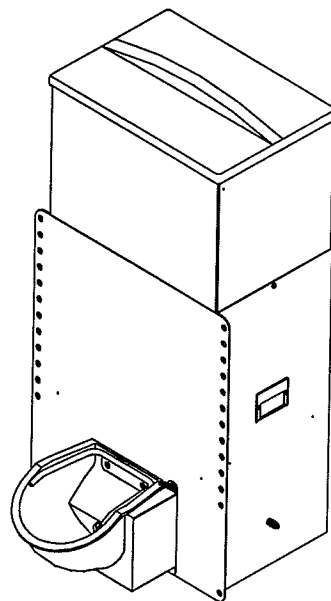
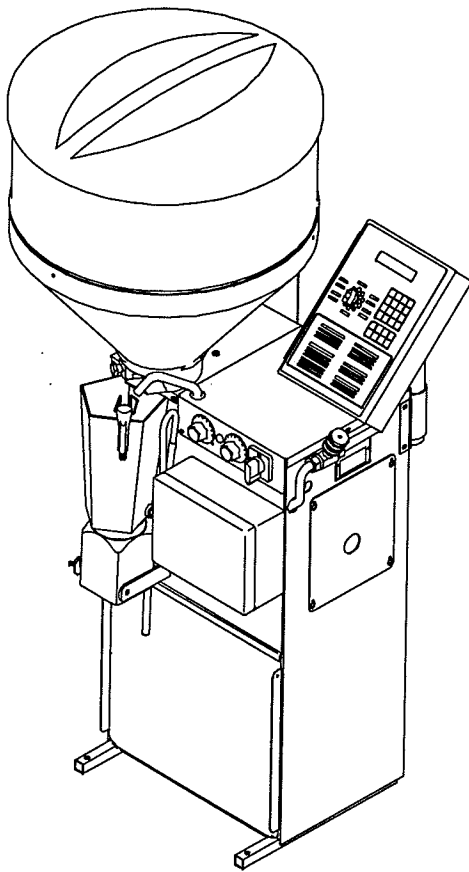


August 2000, as of version 7.0

## **User's Manual for Stand Alone 2 Combi with Concentrate and Scales**

**TAK1-SA2-KFA-38-P**  
**TAK1-SA2-KFA-32-P**  
**TAK1-SA2-KFA-30-P**  
**TAK1-SA2-KFA-28-P**  
**TAK1-SA2-KFA-27-F**





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# 1 Introduction

## 1.1 Guidelines for the user's manual

For a better understanding of the user's manual graphic symbols are used.



Attention: absolutely observe the contents of the user's manual, to avoid injury and damage to persons, animals and appliance.



Symbol for important instructions and additional explanations to operate the feeder.



Symbol for examples in the user's manual.



This symbol requires entry of a figure in the corresponding menu.



Additional reading assistance, when program switch has to be operated, e.g. to select a switch menu.



Symbol for measuring cylinder for collecting and weighing the feed components.



Symbol for scales used to weigh the feeding components during calibration procedure.



Symbol for thermometer to measure the body temperature.



Symbol for collar with identification system.

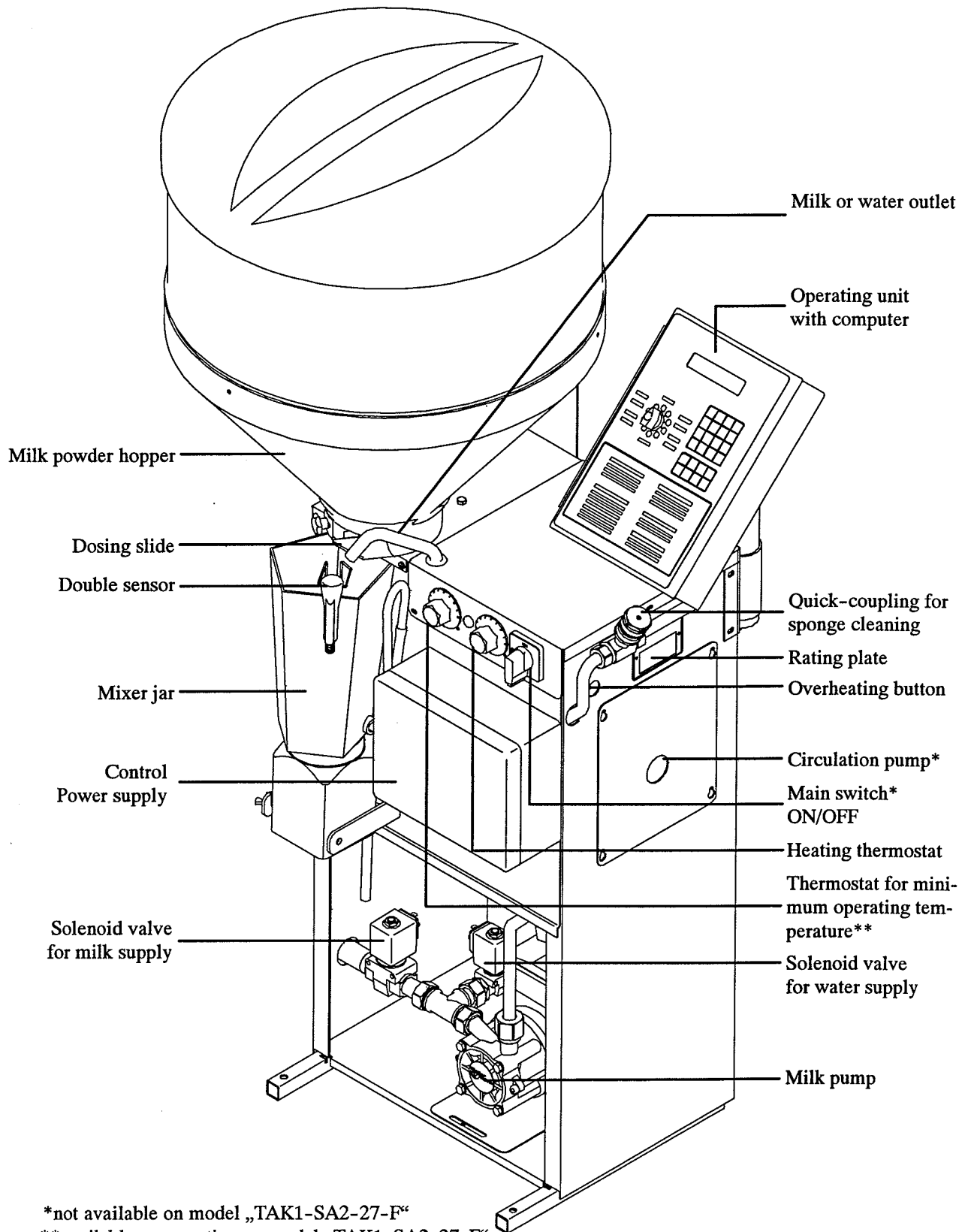
## 1.2 Safety instructions

- Installation of the automatic feeder must be carried out by qualified personnel.
- Before starting the machine, read the user's manual carefully.
- Proper installation and operation as well as care and maintenance of the automatic calf feeder are conditions for its faultless functioning.
- Unclear or erroneous data entries may have grave consequences. Therefore, all data should be checked as to their proper content, before entering them.
- The livestock owner is responsible for a steady and scrupulous control of his animals and the functioning of the automatic calf feeder. If, for any reason, the system should break down or some calves should not make use of it, the owner has to choose other feeding methods for those animals.
- The manufacturer accepts no liability for damages and their consequences, caused by wrong installation, wrong operation, unjust treatment, poor service and maintenance or false entries.
- Remove any projecting object (e.g. pipe ends) from the stable, because Responder collars could get caught in it.
- The system is only meant to feed calves.
- You will find more safety instructions in the following chapters.

If requested, wiring diagrams and spare part lists will be made available to you.

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Internet: [www.foerster-technik.de](http://www.foerster-technik.de)

### 1.3 Construction parts of the Stand Alone Combi

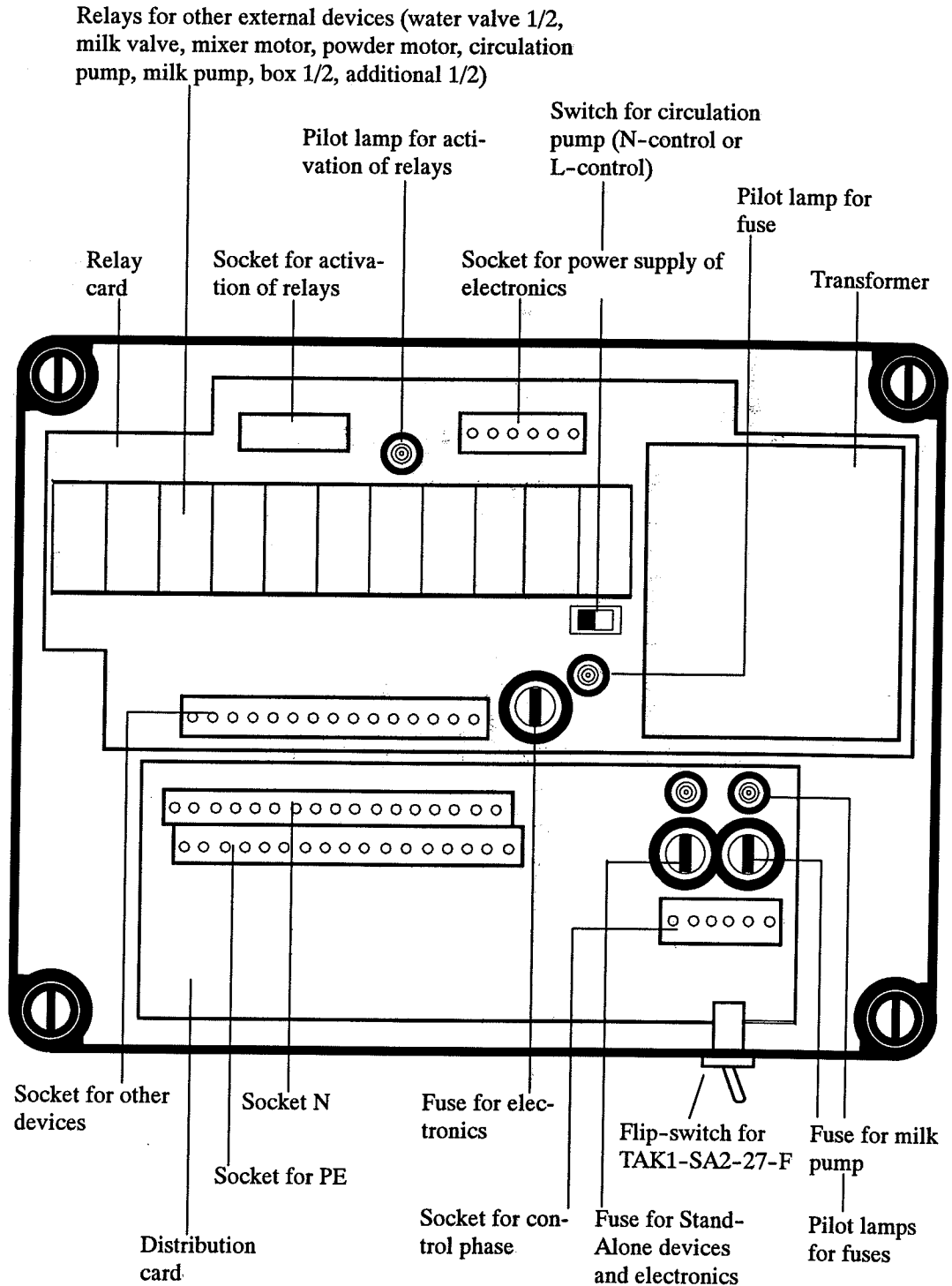


\*not available on model „TAK1-SA2-27-F“

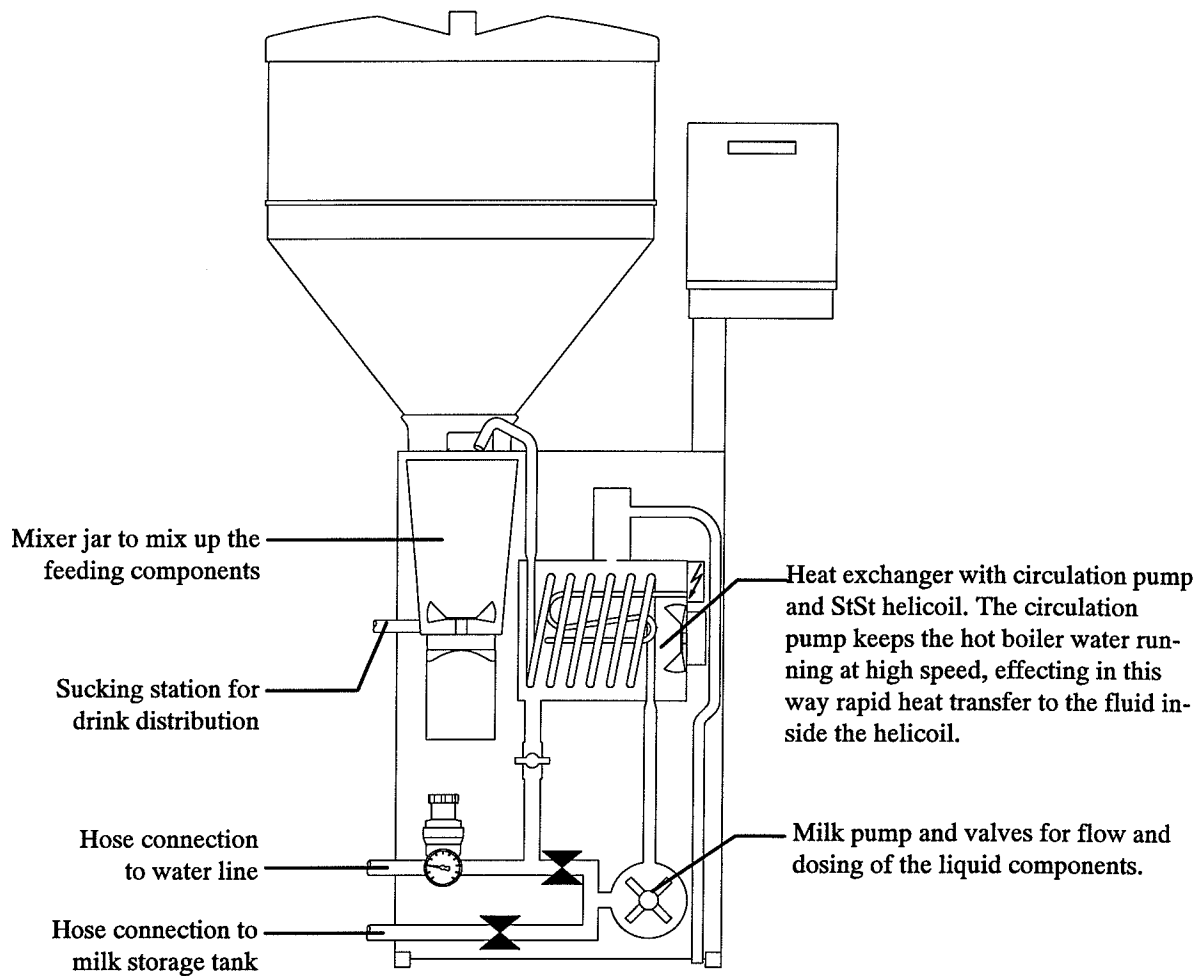
\*\*available as an option on model „TAK1-SA2-27-F“

### 1.3.1 Control - Power supply unit Combi

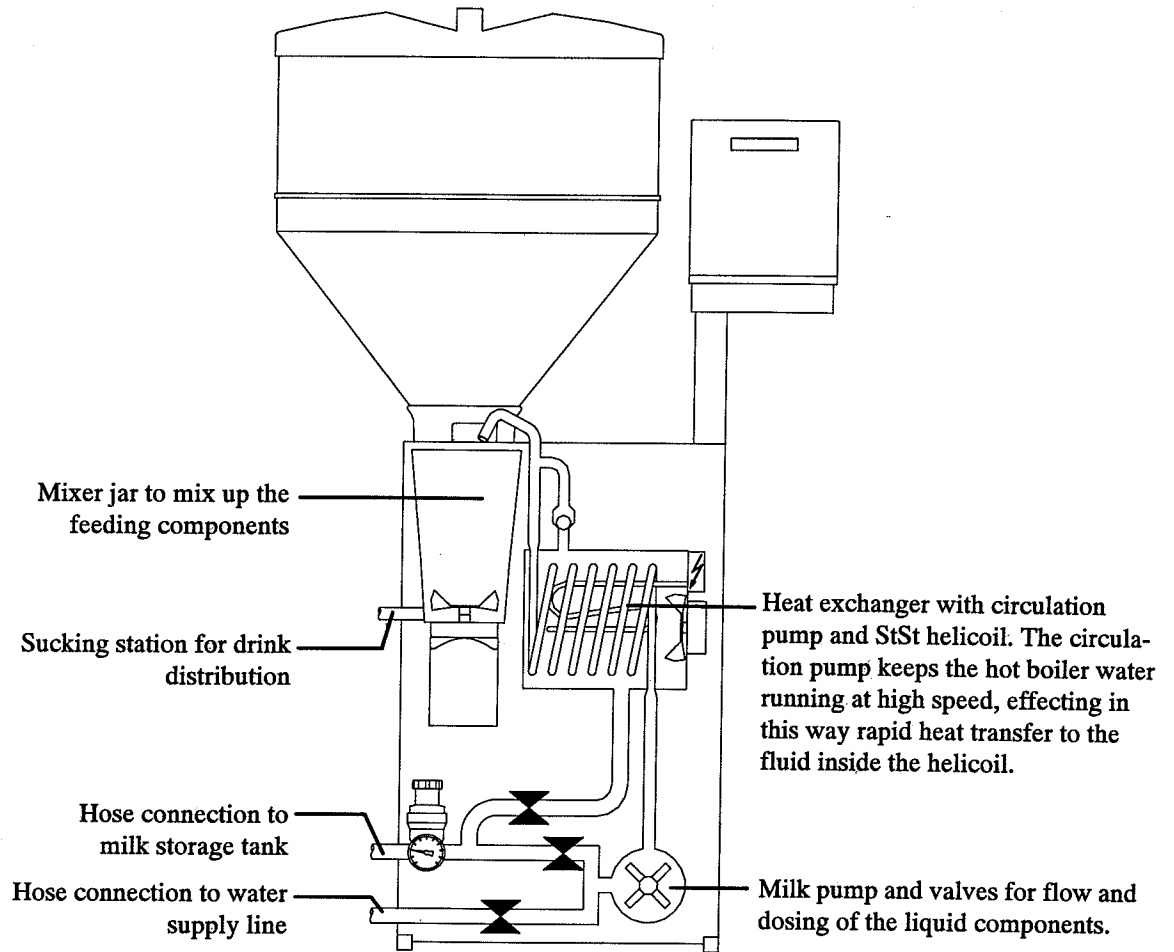
The power supply unit contains the transformer to power the processor control, the relays and the socket for external devices, the fuses and the pilot lamps.



### 1.3.2 Heat exchanger with single heating circuit for milk and water



### 1.3.3 Heat exchanger with separate heating circuits for milk and water



### 1.3.4 Accessories (not shown)

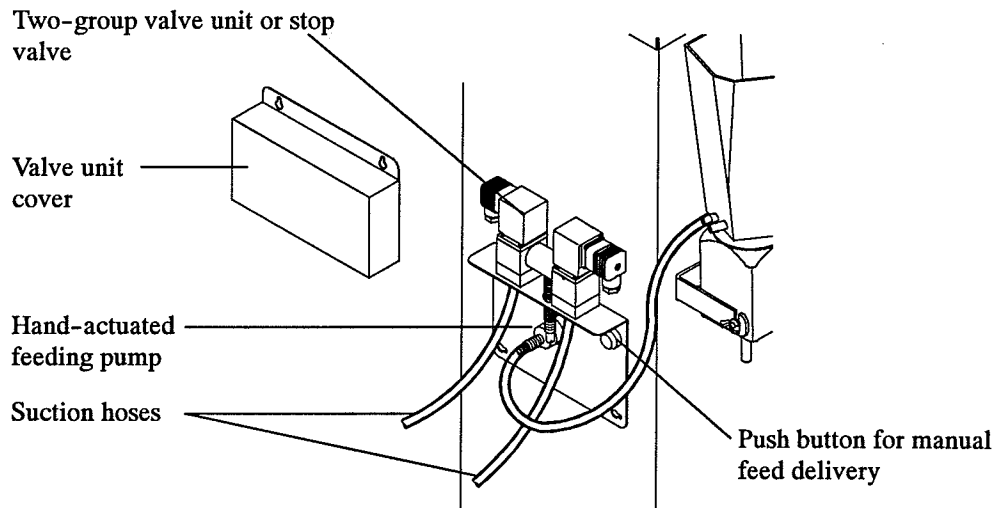
*You may find a more detailed description of the accessories in chapter „Accessories“.*

- Two-group-valve unit
- Additive dispenser for powdery additives.
- Additive dispenser for liquid additives.
- Pilot lamp box with connection capability for remote alarm.

### 1.3.5 Hand-actuated feeding pump

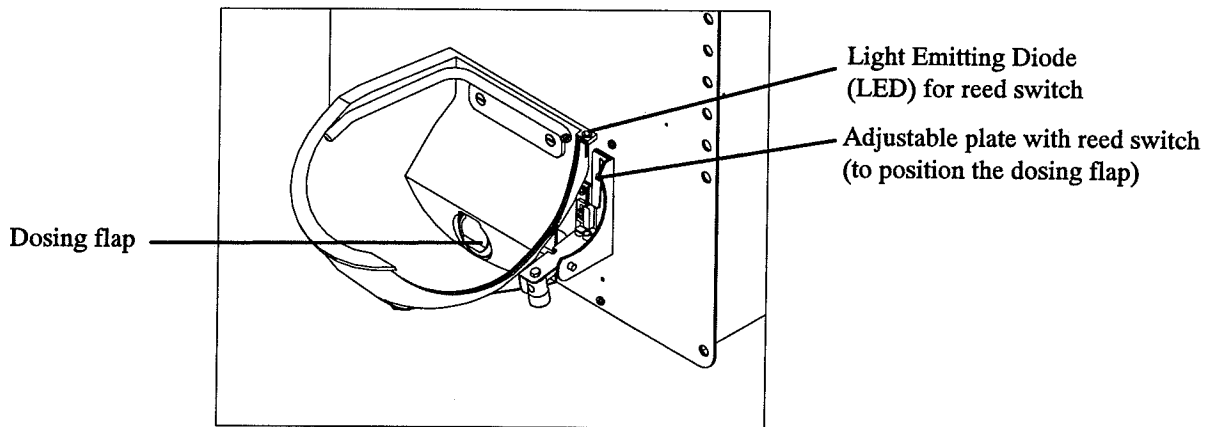
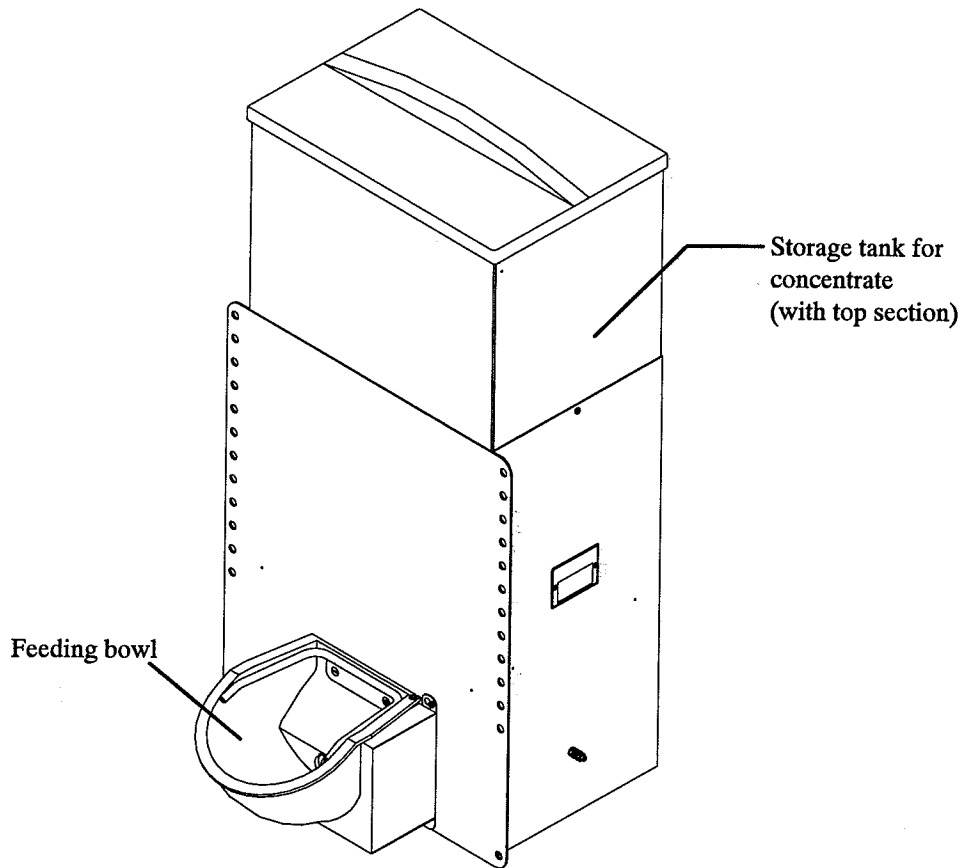
The hand-actuated feeding pump supports the calf's training in using the feeding station. You can find it between mixer exit and sucking station. The feeding pump can be activated by pushing a button at the lower side of the housing or at the sucking station. The feed is then directly transported from the mixer to the teat and into the mouth of the calf respectively.

You may also use the feeding pump to discharge manually rinse water located in the mixer jar.

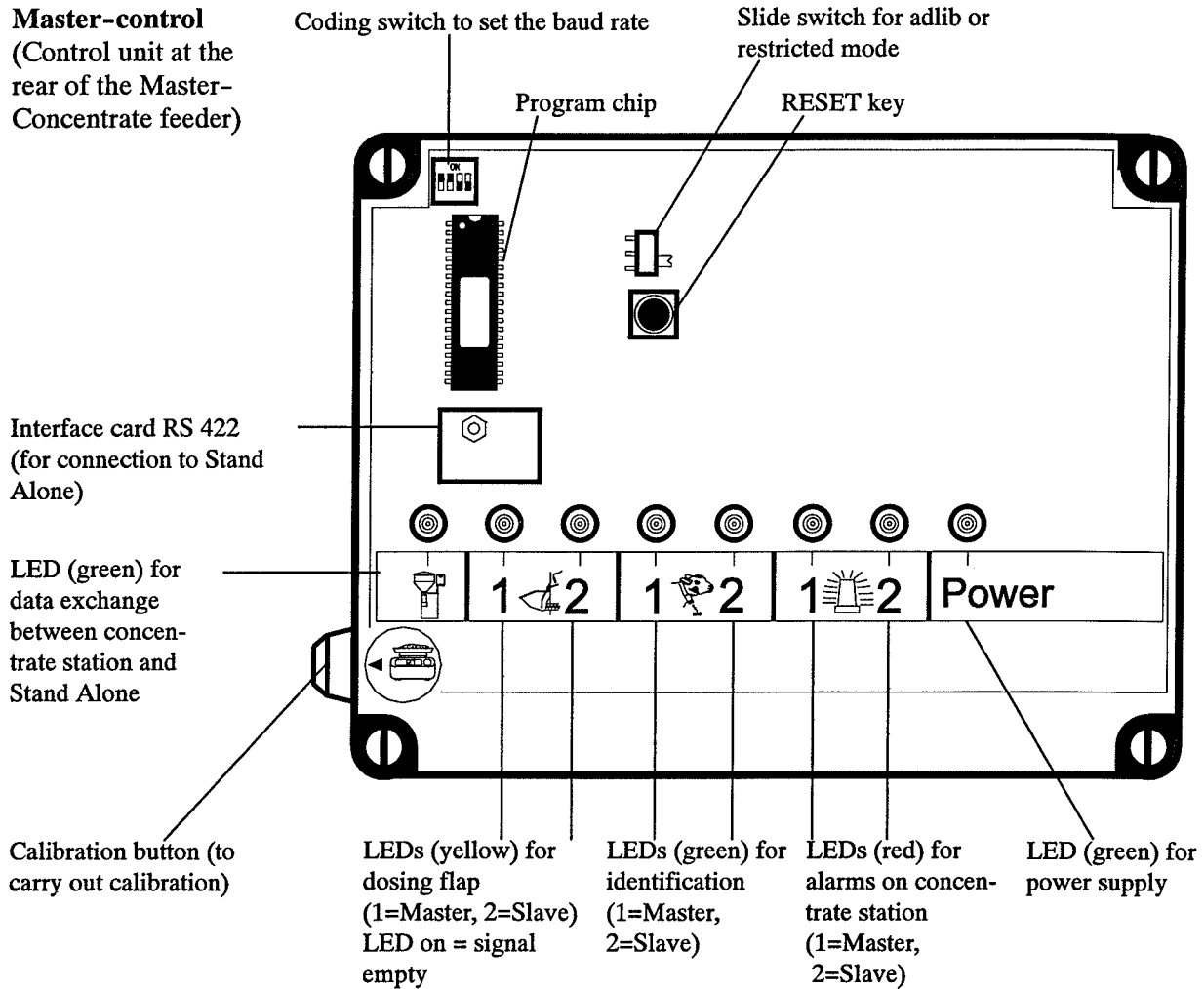


Do not clean the feeding pump with the rinse sponge. It may get clogged!

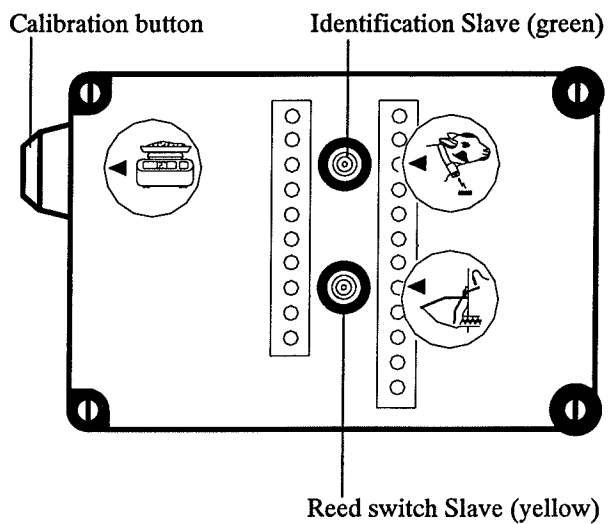
### 1.4 Construction Parts Concentrate Feeder



**Master-control**  
(Control unit at the rear of the Master-Concentrate feeder)



**Slave-control**  
(at the rear of the Slave-Concentrate feeder which is controlled by the Master)



## 1.5 Technical data automatic calf feeder

**Please observe the data on the rating plate on the right-hand side of the shell!**

### **Electrical connection**

**TAK1-SA2-38-P, TAK1-SA2-27-F (400V)**

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

**TAK1-SA2-32-P, TAK1-SA2-27-F (230V)**

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

**TAK1-SA2-30-P**

200V, 50 / 60 Hz, 20 A

**TAK1-SA2-28-P, TAK1-SA2-27-F (240V)**

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

### **Water connection**

1/2" hose with 3/4" hose coupling.

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

### **Heat exchanger**

Boiler contents approx. 7 liters, contents of the StSt helicoil 0.5 liters

### **Milk powder hopper - storage capacity (with top section)**

approx. 35 kg

### **Number of sucking stations and animals per station**

Each calf feeder can supply approx. 20 - 30 rear calves or 15 - 20 veal calves from one single sucking station. From two sucking stations it can supply approx. 50 - 60 rear calves, 20 - 30 veal calves or 20 rear calves and 15 veal calves.

## 2 Specifications Concentrate Feeder

### Electrical connection

- Power supply:** Safety transformer according to VDE 0551  
Mains voltage: 230 V/50 Hz  
Output voltage: safety low voltage 24 V AC  
Power: 72 VA safety class IP 54
- Master:** Safety low voltage 24 V AC, power consumption: 48 W
- Slave:** Safety low voltage 24 V AC, power consumption: 36 W
- Note:** The motors of the Master and Slave concentrate feeders never run together (they are mutually blocked), therefore one power supply will do for the Master as well as for the Slave.

### Storage capacity of concentrate storage tank

Depending on the type of concentrate used, up to approx. 70 kg. Volume: approx. 95 l

### Number of concentrate feeders and number of animals

The concentrate control unit located on the Master station can control 2 concentrate feeders, according to the Master-Slave-System. The distance between both concentrate feeders is determined by the maximum length of the antenna cable (max. 6 m). Longer distances require an additional Master station. To each Stand Alone you may connect up to 2 Master stations with one Slave station each.

Each concentrate station can provide up to 25 calves with feed. The exact number depends on the quantity of concentrate dispensed per calf.

### Distance between concentrate feeder and Stand Alone



The distance between Slave station and Master station must not exceed 6 m. The real length of the antenna cable is decisive and not the immediate distance („airline“).



Specifications are subject to change without prior notice.

## 3 Location of the automatic calf feeder

### 3.1 Local electrical connection

- Local electrical connection must be installed by a qualified electrician.
- Local regulations and safety precautions must be observed. An earth leak switch (30 mA) in customer's power supply is prescribed, in order to operate the automatic calf feeder.
- The automatic calf feeder requires its own power supply: *refer to chapter 1.5, page 17, „Technical Data“*.
- Nominal voltage and Nominal frequency must be observed. The supply voltage indicated on the rating plate must correspond to the one of the electric network.
- In case of overvoltage risk, install a surge voltage protector in the main distribution unit.

#### Equipotential bonding

For animals' safety and to prevent electrical faults, carry out an equipotential bonding of all metal parts such as automatic calf feeder, water conduits, sucking station and race-way out. At the rear of the calf feeder you will find the connecting screw of the equipotential bonding.

#### Lightning protection

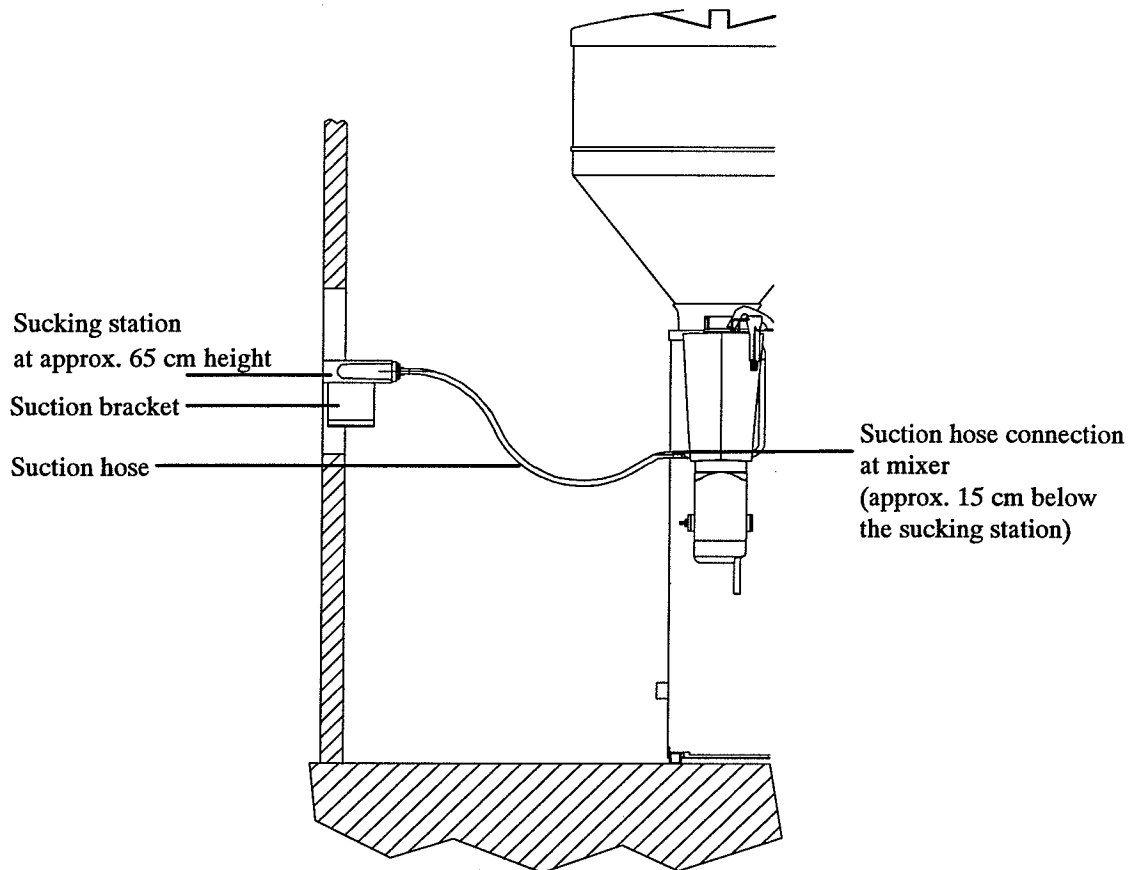
As it is impossible to protect the installation separately against lightning stroke, it is to the owner to install an adequate lightning protection (e.g. a lightning protection system for the entire building). Insurance against lightning is recommended.

### 3.2 Installation of the automatic calf feeder

- It is recommended to install the automatic calf feeder in a dry place, if possible separated from the animal area, e.g. in the fodder storage or similar detached room.
- A fence of planks protects the automatic calf feeder against dirt and flies. In case you should have problems with flies, especially during the summer, you may protect the mixer jar by means of a fly cover. The steam coming out of the openings can escape through the grating.
- Frost is not damaging to the calf feeder. In order to guarantee a good functioning of the feeding process even in case of frost conditions you may equip the automatic calf feeder with a protection against frost (available as an accessory). The operator has to ensure a reliable water supply.
- The suction hoses can be easily guided through the wall.
- If possible place the milk storage tank next to the automatic feeder.

### 3.3 Mounting the sucking station

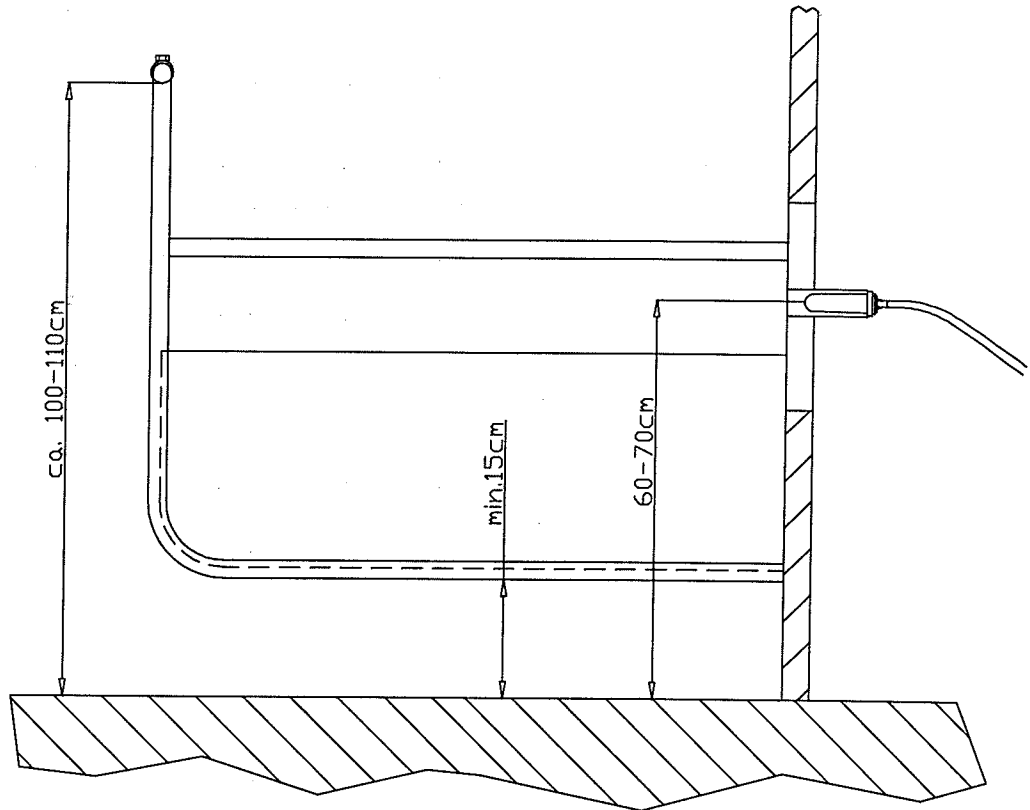
- Install the sucking station max. 65 cm above the ground of the stable.  
The sucking station must be approx. 15 cm above the connection of the suction hose on the mixer.
- The suction hose must be dimensioned such, that the mixer jar can be tipped unhampered in forward direction. If possible the suction hoses must not exceed 2 m.
- Mount the suction bracket with splash board towards the bottom.



### 3.4 Mounting the race-way

The sucking station or the concentrate feeder must be preceded by an appropriate race-way, in order to protect a calf from being pushed aside by other calves.

- Install the race-way according to the installation manual.



## 3.5 Connection micro-identification

- Connect the micro-identification according to the mounting instructions.



Install the cable for the micro-identification in such a way that it cannot be touched by the calves.

### 3.5.1 Identification „Mikro-Nedap“

- In case of „Mikro-Nedap“: Check wiring and program chip carefully.

You may check the identification range of the antenna by means of an antenna test (see chapter 5.10.3, page 60 ff, „Automatic registration of the Responder numbers and antenna test“). In case identification errors should occur, you may set the identification range by the Squelch-value. In case of connection of a concentrate feeder you have to set the Squelch-value in „Setup“. See chapter 5.6.1, page 42 ff, „Setup, activating the concentrate“.

### 3.5.2 Identification „Mikro-Tiris“

- In case of „Mikro-Tiris“: check wiring and program chip carefully.

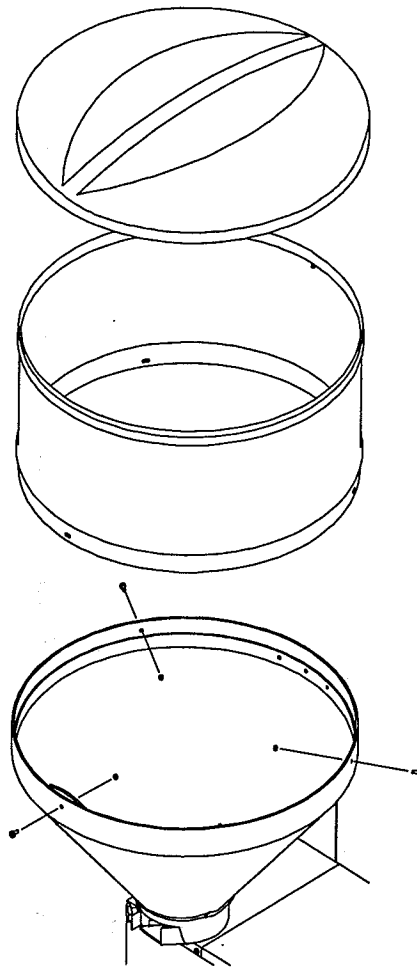
You may check the identification range of the antenna by means of an antenna test (see chapter 5.10.3, page 60 ff, „Automatic registration of the Responder numbers and antenna test“). In case of double or alien identifications, you should install a screening by means of earthed metal sheet plates.

### 3.6 Mounting the top section of the milk powder hopper

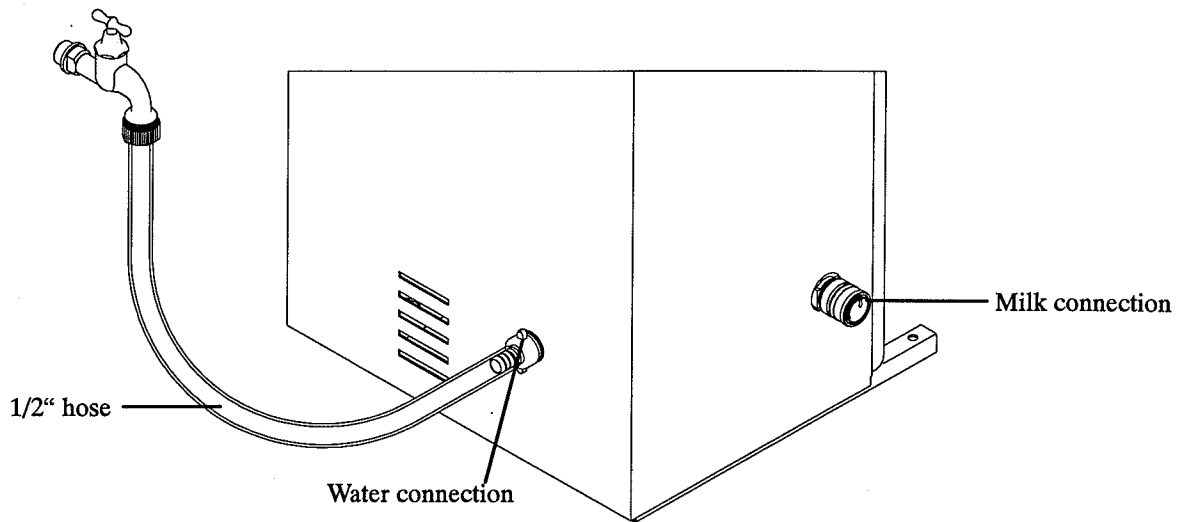
- Place the top section of the milk powder hopper (part of the delivery) on the powder funnel of the automatic calf feeder and secure it with the appropriate screws and nuts (part of the delivery).



Only use the top section delivered. Do not raise the top section!



### 3.7 Water and milk connection



#### 3.7.1 Water connection

- Connect the 1/2" water hose with a 3/4" hose coupling at the rear of the automatic calf feeder.

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



**Note:** To ensure a 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 float tank (water tank).

Install additional water valve.

Up to August 31, 2000 the pressure reducer is factory-set to 2 bar. As of September 1, 2000 it will be 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!**

### 3.7.2 Milk connection

Convey the milk straight out of the milk storage tank to the automatic feeder. In case long pipes are inevitable, use bigger diameters.

- Install connection for milk pipe on the bottom of the milk tank.

Air-containing pipes, very long and thin, as well as thin-walled pipes, prone to contract, lead to untimely switching-off or change-over of the system.

In order to avoid air bubbles, do not hang the milk hose into the milk tank from above.

The connections of the milk pipe must be reliably tight.

For hygienic reasons, avoid gross differences of diameters. Only use couplings and ties which can be easily and reliably cleaned.



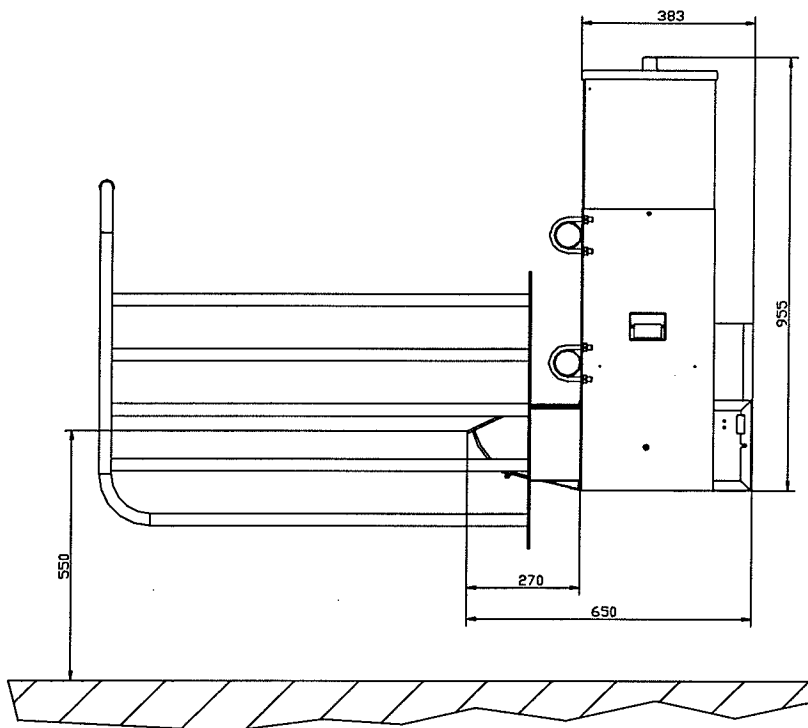
If the automatic calf feeder only runs in water mode, close the milk connection by means of the blind plug (part of the delivery).

## 4 Location of the concentrate feeder

- Connection of the concentrate feeder; refer to wiring diagram.
- Place the concentrate feeder in such a way, that the concentrate can be easily filled and maintenance is easy to carry out.
- The distance between Master-Station and Slave-Station should not exceed 6 m.

### 4.1 Mounting the concentrate feeder

- Mount the feeding bowl max. 55 cm above the box ground.



Diagrammatic view installation concentrate feeder:  
Dimensions in mm

- Mounting of the race-way: refer to chapter „Location of the automatic calf feeder“
- Connect the antennas: refer to chapter „Location of the automatic calf feeder“
- A calf which wants to drink or is drinking has to be in the identification field (green LED on concentrate control must light). The distance between the transmitter and the identification system must not exceed 20 cm, depending on the identification system used (ear tags or collar).



All cables must be installed in such way that they cannot be touched by the calves.

## 4.2 Filling of the concentrate feeder

The concentrate feeder can be filled with pellets, calf flakes and crushed or coarsely milled grains.



Fine-milled fodder or fodder with a high oats content may cause bridging. This can possibly lead to malfunctioning of the concentrate feeder.

Only fill with dry fodder!

## 4.3 Connecting the mains plug

Connect the mains plug of the concentrate feeder according to the electrical connection: refer to chapter 2, page 18, „Technical Data“

## 4.4 Checking and setting the dosing flap

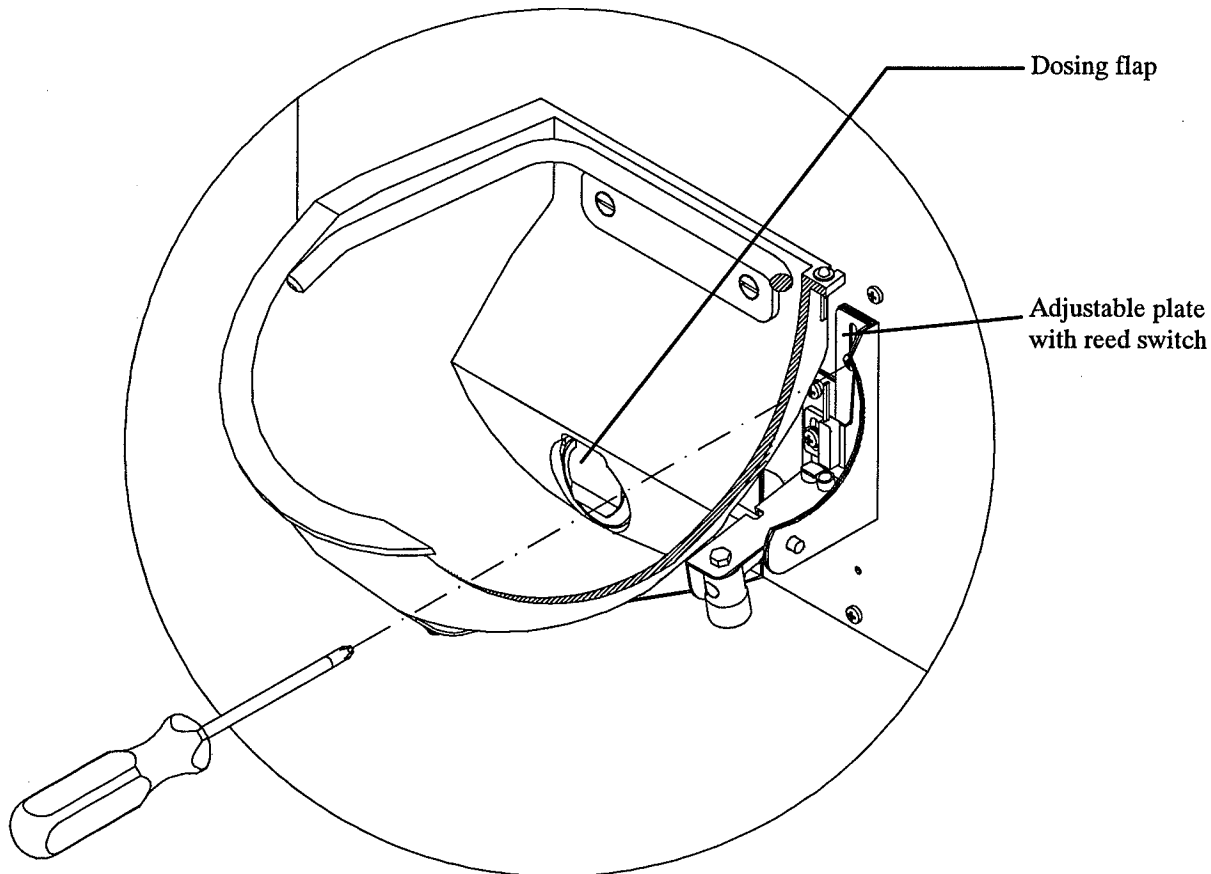
Depending on the type of fodder and its composition, the dosed quantity will have a different volume. You may regulate the position of the dosing flap by means of the adjustable plate. You may increase (wide opening of dosing flap) or reduce (small opening of dosing flap) the feed quantity to be dispensed.

### Checking the distribution of concentrate

- Check the transferred concentrate volume by means of a test Responder.
- If the volume in the feeding bowl should be too large or too small, change position of the adjustable plate with reed switch.
- Ensure that the dosing flap is running well.

### Regulating the dosing flap

- Remove the cover next to the feeding bowl.



- Only loosen the screw on adjustable plate with reed switch (see above drawing).
- Move the adjustable plate upward or downward, in order to change the position of the dosing flap.  
**Upward:** less fodder in the bowl. Take care that the signal empty will be displayed (LED must light).  
**Downward:** more fodder in the bowl. After 5 - 6 seconds (= 5 rotations of the shaft) the signal empty has to disappear, otherwise the fault message „Idle shaft“ will be displayed.



The LED lights, when the dosing flap signals „empty“.

- Check the transferred concentrate volume by means of the test Transponder.
- After regulation of the dosing flap fasten the screw on the adjustable plate and secure the cover.

## 5 Installation of the automatic calf feeder

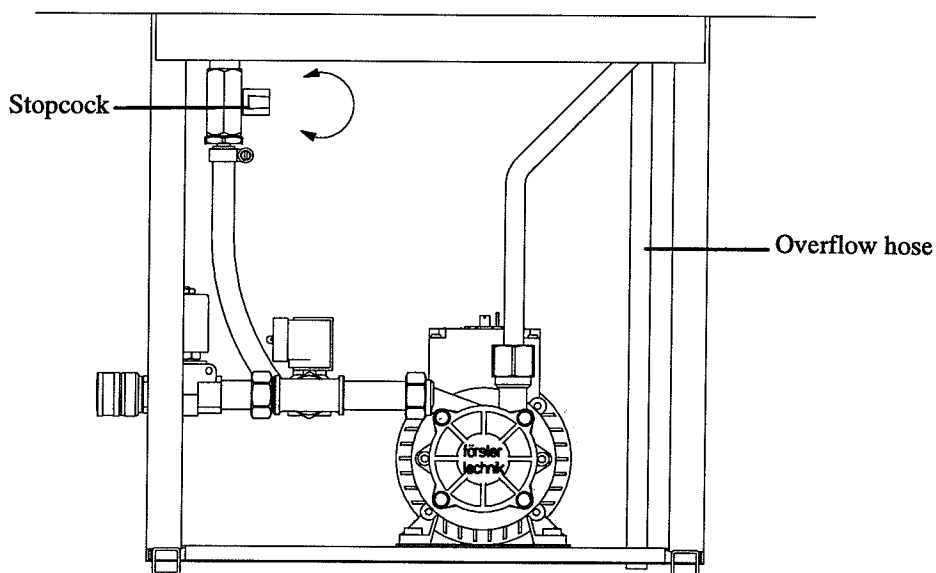
### 5.1 Operation with heat exchanger with single heating circuit



Since July 1998 all automatic calf feeders of the type „Combi“ are equipped with heat exchangers with separate heating circuits. The installation of automatic calf feeders with heat exchangers with single heating circuit only applies to machines ordered and installed before July 1, 1999.

#### 5.1.1 Filling the boiler of the heat exchanger with water

- Open the stopcock. Let the water flow until it comes out of the overflow hose, bubble-free.



- Close the stopcock.



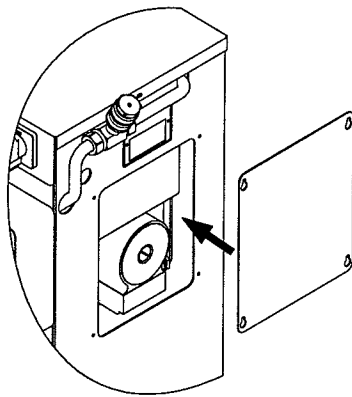
If (in exceptional case) the water pressure is insufficient (below 1,5 bar), fill the heat exchanger by means of the milk pump. To this purpose connect the milk pump to the filler pipe of the heat exchanger by means of a 1/2" hose with the usual 3/4" coupling. Set the thermostats to „0“. Connect the mains plug and turn the main switch to position „ON“. On model „TAK1-SA2-27-F“ turn on the flip-switch, situated on the right-hand side on the bottom of the power supply unit. Then press simultaneously the hand-operation keys „Water“ and „Pump“.

### 5.1.2 De-aeration of the circulation pump



The model „TAK1-SA2-27-F“ is not equipped with a circulation pump.

- Remove the cover, open the de-aeration screw and wait until some water begins to flow.



- Close the de-aeration screw.
- Fix the cover.



After 1 - 2 days, de-aerate the circulation pump once again.

### 5.1.3 Filling the milk powder in the powder hopper

- Only fill milk powder suitable for calf feeding. Do not put paper or other foreign matter into the powder hopper.



There is no warning in case of an empty powder hopper! The automatic feeder continues to work in the feeding mode without milk powder.

### 5.1.4 Filling the milk storage tank

The milk must always be clean. Straw, hay or other foreign material will affect the operational reliability considerably.

For cow milk and flaked milk use a slow-running stirring device with intermittent action, to avoid creaming of the milk. Continuously or fast running stirrers cause buttering. If the animals get too fat milk it could lead to indigestion.



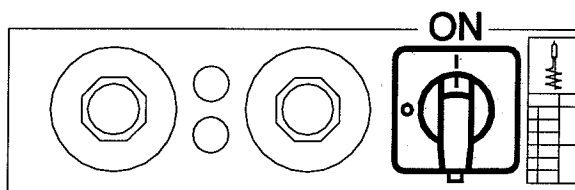
Cool the milk or preserve it with formic acid (20 - 30 ml, concentration 10 % per liter milk). Do not feed the animals with any milk starting to turn sour!

### 5.1.5 Connecting the mains plug of the automatic calf feeder



**Warning:** Before activating the heating, fill up the boiler in order to avoid damages and to guarantee a reliable functioning of the automatic feeder.

- Turn back both thermostats to zero and switch off the main switch (position „OFF“). On model „TAK1-SA2-27-F“ turn back the heating thermostat to zero.
- Connect the mains plug and switch on the automatic feeder by turning the main switch to position „ON“. On model „TAK1-SA2-27-F“ activate the flip-switch situated on the right-hand side on the bottom of the control and operating unit.



Once you switched on the automatic feeder, the display shortly features the new program version. Then the Stand Alone carries out a test routine. The display shows the corresponding messages „Check...“

## 5.2 Operation with heat exchanger with separate heating circuits

### 5.2.1 Connecting the mains plug



**Warning:** Before activating the heating, fill up the boiler in order to avoid damages and to guarantee a reliable functioning of the automatic feeder.

- Turn back both thermostats to zero and switch off the main switch (position „OFF“). On model „TAK1-SA2-27-F“ turn back the heating thermostat to zero.
- Connect the mains plug and switch on the automatic feeder by turning the main switch to position „ON“. On model „TAK1-SA2-27-F“ activate the flip-switch situated on the right-hand side on the bottom of the control and operating unit.

Once you switched on the automatic feeder, the display shortly features the new program version. Then the Stand Alone carries out a test routine. The display shows the corresponding messages „Check...“

### 5.2.2 Filling the boiler of the heat exchanger with water

The automatic calf feeder „Combi“ with separate heating circuits for milk and water has two water valves: one water valve towards the boiler of the heat exchanger and one water valve towards the StSt helicoil. When the hand-operation button „Water“ is pressed, the water valve towards the boiler of the heat exchangers will be opened.

- Only press the hand-operation button „Water“ until a solid water jet enters the mixer.



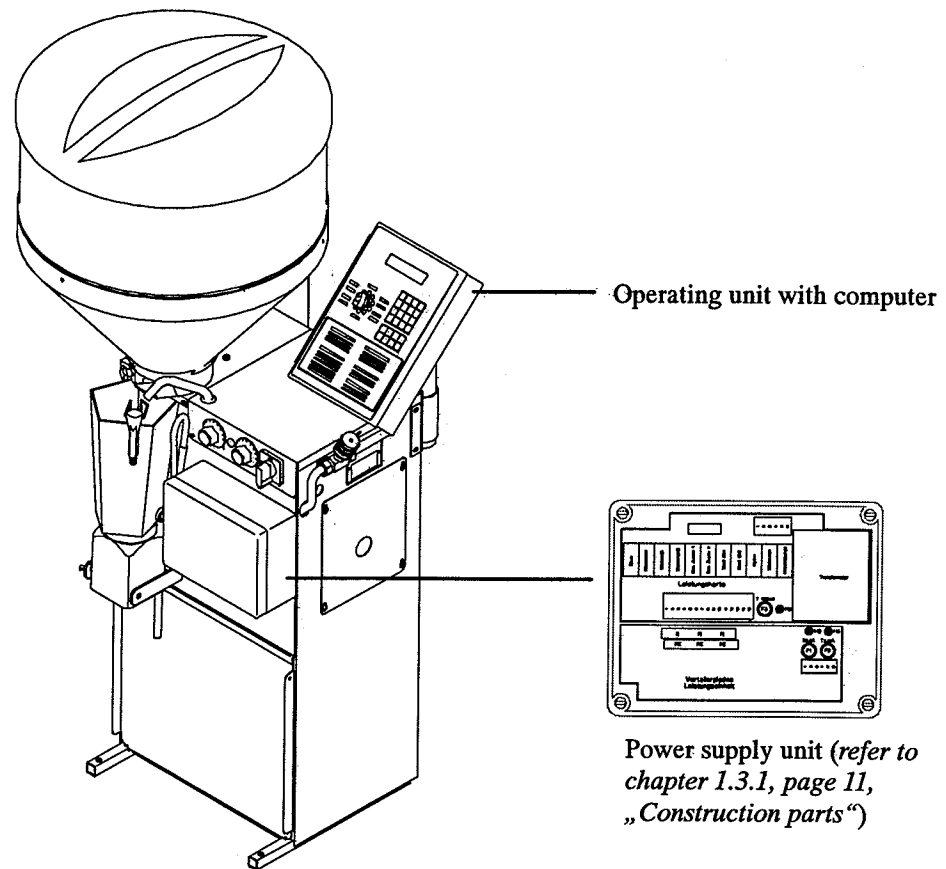
If the hand-operation buttons Water and Pump are pressed simultaneously, the water valve towards the StSt helicoil in the heat exchanger will be opened. Although water flows into the mixer, the boiler will not be filled.

Same procedure as for heat exchanger with simple heating circuit:

- de-aeration of the circulation pump,
- filling the milk powder into the powder hopper,
- filling the milk storage tank.

## 5.3 Operating and Control unit

### 5.3.1 Operating unit with computer and power supply unit



#### Operating unit with computer

On the operating unit with computer you can find the following controls: program switch, keyboard, hand-operation keys and display.



As far as the connections at the lower part of the control are not in use, they have to be concealed with covers.

#### Power supply unit

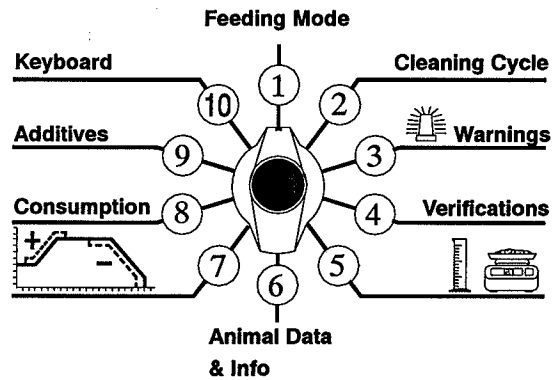
On the power supply unit you can find the transformer for the power supply of the processor control, the relays, as well as the sockets for the external devices, the fuses and pilot lamps.

## 5.3.2 Operational controls

### 5.3.2.1 Program switch and switch menu

The switch menus (program switch positions 1 - 9) are set by means of the program switch.

#### Switch menu



### 5.3.2.2 Keyboard and keyboard menu

Switch position 10 on the keyboard allows selection of the keyboard menus. In the switch positions 2 - 10 the keyboard is activated. When pressing the actually active key you will hear a high-pitched sound.

#### Keyboard

←	→	⬆	Start Stop
1 Esc	2	3 ⬇	Enter
4	5	6	yes/no +/-
7	8	9	0 C

The keyboard menus are located in the lower part of the computer and framed.

Keyboard menu		
<b>Operating Functions</b>	<b>Milk Feeding</b>	<b>Notes</b>
Machine Data ..... 1	Feeding plan ..... 10	Vaccinations ..... 30
Restricted / Ad libitum... 2	Concentration plan ..... 11	Treatments ..... 31
Milk Functions ..... 3	A/Po-Plan ..... 12	
Accustoming Aid ..... 4	A/Li-Plan ..... 13	
Setup ..... 5	Prescriptions (g/100 kg)... 14	
	Feeding Limits ..... 15	
	Entitlement intervals..... 16	
<b>Verification Functions</b>	<b>Concentrate</b>	<b>Delete Functions</b>
Warning ..... 20	Feeding Plan C1 ..... 40	Delay / Consumption ..... 90
Printing ..... 21	Feeding Plan C2 ..... 41	New installation ..... 99
Total Consumption ..... 22	Feeding Limits ..... 42	
Interruption Check ..... 23	Intervals..... 44	
Fault messages ..... 24	Wean by C ..... 45	
Scales ..... 25	Connection Test ..... 49	

Keyboard



When the program switch will be turned to 10, the display shows the following:

```
keyboard
input:
```

The required menu number can now be entered. The selected number of the keyboard menu will be shown on the display in the upper left area.

```
5# setup →
concentrate ^
```

**Keys with a double function:**



The keys with the numerals 1, 3 and 0 have two functions. This double function is always shown on a white field at the bottom right area. With an open memory (cursor flashes) the numeral will be active.

With a closed memory (cursor does not flash) the alternative function will be active.



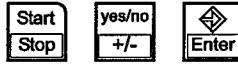
„Esc“ brings you step by step back to the menu.



The key Arrow Down „v“ allows paging through the submenus.



„C“ is the erase key and deletes e.g. alarm animals.

**Toggle keys:**

Toggle keys reverse the function when pressed. The actually valid function will always be shown on the display. „Start“ changes into „Stop“, „+“ changes into „-“, the memory is opened or closed.

**Horizontal arrow keys:**

The Arrow Right leads at closed memory (cursor not flashing) to the next item to the right, the key Arrow Left leads to the preceding image to the left.

The small Arrow Right on the display indicates that at the right another item follows.

**Vertical arrow keys:**

At closed memory the vertical arrow keys allow selection of the available menus after selecting the switch menu or keyboard.

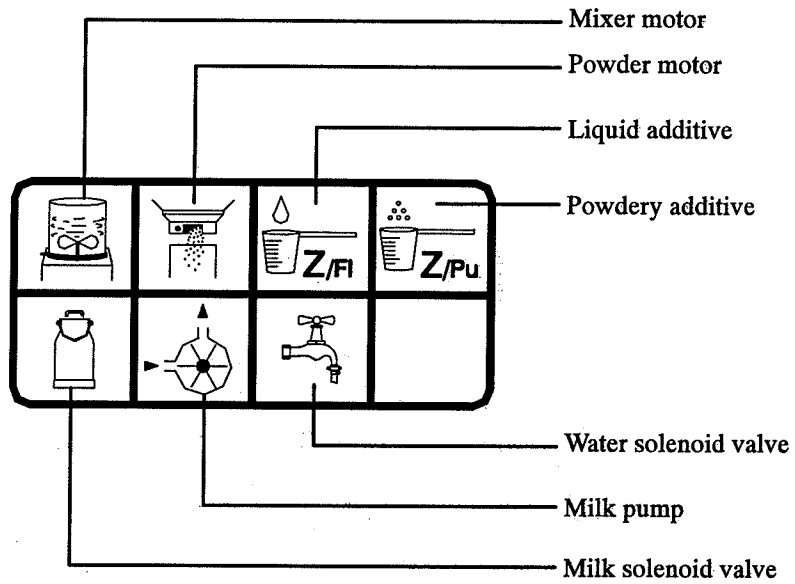
These arrow keys are active, if the arrow on the display is shown as Arrow Up ^.



The Arrow Up ^ next to the animal number means that with the arrow keys the next higher or the next lower animal number can be selected. The same goes for the selection of the animal groups A, B, C and D.

### 5.3.2.3 Hand-operation keys

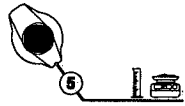
In hand-operation mode the individual functions are switched on, independently of the control.



To spare its sealing, the mixer shall not be operated without liquid.



### 5.4.1 Exercises for the switch menus



Turn the program switch to 5 = calibration. The first submenu is named „Water“.

```
calibration →
water      ^
```



Call submenu with Arrow Up and/or Arrow Down.

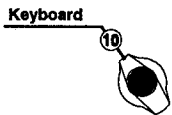
```
calibration →
water      ^
```



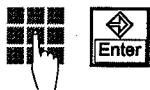
Change over to the next read-out by using Arrow Right.

```
water targ.:500ml →
measured:  ...ml
```

### 5.4.2 Exercise for the keyboard menus



Turn the program switch to 10 = keyboard.



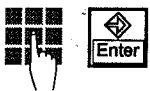
Enter 10 and confirm with ENTER.

```
10# feeding plan →
group A      ^
```



Go to first read-out, press ENTER, the cursor flashes.

```
10# A per.1 3 days
fr. 6,0 to 6,0 l →
```



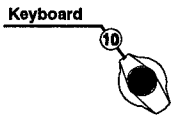
Enter a numeral representing the feeding period, confirm with ENTER.

```
10# A per.1 3 days
fr. 6,0 to 6,0 l →
```

## 5.5 Basic settings during installation

### 5.5.1 Checking date/time

When installing the automatic calf feeder first of all date and time under System data in the keyboard menu have to be checked and if necessary, changed. Time goes on, even after the system has been switched off.



Turn program switch to 10 = keyboard.



Enter 1 and confirm with ENTER.

```
1# date 21.07.98
time: 14:37:09
```



If necessary, press ENTER to adjust date and time.



Confirm again with ENTER.



After having changed the date, a daily calculation (*refer to chapter 8.6, page 106, „Daily calculation“*) will be immediately carried out at switch position „Feeding Mode“.

### 5.5.2 Carrying out new installation

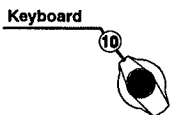


Under the keyboard menu „New installation“ the function „all new“ must unconditionally be carried out at commissioning, to ensure that the memory does not contain false data. Animal data, which should be present, will be erased and preceding work data will be overwritten.

Animal data are for instance Responder numbers, group allocation, stabling dates, feeding days, consumed feed, etc..

Work data are data with which the system works, however, not established for specific animals (e.g. drinking plans, concentration plans). The standard values for work data are based on general experience and may be altered at any moment and adjusted to individual demands (*refer to chapter 6, page 73, „Altering operational data“*).

The examples of exercises for the entering routine are erased by the selection „New installation, all new“.



Turn program switch to 10 = keyboard.



Enter 99 and confirm with ENTER.

```
99#newinstallation→
all new ? no
```

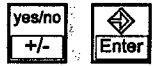


Select „yes“ and confirm with ENTER. All animal data will be erased and the work data will be overwritten by standard values.

```
99#newinstallation→
all new ? yes
```

A warning asks, whether the instructions in the user manual have been observed.

```
instruction manual
read ? no
```



Select „yes“ and confirm with ENTER.

```
instruction manual
read ? yes
```

After „New installation“ has been carried out, the message „finished“ appears in the second line of the display.

```
99#new installation
finished
```



This menu has a possibility to move to another read-out. If the automatic calf feeder is already operational, the standard values of the automatic calf feeder can (if desired) be recovered at all times. Manually changed values, e.g. of feeding plans will be erased and overwritten with standard values. Established animal numbers stay unaffected.



Move to the next read-out.

```
99#new installation
operat.data ? no
```



Select „yes“ and confirm with ENTER. All work data will be erased and overwritten with standard values.

```
99#new installation
operat.data ? yes
```

## 5.6 Setup

In Setup you may select the additional functions concerning concentrate, animal scales, heat exchanger and printing and enter the baud rate for PC and concentrate feeders. Interfaces can be tested and feeding boxes can be registered and cancelled. Moreover, in Setup you may set the draining time.

In case the Stand Alone has a mixer with automatic cleaning, you may activate this function in Setup too. In the submenu „Cleaning hose pipe“ the suction hose for calves can be rinsed with a water portion of 1/4 litre as of a certain age.

The settings in Setup influence the menu management. Not registered functions will not be indicated in the operator's management and cannot be used. If e.g. no concentrate has been activated, no concentrate menus will be displayed.

### 5.6.1 Activating the concentrate

Keyboard



Turn program switch to 10 = keyboard.



Enter 5 and confirm with ENTER. The menu „Concentrate“ appears on the display.

```
5# setup      →
concentrate ^
```



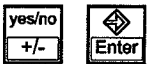
Use Arrow Right to go to the next read-out of the submenu Concentrate.

```
5# silo 1&2^ →
available no
```



Select the silo with Arrow Up or Arrow Down.

```
5# silo 1&2^ →
available no
```



Enter „yes“ and confirm with ENTER.

```
5# silo 1&2  →
available yes
```



Register silo 1 and 2 in case of connection of 1 Master with a possibly related Slave station. Register silo 3 and 4 in case of connection of 2 Masters with possibly related Slave stations.



Go to the next read-out with Arrow Right.

```
5# silo 1^   →
C1
```



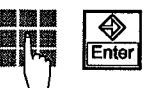
Select silo with Arrow Up or Arrow Down.

```
5# silo 1^   →
C1
```



Press ENTER to select type of concentrate.

```
5# silo 1    →
C1
```



Enter type of concentrate (1 or 2), which is allocated to the related concentrate feeder and confirm with ENTER.

```
5# silo 1    →
C1
```



Go to the next read-out with Arrow Right and press ENTER.

```
5# dosing code →
1,0
```



Enter code number and confirm with ENTER.

5# dosing code →  
1,0



In case of micro-identification „Mikro-Nedap“ you may set the identification range of the antennas by the antenna-Squelch.



Move to the next read-out with Arrow Right and set the input and reading sensitivity of the antennas. The higher the Squelch value, the lower the identification range of the antennas. You may enter values between 0 and 200.

5# squelch antenna  
concentrate 180 →



Confirm with ENTER.



In the following table you will find Squelch values and identification ranges for the different Responders. These Squelch values are based on experience and have already been factory-set.

Responder	Squelch (Standard values)	Identification range
X-Responder	0	max. 25 - 30 cm
Ear tag-Responder	0	max. 25 - 30 cm

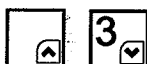


The entered value is active, until you change it manually.

## 5.6.2 Setting the baud rate for PC and concentrate feeder



You have to set the same baud rate for the PC, as well as for the concentrate feeder. Concerning the data transmission speed you may choose between the following figures: 19200, 9600, 2400 or 1200. 19200 baud is the standard value. To avoid electrical interference from the vicinity, we would advise you to reduce the transmission speed.



Select menu „Set baudrate“ with Arrow Up or Arrow Down.

5# setup →  
set baud rate ^



Go to the next read-out with Arrow Right.

5# baud rate  
19200 baud ^ yes



Select the baud rate with Arrow Up or Arrow Down, according to the transmission speed used.

5# baud rate  
19200 baud ^ yes



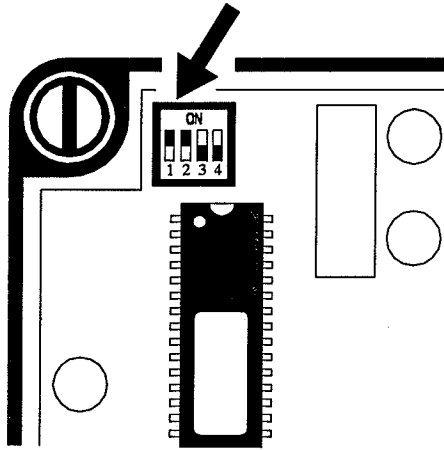
Confirm with ENTER.

5# baud rate  
19200 baud ^ yes

Standard value for baud rate: 19200 baud

Set the transmission speed at the Master station of the concentrate feeders by means of the DIP switches.

The value entered into the Stand Alone automatic calf feeder must correspond with the setting of the DIP switches at the concentrate feeder.



Master-Control (section)

Baud	Switch		ON OFF
	1	2	
19200	ON	ON	ON OFF
9600	ON	OFF	ON OFF
2400	OFF	ON	ON OFF
1200	OFF	OFF	ON OFF

Switch 1  
Switch 2

### 5.6.3 Selecting the printing function



Select menu „Printing“ with Arrow Up or Arrow Down.

```
5# setup
printing ^
```



Go to the next read-out with Arrow Right.

```
5# print list →
auto print no
```



Select „yes“, in case the verification list should be printed automatically at midnight. Confirm with ENTER.

```
5# print list →
auto print yes
```



Go to the next read-out with Arrow Right.

```
5# switch →
pr.channel 0^ no
```



Select printer channel for serial multiplexer (0-8) with Arrow Up or Arrow Down.

```
5# switch →
pr.channel 1^ yes
```



Enter „yes“ and confirm with ENTER.

```
5# switch →
pr.channel 1^ yes
```



Printer channel 0 means that no serial multiplexer is connected. An entry is only required, in case the PC program „Kalb-Manager“ and the Stand Alone are connected to a printer by means of a serial multiplexer.

### 5.6.4 Selecting the animal scales



Select menu „Animal Scales“ by means of Arrow Up and Arrow Down.

```
5# setup →
  animal scales ^
```

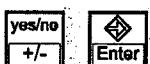


Move to the next read-out with Arrow Right.

```
5#anim.scales 1&2 →
  registered no
```



Select „Animal Scales 1&2“ in case one full scales has been connected in feeding station 1 or two half-body scales have been connected in the feeding stations 1&2. Select „Animal Scales 3&4“ in case you connect an additional full scales or two additional half-body scales.



Enter „yes“ and confirm with ENTER.

```
5#anim.scales 1&2 →
  registered yes
```

Enter „no“ in case the animal scales should be cancelled.

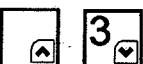


Move to the next read-out with Arrow Right.

```
5# parameter for
  anim.scales 1
```



In this menu you can set the parameters of the animal scales selected. You may choose between full scales, half-body scales and assignment to the feeding stations. In case you connect a half-body scales, you may also set the weight factor to calculate the total weight of a calf and the tare value to calibrate the scales. The processor will convert the electronic signals of the weighing cell of the animal scales into an indication of weight. This conversion factor (= tare value) will be ascertained when putting a weight of approx. 50 kg on the animal scales.



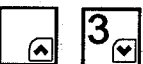
By means of Arrow Up and Arrow Down select the animal scales whose parameters have to be set.

```
5# parameter for →
  anim.scales 1^
```

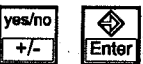


Move to the next read-out with Arrow Right.

```
5# anim.scales 1 →
  half scales^ no
```



Select the type of scales (full or half-body scales) by means of Arrow Up and Arrow Down.



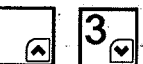
Enter „yes“, in case animal scales 1 should e.g. be a half-body scales. Confirm with ENTER.

```
5# anim.scales 1 →
  half scales^ yes
```



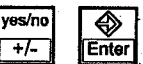
Move to the next read-out by pressing Arrow Right.

```
5#anim.scales HS1 →
  feeding box 1^ no
```



Select the feeding box where the animal scales has been located by means of Arrow Up and Arrow Down.

```
5#anim.scales HS1 →
  feeding box 2^ no
```



Enter „yes“, in case the half-body scales 1 (= HS1) has been installed in feeding box 2. Confirm with ENTER.

```
5#anim.scales HS1 →
  feeding box 2^ yes
```



The following read-out will only be displayed in case one or more half-body scales have been connected.



Move to the next read-out by means of Arrow Right.

```
5#anim.scales HS1 →
weight factor 178%
```



Press ENTER. Enter the weight factor needed to calculate the total weight of a calf. Standard value: 178 %.



Confirm with ENTER.



Move to the next read-out by means of Arrow Right. In this menu the automatic tare value will be ascertained and set.

```
5#HS1 tare value
1100 set ?      start
```



Press Start/Stop, in order to tare the half-body scales.

```
5#HS1 tare value
tare .....
```

After tare has been carried out, the display shows:

```
5# 50 kg put on
start
```



Press ENTER. Enter the weight value used for weighing. Standard value: 50 kg.



Confirm with Enter.



Put a weight on the scales (in case of 50 kg e. g. two sacks of milk powder). Press Start/Stop once again. The display shows:

```
5#HW1 tare value
scales.....
```

The tare value will automatically be set for the half-body scales connected. For example:

```
5#HW1 tare value
1100 set ?      start
```



Confirm the tare value indicated with ENTER.



In case the tare value should be checked once again, repeat the setting-routine for tare value.



Move to the next read-out by means of Arrow Right.

```
5#institute-program
no
```



Enter „yes“, in case a PC for the evaluation program has been connected. Confirm with ENTER.

```
5#institute-program
yes
```



The special evaluation program for institutes (institute program) can be connected to box 2, only in case no scales have been activated for box 2.

### 5.6.5 Carrying out interface test



If it is impossible to create the connection with the concentrate stations, the printer or the PC or with possibly connected scales, an interface test should be carried out. This interface test will be carried out by Customer Service.

- Connect the test connector with the circuit card. *Refer to connecting diagram.*



Use Arrow Up or Arrow Down to select menu „Interface test“.

```
5# setup      →
interface test^
```



Go to the next read-out with Arrow Right.

```
interface
test 1^ chann. no
```



Use Arrow Up or Arrow Down to select channel 1-5.

```
interface
test 1^ chann. no
```



Enter „yes“ and confirm with ENTER.

```
interface
test 1^ chann. yes
```

### 5.6.6 Registering and cancelling feeding stations

In this menu you may register and cancel feeding stations. Moreover, here you may enter the draining time (time between release of the electrode at the final portion and closing of the two-group valve unit) for each station. You can enter the draining time only in case the automatic calf feeder has additionally been provided with a two-group valve unit.



Use Arrow Up or Arrow Down to select „Feeding boxes“.

```
5# setup      →
boxes^
```



Go to the next read-out with Arrow Right.

```
5# box no.   1^
available ? yes
```



Select feeding box (1 or 2).

```
5# box no.   1^
available ? yes
```



Cancel feeding box: enter „no“ and confirm with ENTER.

```
5# box no.   1^
available ? no
```

Register feeding box: enter „yes“ and confirm with ENTER.

```
5# box no.   1^
available ? yes
```

The feeding boxes 1 and 2 are regularly announced (yes).

Cancellation of a feeding box makes sense, if the automatic calf feeder has been provided with a quadruple priority control. If the quadruple priority control temporarily needs only 3 feeding boxes, cancellation of the fourth feeding box prevents the computer from asking for the values of the fourth feeding box.

If the feeding portion has to be transported over a long distance, it will be useful to extend the draining time. It ensures that the mixer bowl will entirely be emptied after consumption of the last portion.



Go to the next read-out with Arrow Right.

5# draining time  
box 1^: 16 sec.



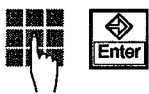
Select feeding box (1 or 2).

5# draining time  
box 1^: 16 sec.



Confirm with ENTER.

5# draining time  
box 1^: 16 sec.



Enter the feeding time in seconds and confirm with ENTER.

5# draining time  
box 1^: 20 sec.

The standard value for the feeding time is 16 seconds. The entries range from 10 to 60 seconds.

### 5.6.7 Setting distribution pause

A distribution pause can be set to regulate feed distribution. When the feed begins to be prepared, the stop valve or the two-group valve unit will close for the duration of the distribution pause entered. It is advisable to set a distribution pause only in case of not readily soluble milk powders, very high concentrations (> 200 g/l) and extreme drinking speeds (> 2 l/min).



In case of model „TAK1-SA2-27-F“ the value for the distribution pause is automatically set to 10 sec., as this model is not equipped with a circulation pump and heat transfer lasts longer. On the condition that in Setup, in the submenu heat exchanger, you entered „separate heating circuits, without circulation pump“.

To feed calves immediately after they entered the feeding station, the first feeding portion will be distributed without distribution pause. After the last feeding portion for this calf the valve closes finally after the draining time entered.



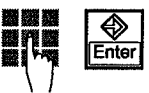
With Arrow Up or Arrow Down select menu „distribution pause“.

5# setup →  
distrib. pause ^



Go to the next read-out with Arrow Right and open the memory with ENTER.

5# distrib. pause  
0 sec.



Enter the distribution pause desired. Only enter values between 0 and 16 seconds.

5# distrib. pause  
0 sec.



Confirm with ENTER.

### 5.6.8 Mixer: Activating the cleaning system (time-controlled)



Activate the cleaning system only, if the mixer has been provided with a rinse discharge. For functioning of the cleaning system, refer to chapter „Cleaning“.



With Arrow Up or Arrow Down select menu „Mixer“.

```
5# setup      →
  mixer ^
```



Go to the next read-out with Arrow Right.

```
5# mixer with
  clean pipe ? no
```



Select „yes“, if the cleaning system has to be activated and confirm with ENTER.

```
5# mixer with
  clean pipe ? yes
```

Enter „no“, if the mixer does not have an automatic rinse facility or if the cleaning system should not be activated. Confirm with ENTER.

```
5# mixer with
  clean pipe ? no
```



Go to the next read-out with Arrow Right and open the memory with ENTER.

```
5# clean mixer 3
  times automatically
```



Enter the frequency of the automatic rinse cycles and confirm with ENTER. The entries range from 0 to 9.

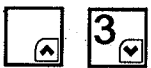
```
5# clean mixer 3
  times automatically
```

### 5.6.9 Activating the heat exchanger

In this menu you have to select the type of heat exchanger. There are heat exchangers with two separate heating circuits for milk and water and heat exchangers with one heating circuit for water and milk. In case you selected a heat exchanger with two separate heating circuits for milk and water you have to enter in Setup, whether the automatic calf feeder is equipped with a circulation pump or not.



In case of model „TAK1-SA2-27-F“ you have to activate the heat exchanger with separate heating circuits for milk and water without circulation pump, as this model is not equipped with a circulation pump.



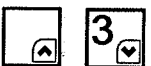
Select menu „Heat exchanger“ with Arrow up or Arrow Down.

```
5# setup      →
  heat exchanger ^
```



Go to the next read-out with Arrow Right.

```
5# no ^      →
  heat exchang.active
```



With Arrow Up or Arrow Down select heat exchanger with single heating circuit or with separate heating circuits.

```
5# single ^
  heat circuit ? yes
```

```
5# sep.heat circ.^
  without pump ? no
```

```
5# sep.heat circ.^
  with pump ? no
```



Select „yes“, if the automatic calf feeder e.g. is equipped with a heat exchanger with separate heating circuits and a circulation pump. Confirm with ENTER.

### 5.6.10 Selecting the retractable teat

In case the automatic calf feeder should be equipped with a retractable teat, you have to activate this function in Setup.



This menu will not be displayed in case of connection of a micro-identification.



Select the menu „Retractable teat“ with Arrow Up or Arrow Down.

```
5# Setup      →
retractable teat ^
```



Move to the next read-out with Arrow Right.

```
5# retract. teat →
available ? no
```



Enter „yes“ in case the automatic calf feeder should be equipped with a retractable teat. Confirm with ENTER.

```
5# retract. teat →
available ? yes
```



Move to the next read-out with Arrow Right. Press ENTER.

```
5#retraction time →
teat : 50 ms
```



Enter the retraction time of the teat. Confirm with ENTER.

You may enter values between 50 and 500 ms. Standard values: 50 ms

### 5.6.11 Hose pipe cleaning

In this menu you may activate the hose pipe cleaning for calves of a certain group and from a certain age (weeks after first stabling).

Functioning: As soon as a calf has consumed the last portion of its allotment, 1/4 litre of water will be dosed into the mixer after the draining time. Calves usually stay a little bit longer in the feeding station sucking on the teat, effecting in this way the cleaning of the suction hose. As this only applies to older calves, this setting will be activated 2 weeks after stabling, at the earliest.



With Arrow Up or Arrow Down select menu „Hose Pipe Cleaning“.

```
5# setup      →
clean hose pipe ^
```



Go to the next read-out with Arrow Right.

```
5#clean hose pipe →
group A^ no
```



Select group.

```
5#clean hose pipe →
group B^ no
```