosing any materials other than those defined at "Intended use of the dosing device" on page 7.


### **2.4 Safety signs on the machine**


The safety signs on the machine are an important part of the safety concept and help prevent accidents.

They indicate danger areas at the machine and warn against residual risks.

Keep all safety signs completely in legible condition and renew them if they become unreadable.


	<p><b>Danger due to live electrical components!</b>            Danger of death by electric shock!</p> <ul style="list-style-type: none"> <li>• Always disconnect the mains plug before carrying out any work on the dosing device.</li> </ul>
---	---

	<p><b>Warning of damaging or irritant materials!</b>            Deadly danger from hazardous materials!</p> <ul style="list-style-type: none"> <li>• Pay attention to manufacturer's information and national regulations regarding the storage and use of the additive.</li> </ul>
---	---


	<p><b>Not suitable for human foodstuffs!</b>            The dosing device is suitable only for animal feed.</p> <ul style="list-style-type: none"> <li>• Therefore do not use the dosing device for food intended for consumption by humans.</li> </ul>
---	---


## 2.5 Indication of hazards

Hazards are indicated by a key word and a corresponding symbol, depending on the severity and probability:

	<p><b>Danger!</b>            For an imminent danger, resulting in serious injuries or death.</p>
---	--



	<p><b>Warning!</b></p> <p>For a potentially dangerous situation which may cause serious injuries or even death.</p>
---	---

	<p><b>Caution!</b></p> <p>For a potentially dangerous situation which may cause minor injuries or material damage.</p>
---	--


<p><b>Attention</b></p>	<p>For a potentially harmful situation in which the product or an item can become damaged within its environment.</p>
-------------------------	---

<p><b>Note</b></p>	<p>For application notes and other useful information.</p>
--------------------	--

However, it is just as important to comply with any other notes and information which are not highlighted, so as to avoid failures which in turn may cause direct or indirect injuries or material damage.

## 2.6 Residual risks

The dosing device is state of the art and has been designed in accordance with approved safety-related rules. Hazards and adverse effects may nevertheless arise when using the dosing device.

	<p><b>Warning!</b></p> <p>Serious injuries or death may be the consequence of the residual risks stated below!</p>
---	--

**Hazard:**

Poisoning, infection

**Danger point:**

Bottles, hoses

**Measures:**

- Pay attention to manufacturer's information and national regulations regarding the storage and use of the additive.
  - Wear your personal protective equipment (e.g. safety glasses, protective gloves) when handling additives.
  - Do not use the dosing device for food intended for human consumption.
- 

**Hazard:**

Lethal electric shock

**Danger point:**

Connection point

**Measure:**

- Always disconnect the mains plug before carrying out any work on the dosing device.
  - A residual current device (RCD) of 30 mA should be installed by the customer.
  - The cover of the connection point may be opened only by an electrician.
- 

**Hazard:**

Direct contact

**Danger point:**

Connection point

**Measure:**

- The dosing device must be installed at the specified location within the calf feeder, so that electrical safety is maintained.
- 

**Hazard:**

Breakdown

**Danger point:**

Electrical equipment

**Measure:**

- The dosing device must be checked regularly for electrical safety in compliance with national regulations (periodic inspection).
- 

**Hazard:**

Indirect contact

**Danger point:**

Electrical equipment

**Measure:**

- Fuse protection of 16 A (provided by the customer) and an earth leakage circuit breaker (ELCB) of 30 mA need to be installed in compliance with local regulations for the dosing device.
- 

**Hazard:**

Short circuit

**Danger point:**

Electrical equipment

**Measure:**

- The power supply to the dosing device must be fused in the control unit at a maximum of 6.3 A (see machine circuit diagram).

**2.7 Safety devices on the dosing device**

The safety devices on 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.

**2.8 Obligations of the owner**

The owner is obliged to:

- Make misuse by children impossible.
- Carefully read and understand these installation instructions before putting the dosing device into service.
- Allow only those operating personnel to work with/on the dosing device who:
  - are familiar with the basic operational safety and accident prevention regulations.
  - have been trained to work with/on the dosing device.
  - have read and understood these installation instructions.
- Operate the dosing device only as intended.

- Keep all safety signs on the dosing device in legible condition and renew damaged ones.
- Do not change the design or functions of the dosing device.
- Operate the dosing device only when it is in perfect operational condition.
- Subject the dosing device to regular visual inspection for possible damage and have it repaired by a service technician if necessary.
- Regularly check the safety devices fitted to the dosing device to ensure they are working correctly.
- Make sure the dosing device is operated only with safety devices fitted.
- Provide the required personal protective devices for the operator.
- Make sure the mains connection socket for the dosing device and the power supply provided by the customer are easily accessible at all times.
- Make sure the dosing device is installed at the specified location within the calf feeder.
- Always make sure the dosing device is installed in a dry, clean, frost-free place, separate from the animal area (e.g. technical facilities room).
- Protect the dosing device and all corresponding cables from exposure to sunlight.

## **2.9 Obligations of the operator**

Before beginning work, the operator is obliged to:

- Comply with the basic operational safety and accident prevention regulations.
- Read and understand these installation instructions.

- Comply with all the safety information and instructions included in these installation instructions.

When using additives, the operator is also obliged to wear his personal protective equipment (safety glasses, protective gloves).

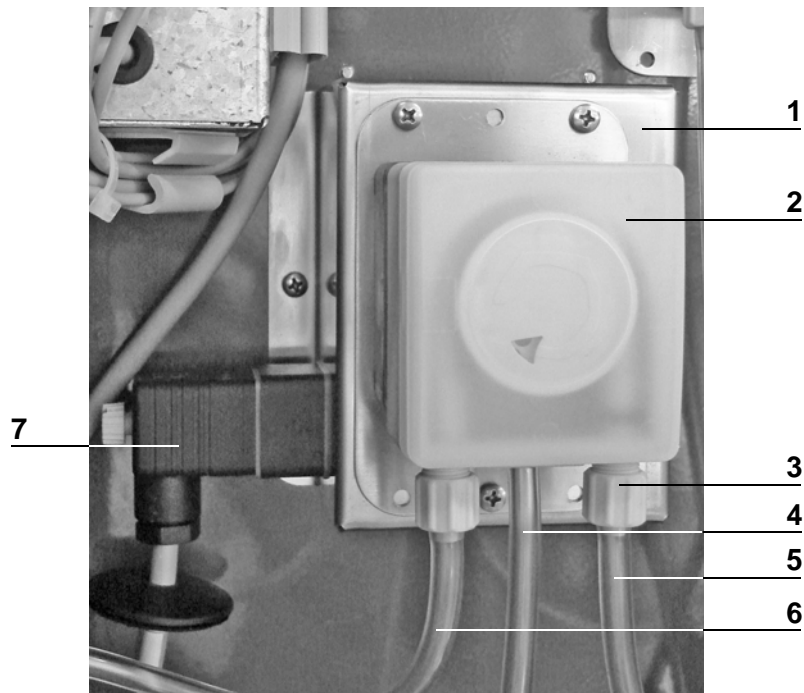
The compulsory accident prevention regulations which apply at the operation site in the country of use and the technical rules for safety-related and specialist work must also be complied with at all times.

## **2.10 Structural alterations**

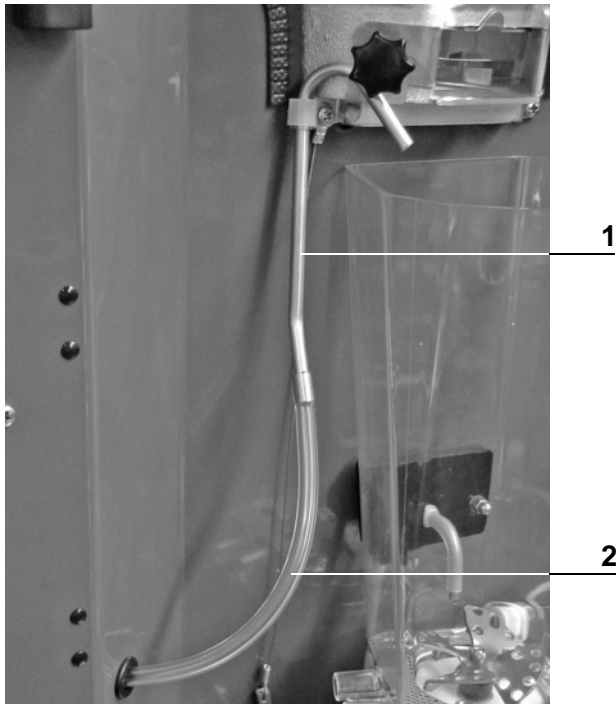
The dosing device must not be subjected to any unauthorised alterations at any time.

Only original spare parts, wear parts and accessories may be used, since any warranty claims will otherwise lapse.

### 3 Dosing device components

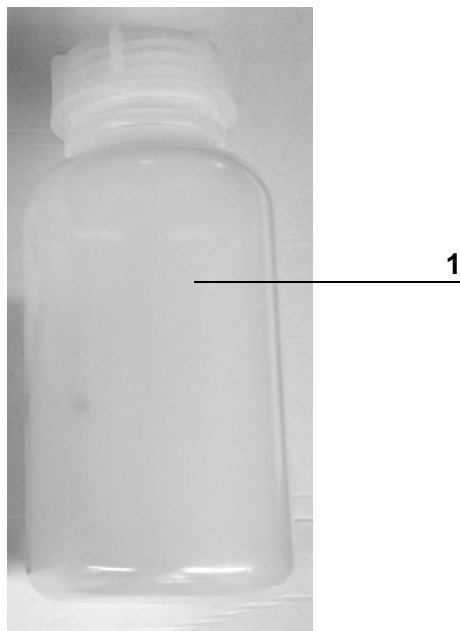


1	Control unit
2	Dosing pump
3	Plastic union nut
4	Overflow hose
5	Pressure side
6	Suction side
7	Device plug



1 Pipe elbow
--------------

2 Hose (pressure side)
------------------------



1 Dosing reservoir with screw connection 1.5 ltr
--



## 4 Technical data

The liquid dosing device is supplied for customer installation and can be retrofitted to **Vario/Vario+** and **Compact/Compact+** calf feeders.

Height: 100 mm

Width: 125 mm

Depth: 130 mm

Dosing reservoir with screw connection 1.5 ltr

230 V / 50 Hz / 0.7 A

Fuse provided by the customer: 6.3 A

Residual current device (RCD) provided by the customer: 30 mA



## 5 Putting into service and taking out of service


The dosing device may only be put into service by a service technician.

### 5.1 Electrical connection provided by the customer

- Have the electrical connection (provided by the customer) installed by a qualified electrician.
- Comply with the local regulations and safety measures.
- A 30 mA earth leakage circuit breaker (ELCB) in the power supply (provided by the customer) is compulsory for the operation of the dosing device.
- The rated voltage and rated frequency must be complied with. The supply voltage stated on the name plate of the device must correspond to that of the mains supply.
- Have excess voltage limiters installed as a lightning protection measure by a qualified electrician in your power supply (provided by the customer).
- Protect the dosing device and all associated cables from exposure to sunlight.

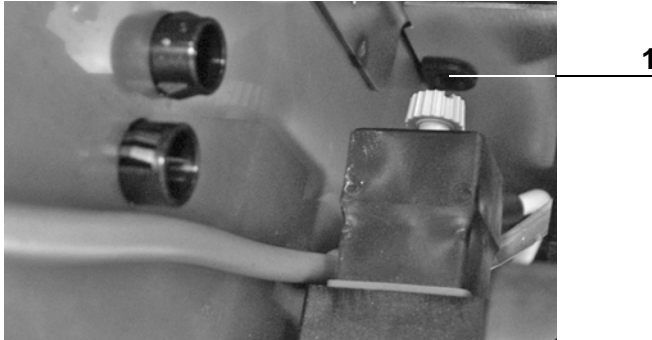
### 5.2 Lay and connect the control cable (when retrofitting)

If supplied as part of a new system the dosing device is already installed and connected within the calf feeder. If you are retrofitting the dosing device, proceed as follows:

	<p><b>Danger due to live electrical components!</b></p> <p>Live electrical components. Danger of death by electric shock!</p> <ul style="list-style-type: none"> <li>• Always disconnect the mains plug before starting any work on the control box of the calf feeder.</li> </ul>
---	--

### 5.2.1 Vario

1. Remove the dummy plug fitted behind the mixer drain valve in the intermediate panel, and replace it with a grommet.

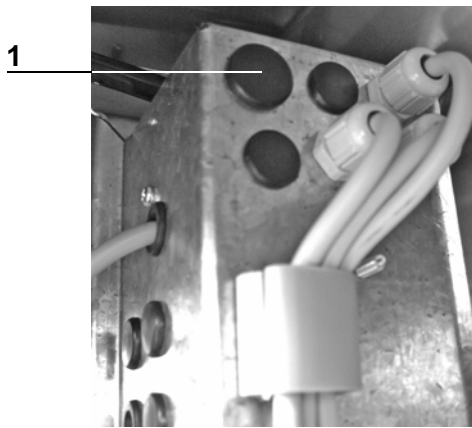


1 Dummy plug in the intermediate panel

2. Remove the powder hopper including the powder conveyor.
3. Feed the control cable between the boiler/heat exchanger and the back of the calf feeder, towards the control box.
4. Remove the dummy plug at the control box and fit the M12 cable gland.
5. Lead the cable into the control box and terminate it at the main board (see machine circuit diagram).
6. Refit the powder hopper and the powder conveyor.

### 5.2.2 Compact

1. A part of the control box extends into the left side space of the calf feeder. Remove the dummy plug at the control box and install the cable gland.



1 Dummy plug at the control box

2. Lead the cable into the control box and terminate it at the main board (see machine circuit diagram).

### 5.3 Install the dosing device (when retrofitting)

<b>Note</b>	The tapped holes for attaching the dosing pump to the intermediate panel of the calf feeder are already present.
-------------	--

1. Attach the dosing device within the left side space of the calf feeder. Orient its position as shown in the illustration below.



2. Connect the device socket on the control cable on to the device plug on the dosing device. To prevent mistakes, the control cable carries a label with the word "Additive".

3. Push a hose on to the right-hand hose coupling (pressure side) of the dosing pump and secure it with the plastic union nut.



4. Use the securing clip to attach the pipe elbow to the left-hand edge of the powder discharge.



5. Push the hose that is attached to the right-hand hose coupling of the dosing pump on to the lower end of the pipe elbow.




6. Push the overflow hose on to the centre hose coupling of the dosing pump and secure it with the union nut. Lead the hose through the opening in the floor of the calf feeder casing.

<b>Note</b>	This hose drains the liquid additive if any additive leaks from the dosing pump.
-------------	--

7. Push a hose on to the left-hand hose coupling (suction side) of the dosing pump and secure it with the plastic union nut.
8. Lead the hose through the hose gland at the left-hand edge of the casing and connect it to the dosing reservoir.

## 5.4 Registering the dosing device at the calf feeder

### 5.4.1 Activating the dosing device

1. Switch the calf feeder off.
2. Press  and keep the button pressed while you switch the calf feeder back on. After a short while, the setup menu appears on the display, from which you select:

 > **Equipment**

```

Setup
  Language [English]
  Time/date
  Machine
  ▷ Equipment
  
```

3. Select the line **Add. disp. 2** and set the value to **yes**.

```
Equipment
Mixer drain: yes
Feeding pump: yes
▷ Additive disp. 2: [yes]
...
```

4. To leave setup, repeatedly press  until the message on the right is displayed. Confirm with .

```
Setup
Exit?
```

## 5.5 Software

When using the dosing device, the calf feeder must always be kept updated to the current program version.

## 5.6 Calibration

Calibrate the dosing device so that the additives are dosed precisely (see chapter "Calibration" on page 27ff).

## 5.7 Checking the dosage accuracy (calibration)

After a few hours of operation, check the output quantity by recalibrating the additive (see chapter "Calibration" on page 27ff). If the set quantity is not being delivered, you should mix the additive with a suitable carrier or use another additive.

## 5.8 Taking out of service

If you do not intend to operate dosing device for a long period of time you must take the it out of service.

Proceed as follows to take it out of service:



### Warning!

Hazardous or irritant materials!

- Collect the additive residues and dispose of them safely. When doing this be sure to comply with the manufacturer's instructions and national regulations for the use and disposal of the additive being used.



1. Thoroughly empty and clean the dosing device; see “Cleaning” on page 47ff for more details.



## 6 Calibration






In order that the dosing device can exactly dose the additive, it must be calibrated beforehand.

The volume or the weight of the additive to be calibrated must be determined for the calibration of the dosing device.

### 6.1 Manually calibrating liquid additives

#### 6.1.1 Without a calibration scale

<b>Note</b>	Have a measuring cylinder graduated in ml. ready for calibration of the additives.
-------------	--

1.  > **Calibration** > **Components** > **Additive**
2. Use  or  to select the calibration menu **Additive 2**.
3. Hold an empty measuring vessel under the pipe elbow.
4. Confirm **Start?** with . The calibration procedure starts.  
The set value of 20 g will be shown first in the display. The actual value flashes on the display shortly afterwards.
5. Measure the collected quantity.
6. Enter the measured quantity in the **Actual** line and confirm with . You then return to the calibration menu. This will display:
  - The set quantity
  - How long the additive was dosed
  - The maximum quantity which can be administered
  - The date of the last calibration
7. Repeat the calibration procedure in order to check the result.

```
<Additive 2>
▷ Start?
  Set qty: 20.0 g
  Runtime: 12.00 s
  Max. quantity: 99 g/l
  Date: 01.01.11
```

```
Calibration
Set: 20.0 g
Actual: 20.0 g
```


```
Calibration
Set: 20.0 g
Actual: 19.5 g
```

```
<Additive 2>
▷ Start?
  Set qty: 20.0 g
  Runtime: 12.00 s
  Max. quantity: 99 g/l
  Date: 01.01.11
```

<b>Note</b>	Check the value which is shown in the <b>Max.amount</b> line after the calibration of the additive. This value corresponds exactly to the maximum amount of this additive in the prescription which you can give. If you enter a higher amount, the message shown here appears. If you confirm this by pressing <input type="text" value="Enter"/> , the <b>Max.amount</b> will be automatically accepted.
-------------	--

```
Runtime too long?
Reduce amount?
```

### 6.1.2 With a calibration scale

1.  > **Calibration** > **Components** > **Additive**
2. Use  or  to select the calibration menu **Additive 2**.
3. Suspend the calibration box from the bracket provided for the purpose.
4. Confirm **Start?** with . This message appears.
5. Confirm with . The calibration procedure starts. The set value of 20 g will be shown first in the display.
6. The device now carries out two check weighings without the user having to do anything and shows the result.
7. Then the average value of these two check weighings is shown flashing in the **Actual** line. Confirm this determined value with . You then return to the calibration menu.
8. Repeat the calibration procedure in order to check the result.

```
<Additive>
▷ Start?
  Set qty: 22.0 g
  ...
```

```
Calibration box
used?
```

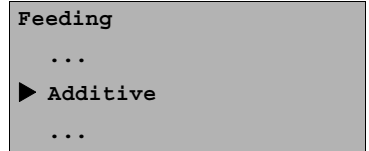
```
Calibration
Set: 20.0 g
Weighing 1: 19.5 g
Weighing 2: 19.8 g
Actual: 19.5 g
```

```
Calibration
Set: 20.0 g
Actual: 19.5 g
```

## 7 Feeding

### 7.1 Dispensing of additive


Up to two additional dispensers can be connected to the calf feeder for administration of medicines and electrolytes: one dosing device for powdered additives and another exclusively for liquid additives.



In prescription plans, define the dosage of the medicine/electrolyte and the duration of the administration. You can create up to four prescription plans for medicine and one prescription plan for electrolytes. Medical preparations are dosed into the milk feed, while electrolytes are generally dosed into water.

<b>Note</b>	Electrolytes can also be dispensed in accordance to a medicine prescription plan. The electrolytes are then dosed into the milk feed like medicinal preparations.
-------------	---

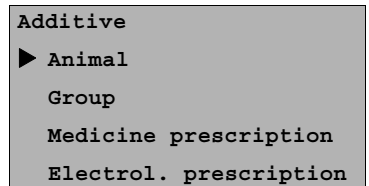
<b>Note</b>	Comply with the instructions on the enclosed leaflet and consult your veterinary surgeon for advice on the dosage if necessary.
-------------	---

	<p><b>Warning!</b></p> <p>Hazardous or irritant materials!</p> <ul style="list-style-type: none"> <li>• Make sure there is no unauthorised access to them. Be sure to comply with the manufacturer's instructions and national regulations for the use of the additive being used.</li> </ul>
---	---

 > **Feeding > Additive**

The **Additive** menu contains the following submenus:

- **Animal**
- **Group**
- **Medicine prescription**



- **Electrolyte prescription**

### 7.1.1 Creating a medicine prescription plan

In order to dispense additives to animals, first create a prescription plan and assign this to the dispenser. You can create up to four different medicine prescription plans.

```
Additive
Animal
Group
▶ Medicine prescription
Electrol. prescription
```

#### 7.1.1.1 Select dosage

Dosage is performed either:

- According to the feed quantity (in g/litre)
- According to the animal's weight (in g/100 kg)
- As daily quantity per animal and day (g/day)

<b>Attention</b>	Animals to whom the additive is dispensed according to their weight (in g/100 kg) or as daily amount (g/day) must <b>not</b> be fed using the SynchroFeed function. The SynchroFeed function can be used only if the additive is dispensed to the animals in g/l.
------------------	---

#### Dosing additive according to feed amount

Animals that receive a large quantity of feed also receive more additive than animals that receive less feed. The additive quantity is distributed evenly among the feed portions.

```
<Prescription 1>
...
▷ Dosage: [g/l]
...
```



**Example:** animal 1 receives 8 litres and animal 2 receives 2 litres per day. For a medicine amount of 2 g/l, animal 1 receives 16 grams per day; animal 2 receives 4 grams per day.

#### Dosing additive according to weight

Heavy animals receive more additive than light ones. The weight entered for the animals when they were registered will be

```
<Prescription 1>
...
▷ Dosage: [g/100 kg]
...
```

increased automatically every day by the increase and the increase gains.

<b>Note</b>	If no animal weighing scales are available, check the animal's weight and correct any deviation as necessary. Otherwise the amount of additive dosed will not be right for the animal weight.
-------------	---

### Dosing additive as a daily amount



**Example:** If you want to administer a certain amount of additive to an animal per day, select **Dosage g/day**.

```
<Prescription 1>
...
▷ Dosage: [g/day]
...
```

1. > **Feeding > Additive > Medicine prescr.**
2. Select the desired setting in **Dosage**.

#### 7.1.1.2 Distribution

If you dose the additives according to weight (**g/100 kg**) or as daily amount (**g/day**), you can distribute this as follows during the course of the day:

- once (daily)
- twice (daily) or
- equal (= evenly distributed to all portions).

<b>Note</b>	The additive is distributed to the “middle” partial portions for the distribution types <b>once</b> and <b>twice</b> . The first (unadulterated feed taste) and the last partial portion (prevention of medicine residue in the feeding box) are always free of additive. Exception: for two partial portions, the additive is dosed into the first partial portion.
-------------	--

### Distribution type, once

The additive quantity is dosed for the first feed consumption of the day in the middle partial portion.



**Example:** An animal weighing 100 kg has a feed entitlement of 3 litres, the minimum saved amount is 2 litres and 9 g / 100 kg of additive is to be administered. No additive will be put in the first and fifth partial portions of the day's first feed consumption while 3 grams each will be added to the second, third and fourth partial portions.



**Example:** An animal weighing 100 kg has a feed entitlement of 3 litres, the minimum saved amount is 2 litres and 2 g / 100 kg of additive is to be administered. No additive will be put in the first, fourth and fifth partial portions of the day's first feed consumption while 1 gram each will be added to the second and third partial portions.

```
<Prescription 1>
...
Dosage: [g/day]
▷ Distribution [once]
...
```

### Distribution type, twice

Half the additive quantity is distributed to the morning's first feed consumption and half to the afternoon's first feed consumption (always in the middle partial portions).

First half of the day: 0 - 12 hrs, second half of the day: 12 - 24 hrs.



**Example:** A calf weighing 100 kg can consume 2 litres during its first visit to the feed station in the morning and 2 litres during its first visit in the afternoon. The additive dosage is 9 g / 100 kg. No additive will be put in the first and fifth partial portions of the first feed consumption in the morning while 1.5 grams each will be added to the second, third and fourth partial portions. The same applies to the first feed consumption in the afternoon.

```
<Prescription 1>
...
Dosage: [g/day]
▷ Distribution [twice]
...
```





**Example:** A calf weighing 100 kg can consume 2 litres during its first visit to the feed station in the morning and 2 litres during its first visit in the afternoon. The additive dosage is 4 g / 100 kg. No additive will be put in the first, fourth and fifth partial portions of the first feed consumption in the morning while 1 gram each will be added to the second and third partial portions. The same applies to the first feed consumption in the afternoon.

### Distribution type, equal

Additive is mixed into each feeding portion.

1. > **Feeding > Additive > Medicine prescr.**
2. In **Distribution**, select the desired setting.

```
<Prescription 1>
...
Dosage: [g/day]
▷ Distribution [equal]
...
```

### 7.1.1.3 Dispenser

Select **2** in dispenser.

```
<Prescription 1>
...
▷ Dispenser: 2
```

### 7.1.1.4 Duration of the medicine administration and additive quantity

The prescription plans can be divided into five periods (P 1 - P 5), as is also the case for feed and concentrate plans. This makes it possible for example to increase the amount of additive continuously over a longer time frame and then to reduce it again towards the end of the treatment.

```
Additive
Animal
Group
▶ Medicine prescription
Electrol. prescription
```

1. > **Feeding > Additive > Medicine prescr.**
2. Enter the length (number of days) of the first feeding period in **P 1**.
3. Use to change to the **from** column and enter the desired value.
4. Use to change to the **to** column and enter the desired value.

```
<prescription 1>
days from to g/
▷ P 1: [3 0 0]
P 2: 0 0 0
```

5. For **P 2** to **P 5**, proceed analogously to **P 1**.

In contrast to the feeding plans, the final value of the previous period is not taken over as the starting value for medicine plans. Every period can be individually entered.

```
<prescription 1>
  days from to g/
▷ P 1: [3 10 20]
  P 2: 0 0 0
```

6. In **Duration**, you can check the total duration of the dispensing of additive.

7. If you want to create further prescription plans, proceed as previously described.

**Note** The message here might be shown if you had selected a high value for **Medicine dosages** and subsequently reset the (**Dosage**) dosage type from for example g/100 kg to g/l.  
if you press  the values which you have entered in the prescription plan will be automatically corrected to the maximum possible values. Press  if you want to cancel the procedure to correct the values themselves.


```
runtime too long!
reduce quantity?
```

**Note** The prescription plans are not coupled to the barn transfer date of an animal. The additive will only be administered if the prescription plan at **additive 2 dispensed** has been activated by the selection of **R1**, **R2**, **R3** or **R4**. If the overall feeding duration has ended according to the feeding plan, the feed with additive will continue to be dispensed. In this case the feed amount last fed at the end of the prescription plan will be maintained.

**Note** The amount of additive should not, if possible, go below the additive quantity of 1 g /portion. If the amount of additive is less than 1 g /portion, mix the additive with dextrose or milk powder to increase the volume of the additive.

## 7.1.2 Creating electrolyte prescription plan

You can create an electrolyte prescription plan.

1.  > **Feeding** > **Additive** > **Electrolyte prescr.**
2. Set the electrolyte **quantity** (concentration).
3. Set the **duration** of the administration of electrolytes.
4. Set how much **electrolyte** feed the animal can consume per meal.
5. Set how much **feed** the animal can consume per meal. The amount of feed that the animal can consume each day is limited by the feeding plan.

```
Additive
...
Medicine prescription
▶ Electrol. prescription
```

```
Electrolyte prescription
▷ Quantity: [30] g/l
Duration: 2 days
Electrolyte: 1.5 l
Feed: 2.0 l
Waiting time: 02:00
Dispenser: 2
```


<b>Note</b>	The animals receive alternately electrolyte feed and milk feed. If you have set 0 l at feed, the animal will only receive electrolyte feed.
-------------	---

6. In **Waiting time**, you set how long the animal must wait until it can consume milk feed after the electrolyte feed or, as the case may be, electrolyte feed after the milk feed. The waiting time also applies if the animal only receives electrolyte feeds (feed = 0.0 l).
7. Select **dispenser 2**.

## 7.1.3 Setting dispensing of additive

After you have created the prescription plan, you can allocate it to individual animals or to a group and then activate. You can also allocate more than one prescription plan to a dispenser in order to have flexibility in the additive plan.

### 7.1.3.1 Administration of individual animal's medicine

1.  > **Feeding** > **Additive** > **Animal**
2. Select the desired animal.

```
additive
▶ animal
...
```

3. Select **additive 2** and press the respective line .

```
< 21/B > 8.0 l
▶ Additive 2: no
  blocked: no
```

3.1 Select **Dispensed** in the prescription plan.

```
< 21/B > 8.0 L
▷ dispensed: [ no]
```

3.2 More lines will appear. If you press  in **Dosing**, you can enter deviations. In the following lines, the **dosage** according to the prescription plan and the corrected dosage will be shown.

```
< 21/B > 8.0 l
  dispensed: R2
▶ dosing: 12 g/100 kg
  Weight: 60 kg
  Additive 2: 1.2 g
  Additive day: 1
```

3.3 If you press  in **Weight**, you can correct the weight. The increase will be automatically adapted to the new weight value.

<b>Note</b>	If the additives are to be dispensed according to the weight of the animal, it is important that you enter the exact weight of the respective animal. This is so that heavy animals should receive more additive than lighter ones.
-------------	---


3.4 In **Additive 2**, the amount of additive is shown.

3.5 If you press  in **Additive day**, you can shorten or lengthen the duration of the dispensing of additive. In the following lines, the corrected **prescription day** and the **prescription end** are shown.

```
< 21/B > 8.0 l
▶ Additive day: 3
  Correction: 2 days
  Prescr.day: 5
  Prescription end: 7 days
```

4. **Blocked** (see 7.1.4 Handling of residual portions on page 39).

### 7.1.3.2 Administration of individual animal's electrolytes

1.  > **Feeding > Additive > Animal**

2. Select the desired animal.

```
Additive
▶ Animal
  ...
```

3. Select **additive 2** and press the respective line .

```
< 21/B > 8.0 l
▶ Additive 2: no
  blocked: no
```

3.1 Set **dispensed EL** .

```
< 21/B > 8.0 l
▷ dispensed: [no]
```

3.2 More lines will appear. If you press  in **Dosing**, you can enter deviations. In the following lines, the **dosage** according to the prescription plan and the corrected dosage will be shown.

```
< 21/B > ▾ 8.0 l
dispensed: EL
▶ dosing: 0 g/l
Electrolyte: 1.5 l
Feed: 0.0 l
Additive day: 1
```


3.3 In **electrol.**, the electrolyte feed amount per meal will be shown. Press  if you want to change these.

3.4 In **Feed**, you can change the amount of milk feed which the animal can consume per meal.

3.5 If you press  in **Additive day**, you can shorten or lengthen the duration of the dispensing of additive. In the following lines, the corrected **prescription day** and the **prescription end** are shown.

```
< 21/B > ▾ 8.0 l
▶ Additive day: 3
Correction: 2 days
Prescr.day: 5
Prescription end: 7 days
```

### 7.1.3.3 Dispensing to an animal group

1.  > **Feeding** > **Additive** > **Group**

2. Select the desired group in **Group**.

```
Additive
Animal
▶ Group
...
```

3. The **Additive 2** line is variable. If additive 2 was already administered to one or more animals of the group, **partly** will be shown. If all animals in the group receive the same additive, the respective prescription abbreviation (**R1**, **R2**, **R3** or **R4**) or **EL** will be shown.

```
<Group A>
▶ Additive 2: [partly]
blocked: no
```

3.1 If you press , you can find out from a list how many animals are in the group:

- > Receive neither medicine nor electrolytes
- > Receive medicine in accordance to the respective prescription plan
- > Receive electrolytes

```
<group A>
▶ dispensed: [part]
none: 17
P1: 1
P2: 2
blocked: 0
```

3.2 If you want to administer an additive to the group, press  in the **dispensed** line and select the respective prescription. This message appears in the display. Confirm the message with  if the animals of the group are to


```
group A
additive P1
dispense?
```

receive the additive in accordance with the prescription plan (here: **R1**).

<b>Note</b>	Animals which are blocked (see <b>7.1.4 Handling of residual portions</b> on page <b>39</b> ) do not receive any additive. Animals that are already receiving additive will not be “converted ” to the prescription plan of the group. If all animals, including those who are already receiving the additive, are to receive the additive in accordance with the prescription plan, you must set <b>no</b> in <b>Additive 1</b> so as to cancel all animals from the additive. This message appears. Confirm this with <input type="text" value="Enter"/> . Now you can select the prescription plan which then applies to all animals in the group.
-------------	---

```
group A
no additive
dispense?
```

#### 7.1.3.4 Changing the dispensing of additive

1.  > **Feeding** > **Individual animal** > **Additive 2**
2. Select the desired animal.
3. The respective prescription plan will be shown in the **Additive 2** line. If you press , you can change the settings:
  - 3.1 You can end the dispensing of additive in the **Dispensed** line [**no**] or select another prescription plan (**R1**, **R2**, **R3** or **R4**) or **EL**.
  - 3.2 If you want to change the prescribed amount of the additive for the selected animal, press  in the **Dosing** line. This will take you to the four-lined submenu:
    - 3.2.1 Enter the desired period of validity in **Deviations..**
    - 3.2.2 Enter how much the currently dispensed additive amount should be increased or decreased in **Amount**.
    - 3.2.3 Here you see the amount of the dosage according to the prescription plan (**Prescription**)

```
Feeding
▶ Individual animal
...
```

```
< 21/B > ↘ 8.0 l
...
▶ Additive 2: R2
```

```
< 21/B > ↘ 8.0 l
dispensed: EL
▶ dosing: 0 g/l
Electrolyte: 1.5 l
Feed: 0.0 l
Additive day: 1
```

```
< 21/B > ↘ 8.0 l
▶ Deviations: [4] days
Quantity: 2 g/l
Presc.: 15 g/l
Dosing: 17 g/l
```

3.2.4 Here you see the amount of the dosage after the change (**Dosing**).

Pressing  once takes you one menu level higher:

- 3.3 In **weight** (only if **R1**, **R2**, **R3** or **R4** is selected in **dispensed**), the current animal weight is shown. If you want to change this, press . This will take you to another submenu:

```
< 21/B > ▾ 8.0 1
dispensed: R2
dosing: 12 g/100 kg
▶ Weight: 60 kg
Additive 2: 1.2 g
Additive day: 1
```

3.3.1 Enter the desired value in **Weight**. The increase will be calculated automatically.

- 3.4 The (updated) amount of additive is shown in **Additive 2** (only if **R4**, **R2**, **R2** or **R3** is selected in **dispensed**).

- 3.5 The electrolyte feed amount will be shown in **Electrol.** (only if selected in **dispensed EL**). Press  if you want to change these.

- 3.6 You can change the milk feed amount which the animal can consume per meal in **Feed** (only if selected in **dispensed EL**).

If you press  in **Additive day**, you can lengthen (but only after the second day of dispensing the additive) or shorten the duration of dispensing the additive. The corrected **prescription day** and the **prescription end** are shown in the lines below.

```
< 21/B > ▾ 8.0 1
▶ Additive day: 3
Correction: 2 days
Prescr.day: 5
Prescription end: 7 days
```

<b>Note</b>	If the deviation plan for the animal is no longer valid, then it will become an <b>Expire animal</b> and automatically revert to being supplied with additive according to the prescription plan.
-------------	---

#### 7.1.4 Handling of residual portions

**Block rem. portion** prevents certain calves from drinking residual portions which contain additive (medicine!).


If an animal does not completely consume a feeding portion which contains additive, (the rod electrode is covered), the feed

consumption is blocked for those animals that should not receive additive.

Feed consumption for blocked animals can be resumed only

- if the residual portion is drunk by another animal which is supposed to receive additive or is not blocked for residual portion consumption
- or the residual amounts are automatically evacuated via the mixer drain valve (if present).

#### 7.1.4.1 Blocking the residual portion for individual animals

1.  > **Feeding** > **Additive** > **Animal**
2. Select the desired animal.
3. In **blocked** , enter whether the animal should be blocked for residual portions which contain additives.


```
Additive
▶ Animal
...
```

```
< 21/B > ▼ 8.0 l
Additive 2: no
▷ blocked: [yes]
```

<b>Note</b>	To lift the block for an animal to administer additive, you must enter <b>no</b> in <b>blocked</b> . Only then can you set the desired prescription plan in <b>Additive 2</b> . Proceed similarly if you want to block an animal which receives the additive. Set no in <b>Additive 2</b> and then set yes in <b>blocked</b> .
-------------	--

<b>Note</b>	Blocked animals will not be administered any additive even if the dispensing the additive has been activated for the whole feeding group (see <b>7.1.3.3</b> Dispensing to an animal group on page 37).
-------------	---

#### 7.1.4.2 Blocking of the residual portion for animal groups

1.  > **Feeding** > **Additive** > **Group**
2. Select the desired group.

```
Additive
Animal
▶ Group
...
```



3. If you press  in **blocked**, you will open a submenu. There you can block residual portions with additive for the displayed animal group.
4. In **blocked**, select the **yes** value and press . All animals in the respective group will be blocked for residual portions unless additive is being dispensed at that moment to them.

```
<Group A>
  Additive 2: partly
▶ blocked: no
```


```
<Group A>
▶ blocked: [no]
  dispensed: 1
  not blocked: 5
  blocked: 0
```

<b>Note</b>	Electrolyte feed is also possible if the administration of medicine is blocked for an individual animal or for the whole animal group (see <b>7.1.3</b> Setting dispensing of additive on page <b>35</b> ).
-------------	---

<b>Note</b>	Residual portions which contain additive are drained off or are fed to an animal that is allowed to have the additive. If an animal with additive entitlement is followed by a blocked animal, the feeding portion will only be prepared after the feeding box has been rinsed with clear water (fully automatic) or after eight portions without additive have been prepared.
-------------	--

## 7.2 Dosing of extra portions with additive

You can manually start the preparation of feeding portions at anytime. These feeding portions are not deducted from the animal's daily amount which it is entitled to according to the feeding plan.

1.  > **Extra portion**
2. Confirm **start?** with . The extra portion will be prepared.

```
Manual function
▶ Extra portion
  Mixer: drain?
  ...
```

The following parameters are considered for the preparation and dosing of the extra portion:

- **Additive**

Enter the concentration for additive 2 and additive 2 here if you want to add additives to the extra portion.


```
Extra portion
  Start?
  Output: [bucket]
  Quantity: 0.5 l
  Temperature: 42.0°C
  Concentr.: 150 g/l
  Milk ratio: 100%
▷ Additive 2 0: g/l
```



## 8 Animal control

You can check the feed consumption with dispensing of additives for each animal in the **Animal control** menu.

### 8.1 Calling up animal information


After **Info**  has been pressed, the following menu appears:

- **Animal list**
- **Entitled**
- **Alarm**
- **Expire date**
- **Additive**
- **marked**
- **...**

```
Animal control
Animal list
Entitled: 15
Alarm: 3
Expire date: 4
▶ Additive: 50
Marked: 2
...
```

The number of animals that satisfy this criterion is shown in the display of every menu.

### 8.2 Information about interrupted feeding procedures

1.  > **Additive** > **Break off**
2. Select the desired animal.
3. In **with additive**, you can see how often the feed with additive has been broken off. In **without additive**, you can see how often the feed without additive has been broken off.

```
< 20/A2 > 8.0 1
Additive: R1 no
▶ Break off: 1 0
...
```

```
< 20/A2 > 8.0 1
▶ with additive 1 0
without additive 0 0
```

### 8.3 Information about animals with expire date messages

One day before a temporally limited action (e.g., additive prescription plan) is to end, an expire date message for the action in question is displayed.

The following expire date messages can appear, among other things:

### End of an additive or electrolyte prescription plan



Once an additive or electrolyte prescription plan has come to an end the animals receive no more additives. The relevant expire date message that reminds you of the discontinuation of the plan is displayed on the right.

```
< 20/A1 >  ↘ 8.0 1
additive prescr. 1
▷ delete all?
```


### Deviation plans

When the deviation plan for electrolytes or additive expires, an expire date message is also displayed to remind you that the corresponding animal is being fed again exactly according to the electrolyte or additive plan of the group.

```
< 20/A1 >  ↘ 8.0 1
deviations feed
deviations conc.
deviations additive
▷ delete all?
```

<b>Note</b>	Press  to hide the message. The message is displayed again on the next day and can be deleted by pressing  . The display continues until the message is deleted.
-------------	--

#### 8.3.1 Deleting expire date messages

Navigate to the last line with **delete all?** below all expire date messages and press . All available animal expire messages for the corresponding animal are deleted.

```
< 20/A1 >  ↘ 8.0 1
additive prescr. 2
▷ delete all?
```

#### 8.4 Information about animals with dispensing of additive

The **Additive** control menu is shown only if at least one animal is receiving additive.

```
Animal control
...
▶ Additive: 50
...
```

> At **Additive 2**, you can see which prescription or electrolyte plan is being or has been used for the administration of additives or electrolytes to the animal.

```
< 20/A2 >  ↘ 8.0 1
▶ Additive 2: R1 R1
Break off: 0 0
```

> If you open the menu, you can end the additive dosage (**dispensed no**) or set another additive prescription plan.

- > In the submenu which now opens you can check and/or change the following values:
  - > Relative (%) and absolute (l) feed **consumption** today and yesterday (not for electrolyte)
  - > How much **additive** or **electrolyte** was given to the animal today and yesterday
  - > The **dosage** of the additive: if you press , you can change the dosage
  - > **Weight**: If you press , you can see or change the weight value of the calf (the latter only if scales are present)
  - > You can see how long the animal has already been receiving additives at **additive day**. If you press , you can lengthen or shorten the administration of additives (**correction**). The prescription day corresponds to the corrected additive day.
- > From **Break off**, you can see how often the feed consumption with/without additive was broken off

```
< 20/A2 >  ↘ 8.0 1
▶ received [e1]
  dosing: 40 g/l
  electrol.: 2.0 l
  Feed: 1.5 l
  Additive day: 3
```

```
< 20/A2 >  ↘ 8.0 1
▷ Deviations.: [3] days
  Quantity: 10 g/l
  Presc.: 40 g/l
  Dosing: 50 g/l
```

```
< 20/A2 >  ↘ 8.0 1
  Additive day: 3
▷ Correction: [1] days
  prescr.day: 4
  prescription end: 10
```

```
< 20/A2 >  ↘ 8.0 1
▷ with additive 1 0
  without additive 0 0
```

<b>Note</b>	For the procedure, see <b>all</b> .
-------------	-------------------------------------



## 9 Cleaning

### 9.1 Specifications for cleaning

#### What must be cleaned?

The dosing reservoir, the hoses on the pressure and suction side of the dosing pump and the pipe elbow must be cleaned.

#### How often must they be cleaned?

The dosing device must be cleaned every time there is a change of additive or if there is a long break out of use.

### 9.2 Performing cleaning

#### 9.2.1 General safety instructions



#### Warning!

Hazardous or irritant materials!

- Collect the additive residues and dispose of them safely. When doing this be sure to comply with the manufacturer's instructions and national regulations for the use and disposal of the additive being used.
- 
- Always wear personal protective equipment (e.g. safety glasses, protective gloves) when handling additives. Comply also with the specifications of the safety data sheet for your additive.


### 9.2.2 Perform cleaning every time there is a change of additive or if there is a long break out of use



#### Warning!

Hazardous or irritant materials!

- Collect the additive residues and dispose of them safely. When doing this be sure to comply with the manufacturer's instructions and national regulations for disposal of the additive being used.

1. Exit automatic mode for the calf feeder.
2. Disconnect the suction hose from the dosing reservoir and empty the reservoir.
3. Wash out the dosing reservoir with clean water.
4. Fill the dosing reservoir with clean water and reconnect the suction hose to it.
5. Start the dosing pump and allow it to dispense about half the contents of the dosing reservoir. Separately and safely collect the dosed quantity.
6. Run the calf feeder purge program to clean the feeding box.
  - 6.1  > **Cleaning > Mixer**
  - 6.2 Confirm **Start?** with .
  - 6.3 If necessary, change the detergent amount and confirm with .
7. When putting out of service:
  - 7.1 Fully drain the dosing reservoir and fully empty the cleaning water from the dosing reservoir.
8. When changing additives:
  - 8.1 Pour an additive into the dosing reservoir and start the dosing pump so as to fill the hose.

```
Mixer cleaning
▷ start?
Cleaning cycles/day: 2
cleaning 1: 07:00
cleaning 2: 22:00
Drainage mode: [no]
```



---

<b>Note</b>	Separately collect the remainder of the cleaning water which was in the hose and is dispensed at the start, and dispose of it safely. When doing this be sure to comply with the manufacturer's instructions and national regulations for disposal of the additive being used.
-------------	--

- 8.2 Carry out a calibration (see chapter "Calibration" on page 27ff).
  - 8.3 If necessary run the calf feeder purge program to clean the feeding box so as to completely remove all residues of the additive.
9. Switch the calf feeder back into automatic mode.



## 10 Diagnosis

The dosing device and its functions can be checked via the **diagnosis** menu of the calf feeder. This menu facilitates troubleshooting in the event of a technical problem with the dosing device.

```
Diagnosis
  Valves
  ▶ Motors
  Heating
  ...
```

### 10.1 Motors



> **Diagnosis > Motors**

Here you can test whether the connected dosing device is operating properly, and test its actuation function.

1. In the **Additive 2** line, press  to test the operation of the dosing device.

If the test produces a negative result, please consult a service technician.

```
Motors
  Mixer: start?
  Milk pump: start?
  Powder: start?
  ▶ Additive 2: start?
  ...
```



## 11 Failures and warnings

If a **failure** occurs, the **automatic mode of the calf feeder will be interrupted**. A corresponding failure message appears in the hand terminal display and the green LED on the hand terminal flashes.

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

<b>Note</b>	If the warning messages are deleted or hidden by pressing <b>Esc</b> , then these will automatically reappear in the event of a new warning; in ten minutes at the latest.
-------------	--

Some warning and failure messages will be automatically deleted once the fault is rectified. Others are deleted only when you press **C** or in **Delete failure?** or **Delete warning?** **Enter**.

### 11.1 Failures

#### 11.1.1 Calibration

The calf feeder cannot switch to automatic mode if the additive has not been calibrated. This failure message appears if the additive has not been calibrated.

- > Calibrate the additive. For this see chapter “Manually calibrating liquid additives” on page 27.

```
Failure
▶ Calibration
```

```
<Additive 2>
▷ Start?
  Set qty: 20.0 g
  Runtime: 12.0 s
  Max. quantity: 99 g/l
  Date: 01.01.11
```

### 11.2 Warnings

#### 11.2.1 Calibration

The **Calibration** warning indicates that last calibration was 120 days ago.

```
Warning
▶ Calibration
```

1. Calibrate the additive. For this see chapter “Manually calibrating liquid additives” on page 27.
2. Delete the warning.

<b>Note</b>	If you delete the warning but do not then perform a calibration the message will reappear one day later.
-------------	--


```
<Additive 2>  
▷ Start?  
Set qty: 20.0 g  
Runtime: 12.0 s  
Max. quantity: 99 g/l  
Date: 01.01.11
```

## 12 Maintenance/servicing

The visual and functional inspection of the components can be conducted by the owner/operator.

Repair work must **always** be performed by a service technician.

### 12.1 Safety instructions

	<p><b>Danger due to live electrical components!</b></p> <p>Danger of death by electric shock!</p> <ul style="list-style-type: none"> <li>• Always disconnect the mains plug before carrying out any work on the dosing device.</li> </ul>
---	---

### 12.2 Maintenance intervals and activities

<p><b>Note</b></p>	<p>If you detect any faults or damage to the dosing device between the maintenance intervals recommended below, you must make sure that they are rectified immediately by a service technician as required.</p>
--------------------	---

#### 12.2.1 Daily

##### Visual inspection of the components

- A visual inspection of the dosing pump and also the hoses on the pressure side and suction side of the pump must be performed every day to check for wear and damage.

If any damage is detected during the visual inspection, the faulty components must be replaced before work can be resumed with the dosing device.

- An operational check of the dosing device must be performed every day.

If faults are detected during the operational check they must be rectified by a service technician.

### 12.2.2 Every 12 months

The pump hose on the dosing pump must be replaced every 12 month.

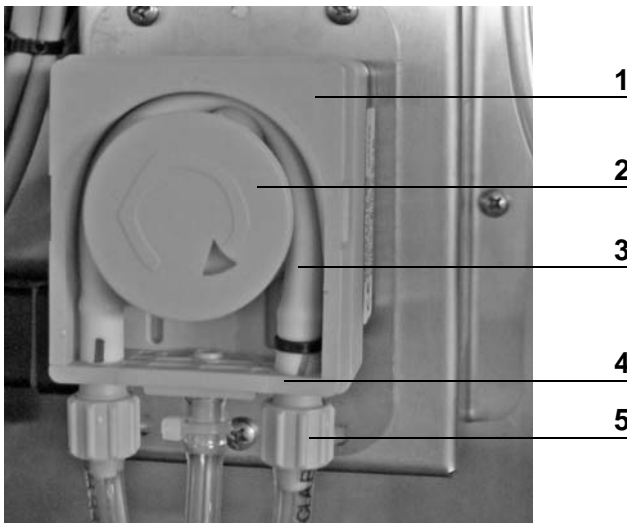
### 12.2.3 In compliance with national regulations

This inspection may be conducted **only** by a service technician!

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 damage is detected during the inspection, the faulty components must be replaced by a service technician before work can be resumed with the dosing device.

### 12.2.4 Exchanging the dosing pump hose



1	Housing
2	Impeller cover
3	Pump hose
4	Bracket
5	Plastic union nut



If you wish to replace the pump hose, proceed as follows:

**Warning!**

Risk of injury due to automatic start-up!

- Disconnect the dosing device from the mains before you replace the pump hose.
- Do not connect the dosing device to the mains unless the transparent cover is in place.

1. Disconnect the mains plug for the calf feeder and dosing device control unit.
2. Disconnect the hoses from the dosing pump by undoing the plastic union nuts.
3. Use a suitable tool to remove the pump cover.
4. Remove the impeller cover.
5. Position the dosing pump impeller at right angles to the housing opening (so there is only one roller directly on the housing) and remove the bracket together with the pump hose.
6. Remove the old pump hose from the bracket and fit the new pump hose.

<b>Attention</b>	Make sure the pump hose is not twisted.
------------------	---

7. Place the bracket in the guide provided for it in the housing.
8. Clamp the pump hose between the housing and the impeller roller. Position the pump hose by turning the impeller in the direction of rotation so that it is central to the roller.
9. Fit the cover back on the impeller and fit the housing cover.
10. Reattach the hoses to the dosing device and tighten the plastic union nuts.
11. Reconnect the calf feeder and the dosing device control unit to the mains.

