

Operating manual

MC99 P560/1100

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M4181GB

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1 General information for operating the program

1.1 The programs for the MC 99 feeding computer

The Big Dutchman MC99 feeding computer can be used in pig management for controlling the Callmatic feeding-on-demand system for dry feed and alternatively for liquid feed.

The feeding computer MC 99 Callmatic (Code No. 91-02-3715) with the program 560-99-GB can control the following:

1800	sows
24	feeding stations
2	feed mixes, liquid as well as dry
1	mineral dosing device
1	colour coding
1	selection

In addition, there is a PLC in the computer which can partly comply with system-dependent software wishes beyond the existing program.

The feeding computer MC 99 Callmatic Economy (Code No. 91-02-3960) with the program 1100-99-GB can control the following:

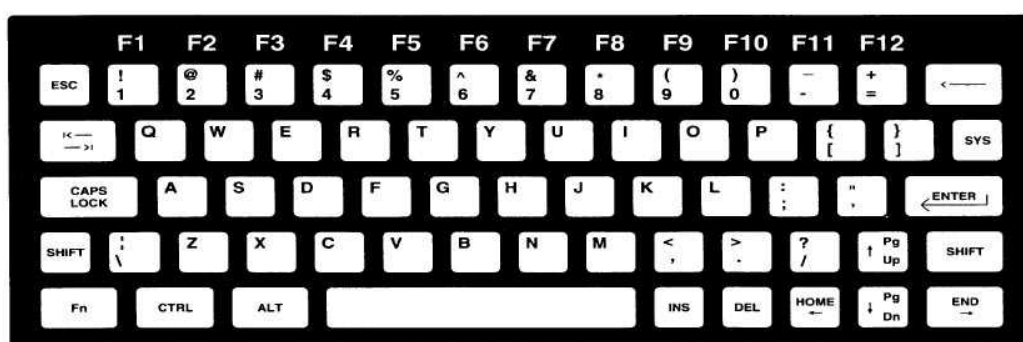
600	sows
16	feeding stations
2	feed mixes, liquid as well as dry
1	mineral dosing device
1	colour coding
1	selection

Both computers can communicate with an external mixing computer which is necessary for metering liquid feed in the feeding-on-demand system.

1.2 The keyswitch

The keyswitch, located between keyboard and screen, has two positions when using the program 560. One for the menus and the other for viewing program/system operation. In the menu position, the main menu and all of its submenus may be viewed for input and control of information. In the key position for program operation each process can be monitored, i.e. the feeding of the sows. When working with a PC, the keyswitch function will be utilised by entering the command "DI" in the main menu.

1.3 The keyboard of the MC 99 NT feeding computer



Understanding the keys

The MC99 NT feeding computer allows you to enter and change all information and configurations in the program from its integrated keyboard. If the MC99 NT is connected to a PC, you may also use the PC keyboard for input of data. The following table lists the keys of the MC99 NT and their counterparts on a PC keyboard.

MC99NT keyboard	PC keyboard	Meaning	Purpose for the program
	Esc	ESC-key	leads back to the main menu
	⇅	capital letters	upper case lock for capital letters
	⇅	case shift	activates the second function of double function keys (e.g. <PgUp> and <PgDn>)
	not existing		activates the function keys F1 - F12

MC99NT keyboard	PC keyboard	Meaning	Purpose for the program
	Ctrl	control switch	activate hidden commands
		space bar	sets spaces switches commands on/off changes configurations to yes/no
	Del	delete key	deletes characters to the right (forward)
	←	delete key	deletes characters to the left (backwards)
	no corresponding key, instead enter DI		takes over the same function as the keyswitch; changes between menus and program operation
	↵	enter - key	confirms or executes an entry; must always be pressed before entering text
		cursor control key	moves the cursor upwards
		cursor control key	moves the cursor downwards
	page	cursor control key	turns to the previous menu page
	page	cursor control key	turns to the next menu page
	←	cursor control key	moves cursor left
		cursor control key	moves cursor right

1.4 The function keys

Die Funktionstasten F1-F12 werden beim MC99 NT mit Hilfe der Fn-Taste betätigt.



Example:

F1  <Fn> <1> (press keys simultaneously)

Function keys		Purpose
F1	 	field help (explains column or position)

1.5 Program navigation

The program P 6XX-GB for the computer controlled feeding system consists of several menus, displayed in the form of data screens and input listings. All menus are selected from a main menu. Several direct commands, such as, "Start Mixing" or "Start Feeding" may also be executed from the main menu.

Menus and commands are selected by marking (highlighting) the name of a menu or command with the cursor. Then press <ENTER> to confirm your selection. When entering text (letters, words), always use CAPITAL LETTERS. Make sure you have pressed the <CAPS LOCK> key!.

Moreover, all text entries (e.g. names of components) must always be indicated to the computer by pressing the <ENTER> key before input! A command will be executed and an entry (value or text) will be acknowledged, as soon as it has been confirmed with <ENTER> (= return key).

Some commands, as for example CA = "calculation of the mix", are executed immediately - without confirmation, when the corresponding abbreviation code has been entered. Other commands, as for example F3 = "weight scales", or F1 (field help window) have to be deactivated by pressing <ESC>.

1.5.1 Selecting with the cursor (marking)

In order to select a menu, an input position or command, it must be marked (highlighted) by moving the cursor onto the given field. Some fields cannot be marked, because the computer displays information here automatically.

The cursor is moved by means of:

- a) the cursor control keys
- b) by entering the corresponding abbreviation code



Example:

In the main menu the cursor is to mark the field **PROCESS VARIABLES (PV)**

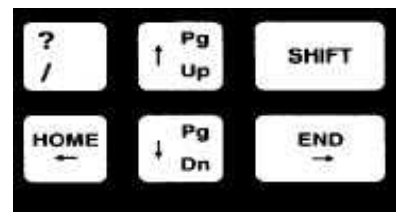
1.  PV (marks the field)
2.  <ENTER> (to confirm)

1.5.2 Cursor control keys

The cursor control keys (in the lower right hand corner of the keyboard) are used to move the cursor up, down, left or right. Two of the keys have a second function- i.e. to change pages within a menu (turn from one list or data screen to another.)

In order to activate the "change page" function, press the respective cursor control key and the <SHIFT> key simultaneously.

- <SHIFT> <PgDn> means: "turn to next page " and
- <SHIFT> <PgUp> means: "turn to previous page ".

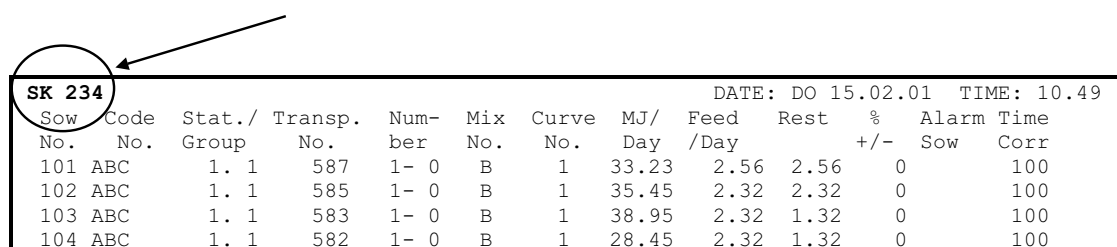


1.5.3 Opening menus by using abbreviation codes

A menu may always be opened from the main menu by marking the respective field and confirming the selection with <ENTER>. The <ESC> key will lead you to the main menu from any other menu.

You may also jump directly to a menu and even to a certain page of that menu from any position of the program. Just enter the corresponding "abbreviation code" followed by the page or sow number and then confirm. Hidden menus such as "TE TEST" must also be opened in this way.

The input field, located in the upper left-hand corner of the screen, shows what you are typing before you confirm your entry.



Sow No.	Code	Stat./Group	Transp. No.	Num-ber	Mix No.	Curve No.	MJ/Day	Feed/Day	Rest	%	Alarm	Time
101	ABC	1. 1	587	1- 0	B	1	33.23	2.56	2.56	0	100	
102	ABC	1. 1	585	1- 0	B	1	35.45	2.32	2.32	0	100	
103	ABC	1. 1	583	1- 0	B	1	38.95	2.32	1.32	0	100	
104	ABC	1. 1	582	1- 0	B	1	28.45	2.32	1.32	0	100	



Example:

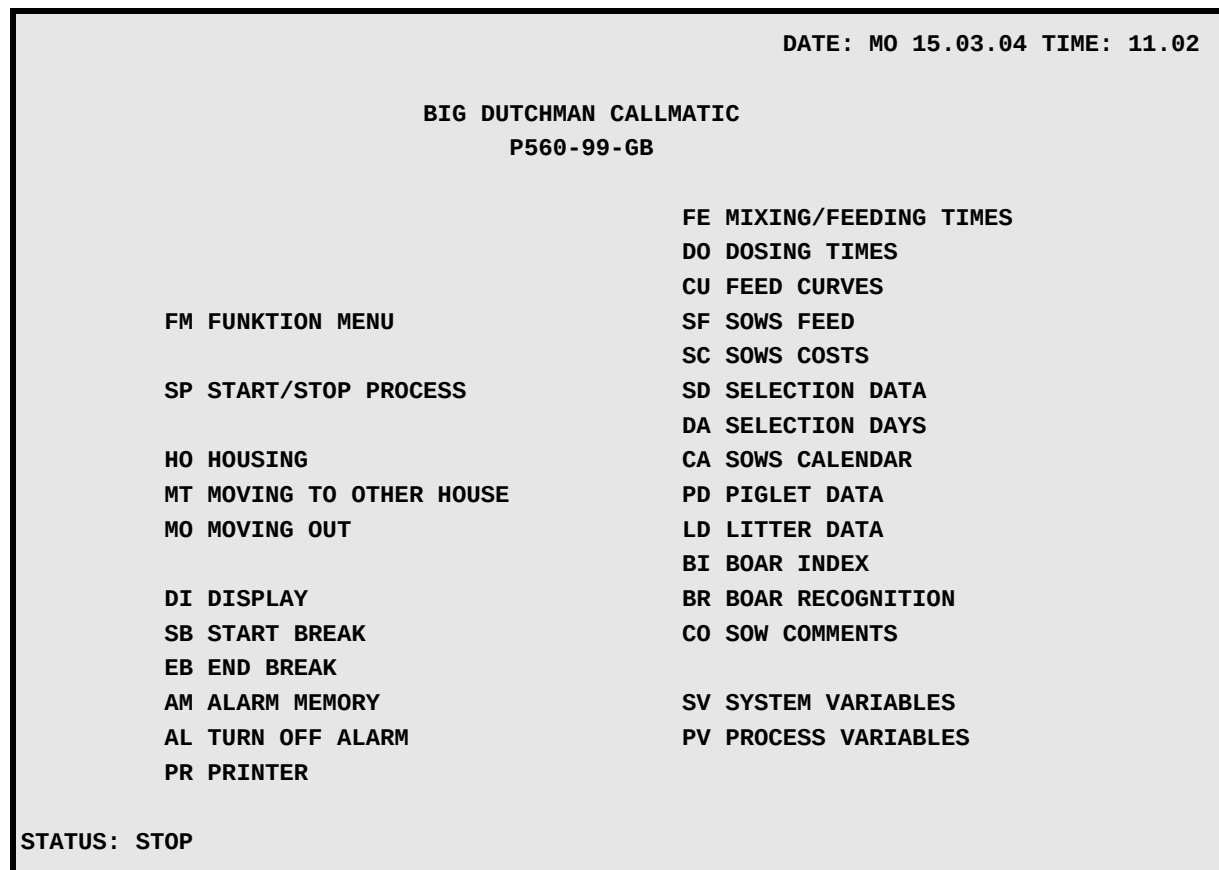
Change from menu **SOWS FEED (SF)** to menu **SOW COSTS (SC)** sow no. 234.

1.  SC234 (SC 234 appears in the input field)
2.  <Enter> (menu **SOWS COSTS (SC)** is now opened)

2 The main menu

2.1 Description

When you turn on the feeding computer, the main menu of the program is displayed from which the following submenus can be selected and opened.



To address the main menu:  <ESC>

The main menu can be addressed at all times and from all menu pages by using the <ESC> key.

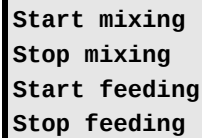
2.2 Program-Configuration

From the main menu, you can open different hidden submenus by using the commands RC, RU, RI and RV. With these submenus, you can configure the feeding equipment in the program.

The necessary inputs have to be done by your electrician. You can find further information in the service manual.

2.3 START/STOP PROCESS (SP)

Upon activating the SP-command, the following display appears:

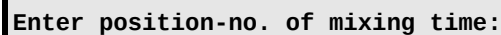


```
Start mixing
Stop mixing
Start feeding
Stop feeding
```

Select one of these start/stop functions with the cursor and confirm by the <ENTER> key.

2.3.1 Start mixing

The following will be shown on the display



```
Enter position-no. of mixing time:
```

Now enter the pos. of the mixing time of the menu **MIXING-/FEEDING TIMES (FE)** which is to be started.

When mixing is started, feeding will be interrupted, i.e. the doors of the feeding stations will remain closed until mixing is finished. The sows which are still in the stations do not receive feed during this time.

2.3.2 Stop mixing

A possibly started mixing will be aborted in the feeding-on- demand system and in the external computer. Prior to a new start, it is necessary to control the feed up to then mixed in the external computer, because the content of the mixer is not recorded after an abortion.

Feeding, which was possibly interrupted due to mixing, will start again.

2.3.3 Start Feeding

The following is displayed:

Enter position-no. of feeding time:

Now enter the pos. of the feeding time of the menu **MIXING AND FEEDING TIMES** which is to be started.

If feeding or mixing was already started upon a manual start, the following message would appear:

Mixing has already been started! No manual start possible.

alternatively:

Feeding has already been started! No manual start possible.



If mixing or feeding is aborted with the STOP-command, this process cannot be continued correctly later on. A process can only be restarted, but never continued. All feed quantities must be controlled upon a new start.

2.4 Housing (HO)

Activating the **HOUSING (HO)** command prompts the following screen:

Housing	:	Sow No.	1
		Transponder No.	1
		Code No. [ENTER]	KU
		Station No.	1
		Group-No.	1
		Mix No.	1
		Curve No.	1
		Insemination Date	26.02.04
		Boar No.	4711
		Feeding on demand	Yes
Take over inputs!		ENTER	

Sow No.	Enter a clear number for each sow here.
Transponder No.	Enter a clear transponder no. for the sow here.
Code No.	Enter any 6-character text or 6-digit number you want.
Station No.	Assign the sow to a station here.
Group No.	Assign the sow to a group here.
Mix No.	Fix which Mix No is used for feeding. The Mix No. has to be defined before in the PROCESS VARIABLES (PV) menu.
Curve No.	Select a feed curve here, which has been fixed already in the FEED CURVES (CU) menu.
Insemination Date	Enter the last insemination date here.
Boar No.	Enter the boar number to the a.m. insemination date here. The boar has to be existing in the BOAR INDEX (BI) menu.
Feeding-on-demand	Activate or disable feeding-on-demand here by Yes or No.

After editing the sow with the sow no. it is possible to modify Transponder No., Code No., Insemination Date, Boar No. and Feeding-on-demand in the **SOWS CALENDER (CA)** menu. For modifying the values of Mix No. and Curve No. see the **SOWS FEED (SF)** menu.

2.5 MOVING TO OTHER HOUSE (MT)

For moving a sow to another house, call in the **MOVE TO OTHER HOUSE (MT)** menu. The following screen is prompted:

Change house:	Sow No.	1
	Transponder No.	1
	Code No. [ENTER]	KU
	Station No.	1
	Group-No.	1
	Mix No.	1
	Curve No.	1
	Insemination Date	26.02.04
	Boar No.	4711
	Feeding on demand	Yes
Take over inputs!		ENTER

Enter the Sow No. of the sow to be moved and confirm by Enter. Now assign the sow to another station or group. To take over the changes, move the cursor to Change inputs! and confirm by Enter.

2.6 MOVING OUT (MO)

To delete a sow from the program, call in the **MOVING OUT (MO)** menu. The following screen is prompted:

Moving out:	Sow No.	1
	Transponder No.	1
	Code No. [ENTER]	KU
	Station No.	1
	Group-No.	1
	Mix No.	1
	Curve No.	1
	Insemination Date	26.02.04
	Boar No.	4711
	Feeding on demand	Yes
Take over inputs!		ENTER

Enter the number of the sow to be deleted. Then move the cursor to Delete inputs! and confirm by Enter.

	Deleting a sow is also possible in the SOWS CALENDER (CA) menu !
---	---

2.7 Display (DI)

When using the program 560 select between two different program versions: the menu version and the program version. The menu version depicts the main menu with the different submenus. The program version allows observing the respective procedure, i.e. feeding of the sows. Entering the command **DISPLAY (DI)** prompts a change from the menu version to the program version.

2.8 Start break (SB)

The command SB interrupts the program.

2.9 End of break (EB)

The command EB takes up the program at the point where it was interrupted by SB.

2.10 Turn off Alarm (AL)

With this command the alarm signal (sound) is turned off and the alarm message is removed from the screen. In order to cancel an alarm, you must first eliminate the problem causing the alarm! The alarm may be turned off from any menu by pressing F AL. If 2 applications are being used, the alarm must be cancelled for each application separately.

What to do when alarm occurs during feeding ?

1. Read the alarm message.
2. Remove cause.
3. Stir up feed via manual operation:
 - turn switch at motor control unit to manual operation
 - turn on agitator (for at least 30 sec.)
 - turn switch back to automatic operation.
4. Turn off alarm with  **AL** <ENTER>

2.11 Alarm Memory (AM)

Upon entering the command **ALARM MEMORY (AM)** a list of the 40 last occurred alarm messages will be displayed. With each alarm message (alarm text), the code number and the date and time when the alarm occurred as well as the duration of the alarm will be indicated. This list can also be printed out via the **PRINTER (PR)** menu.

MC255-4 DATE: MO 15.03.2004 HOUR: 07:36			

DATE	TIME	NO ALARM TEXT	DURATION

18.03.04	06.28	6 EMERGENCY STOP IS PRESSED	1:07:25
10.03.04	06.06	10 AIR PRESSURE FAILURE	0:20:33
09.03.04	15.26	11 POWER FAILURE	0:20:29
07.03.04	14.29	11 POWER FAILURE	0:56:47
17.03.04	12.47	131 SOW NOT ENTERED	0:41:29
11.03.04	11.21	133 SOW WITHOUT FEED	0:25:16

Alarm Memory (AM)

2.12 Menu: PRINTER (PR)

DATE: MI 15.03.2004 HOUR: 14:39	
INSTRUCTIONS:	FE MIXING/FEEDING TIMES DO DOSING TIMES CU FEED CURVES SF SOWS FEED SC SOWS COSTS SD SELECTION DATA DA SELEKTION DAYS CA SOWS CALENDAR PD PIGLET DATA LD LITTER DATA BI BOAR INDEX BR BOAR RECOGNITION CO SOW COMMENT SV SYSTEM VARIABLES PV PROCESS VARIABLES BU EXPLOITATION SURVEY SA SOWS INDEX CE CHECK BOAR INDEX MO ALARM SOWS AM ALARM INDEX
STATUS: STOP	

3 MIXING/FEEDING TIMES (FE)

In this menu, all times for mixing and feeding are fixed. In addition to the mixing time, the mix no. and the amount to be mixed must be programmed, except for pos. 10. The amount of pos. 10 will be calculated automatically. In addition to the feeding period, the share of the daily ration and the mix no. must be entered.

DATE: MO 15.03.2003 TIME: 16.49											
	Mix			Amount		Feeding		Daily ration		Mix	
Type	Time	% A	% B	A Kg	B Kg	from	to	%	%	No. A	No. B
1 EXT	07.30	25.0	25.0	12	174	08.00	16.00	100	100		
2 EXT	00.00	0.0	0.0	0	0	00.00	00.00	0	0		
3 EXT	08.00	25.0	0.0	12	0	00.00	00.00	0	0		
4 EXT	08.30	0.0	25.0	0	174	00.00	00.00	0	0		
5 EXT	00.00	0.0	0.0	0	0	00.00	00.00	0	0		
6 EXT	12.00	25.0	0.0	12	0	00.00	00.00	0	0		
7 EXT	12.30	0.0	25.0	0	174	00.00	00.00	0	0		
8 EXT	00.00	0.0	0.0	0	0	00.00	00.00	0	0		
9 EXT	15.00	25.0	0.0	12	0	00.00	00.00	0	0		
10 EXT	15.30	0.0	25.0	12	174	00.00	00.00	0	0		
		-----	-----	-----							
		100.0	100.0	48	696						
STATUS: STOP											

MIXING/FEEDING TIMES (FE)

3.1 Input window for computer time and date — UH

Display and input window for the computer clock – i.e. "real time" for the process clock and date.

process clock	10.50
summer time, advance	(+)
winter time	(-)
main clock (RTC)	11.39
Date	06.02.2004

To open window:  U H

To close window:  < ESC >

Process Clock	Displays the starting time of the process, which is presently running. Example: the feeding process of feeding time no. 2 began at 10.50 and is still in operation. If no process is running, the process clock displays the same time as the computer clock.
Summer time (+)	Sets the real time of the computer clock ahead 1 hour.
Winter time (-)	Sets the real time of the computer clock back 1 hour.
Computer clock	Display and input for the real time (RTC). You must always enter 4 digits – e.g.: 8.30 must be entered as 08.30n
Date	To enter the date, you must also enter the points in-between the day, month and year.

3.2 Mixing Type

This program cannot carry out mixing. This is only possible with an external mixer, i.e. in the tank of an external liquid feeding system! Thus there must be a liquid feeding system with a MC99 feeding computer with which the feeding-on-demand system can communicate via a RS485 line and order a feed mix.

3.3 Mixing Time

Special feature

Mix time pos. 1 = storage tank is evacuated, cleaned and the mixing amount is mixed

Mix time pos 2-10 = mixing amount is mixed

Last mixing time:

Daily feed rest amount > mixing amount = the mixing amount is mixed

Daily feed rest amount > mixing amount = the daily feed rest amount is mixed

There must be at least one time at pos.1 and at pos. 10. The times in between can be entered as you like.

3.3.1 Mixing process first feed mix

1. When the mixing time pos. 1 is reached, the agitator (pos. 3 in menu RU) in the storage tank starts.
2. After expiration of this agitating time (see menu **SYSTEM VARIABLES (SV)**), the valve (pos. 9 in menu RU) to the mixing tank is opened.
3. The feed pump (pos. 1 in menu RU) is started and the storage tank is evacuated until the sensor in the storage tank (pos. 3 in menu RI) gets passive.
4. Afterwards storage tank cleaning (pos. 11 in menu RU) starts, i.e. the agitator (pos. 3 in menu RU) is switched off, but the feed pump (pos. 1 in menu RU) remains switched on. The water amount for tank cleaning (see menu **SYSTEM VARIABLES (SV)**) is controlled on the scale of the mixing computer. The scale of the mixing computer is controlled every 2 seconds by the feeding-on-demand system if the amount is already sufficient, i.e. due to this delay, there may be a little bit more water in the tank than the programmed amount.
5. The data of this mix are then transmitted to the MC99 liquid feeding computer and here the mix is prepared including the rest quantity existing in the mixing tank. At the same time, the tank content in menu **PROCESS VARIABLES (PV)** is reset to zero. The amount to be mixed is indicated in column amount in kg.
6. As soon as the mix is ready, a message is given to the feeding-on-demand computer which demands the prepared mix via output (pos. 13 in menu RU), i.e. the mix is then pumped into the storage tank of the feeding-on-demand system. The scale of the liquid feeding computer is controlled every 2 seconds. The feed transfer is interrupted when the programmed amount has been pumped into the storage tank or when the scale shows a weight less than 25 kg.



The mixing time entered at pos. 1 must always be before the feeding time and there must be enough time for mixing. If a feeding time is reached during external mixing, it will not be deleted but delayed.

3.3.2 Mixing process second feed mix

After the first feed mix has been mixed for tank 1, the same process starts with the second feed mix, if existing. The only difference is that other outputs are switched (see menu RU).

Note:

The above-mentioned process only starts if

- a mixing time is entered at pos. 1
- a mix no. for tank A and B (if existing) is entered
- a feed amount for tank A and B (if existing) is calculated

At all the other mixing times, except for pos. 10, external mixing is started if

- the mixing time is reached
- a feed amount is indicated for this mixing time
- -the tank content is smaller than the minimum tank content (see menu PV)
- -the daily feed rest amount (see menu PV) is larger than zero

The amount which has been programmed for this time is then mixed. If inputs have been made at one mixing time for both tanks, mixing will only start if both sensors are passive, i.e. if only one sensor gets passive, feeding of this mix is interrupted and the program is waiting for the signal of the second sensor before the mixing process is started. If there are only inputs for one tank at a mixing time, mixing will start immediately on the above-mentioned conditions.

Special feature

The last mixing time is always pos. 10. The mixing amount shown here is the daily feed rest amount and it is displayed automatically. This daily feed rest amount is also indicated in menu **PROCESS VARIABLES (PV)**. This amount is mixed if it is within a bandwidth, i.e. larger than the minimum amount and smaller than the maximum amount (see menu **PROCESS VARIABLES (PV)**). If the amount is not within this bandwidth, either the min. or the max. amount is mixed.

Note:

During mixing, the doors of the feeding stations are closed, just as they are with the break function **START BREAK (SB)**.

3.4 Mixing amount in kg

The amount to be mixed is programmed together with the mixing time, except for the last mixing time, i.e. the time at pos. 10. Here the feed rest amount is calculated and this amount will be mixed. For this, a min. amount is required which must be programmed in menu **PROCESS VARIABLES (PV)**. There is also a max. feed amount to prevent the storage tank from getting too full.

With every other mixing time the amount is mixed which has been entered for these mixing times. However, mixing will only start, if the sensor (pos. 3 /4 RI) gets passive, i.e. on the following conditions:

- the mixing time must be reached
- the feed amount must have been entered
- the sensor in the storage tank must be passive and
- the daily feed rest amount must be larger than zero

Only then mixing will start.

At the last mixing time (pos. 10), the mixing amount is the daily feed rest amount. It is indicated automatically. This daily feed rest amount is also displayed in menu **PROCESS VARIABLES (PV)**. This amount will be mixed if it is within a bandwidth, i.e. larger than the min. amount and smaller than the max. amount (see menu **PROCESS VARIABLES (PV)**). If it is not within this bandwidth, either the min. or the max. amount will be mixed.

3.5 Feeding

You may enter here within which points of time feeding shall be possible. You may enter 10 different feeding periods at most, but for more calm in the pen it is better to program a very long period.

Feeding may be started manually or via a time. On a manual start, the computer will also ask for the pos. no. of the feeding time, so there is no difference between the manual and the automatic start.

After the start of feeding, agitator A will start and then agitator B with a short delay. After expiration of the agitating time, the front valves and end-valves are opened, the feed pumps start recirculating the feed in the circuits. After expiration of the recirculation time, the doors are opened and feeding starts.

After the start of feeding, the agitators are switched on and off in intervals (see menu **SYSTEM VARIABLES (SV)**).

To start an agitator, the sensor input pos. 3 and 4 (sensor min. storage tank A/B) must be active. If this is not the case, there are two different messages:

Upon the start of feeding:

ALARM: 12, STORAGE TANK A/B EMPTY

An alarm message follows and feeding is not started.

During feeding:

STATUS: STORAGE TANK A/B EMPTY

If input pos. 3 or 4 gets passive, all entrance doors of the feeding stations are closed, feed pumps and agitators are switched off and the front valves and end-valves in the feed circuits are closed. This is the same situation as with the break function. There will be no alarm message!

If the sensor gets active again, agitator and feed pump will be switched on one after the other, the front valves and end-valves and the entrance doors to the feeding stations will be opened in case the feeding period has not ended, yet.

An already started feeding time will be stopped (STATUS: STOP) if

- the feeding time has gone by
- the daily feed rest amount is zero
- feeding was stopped manually

An already started feeding time will be interrupted if

- the sensor in the storage tank gets passive (see page 5),
- the break function has been released (**START BREAK (SB)**)

During the break function, the agitators will continue running in intervals. If the feeding period ends during the interruption, the break function will end, too.

If the feeding period has ended, it can be restarted on the same day, but the daily feed ration will be added to the feed rest amounts in menu **SOWS FEED (SF)**. This is why feeding should - if required - only be interrupted, but not aborted within one day.

The calculation of the feed amount for the next feeding time is always calculated before feeding, i.e. at the start of the feeding time.

At the same time, the rest amounts from the menu **SOWS FEED (SF)** are copied to menu **SOWS COSTS (SC)** into column 1 of rest-kg/day. The former data of column 1 are copied to column 2, etc.

If feeding continues over midnight, those sows which are to be selected the next day, will already be selected when entering the station before midnight.

After the last feeding time, all sows which have not eaten their daily ration, will be defined as alarm sows. This index will be deleted, for example, if a sow eats its total daily ration the next day.

After the last feeding time, all alarm sows will be printed out.

Outside the feeding times, all doors are locked, i.e. output A1 will get passive at all stations.

3.6 % partition of daily ration

If several feeding times are entered, it is possible to partition the daily ration in different percentages. The total daily amount must be 100%. If this is not the case, error code

ALARM: 31, % - ERROR FEEDING TIME

will appear. But since the animals are always hungry, it is better to give the total daily ration to the animals already at the first feeding time, since they will not come back into the station again to get another feed ration.

If no percentage is entered, although there are sows with this mix no., error code

ALARM: 31, % - ERROR FEEDING TIME

will be displayed, too.

3.7 Mix No.

You can only choose between feed (mix no.) A or B. Enter in menu **PROCESS VARIABLES (PV)** which mix no. it is. This mix no. will be sent to the mixing computer and prepared there. The composition of the mix is laid down in the mixing computer, but it must not be used for the mixing computer, i.e. it is only used for the feeding-on-demand system.

If you have not entered a mix no. for a feeding time, error code

ALARM: 32, NO MIX NO. FEEDING TIME

will appear.

4 DOSING TIMES (DO)

DATE: MO 15.03.04 TIME: 11.17						
No.	Amount/Unit		Eating time/Unit	Dosing d. Mineral	Kind of	Connec-
	A	B	in Seconds	in 1/10 Seconds	Feed.stat.	ted
1	400	400	30	0	feed	Yes
2	400	400	30	0	feed	Yes
3	0	0	0	0	boar	Yes
4	0	0	0	0	-----	No
5	0	0	0	0	-----	No
6	0	0	0	0	-----	No
7	0	0	0	0	-----	No
8	0	0	0	0	-----	No
9	0	0	0	0	-----	No
10	0	0	0	0	-----	No
11	0	0	0	0	-----	No
12	0	0	0	0	-----	No
13	0	0	0	0	-----	No
14	0	0	0	0	-----	No
15	0	0	0	0	-----	No
16	0	0	0	0	-----	No
17	0	0	0	0	-----	No
18	0	0	0	0	-----	No
19	0	0	0	0	-----	No
20	0	0	0	0	-----	No
STATUS: ER WARTET						

DOSING TIMES (DO)

4.1 Amount / unit mix A/B

Since there is no weight control during metering by means of an electric scale, the weight per dosing unit per feeding station must be entered here. For this, the feed amount of a dosing unit must be collected and weighed. This weight is to be entered in grams. After every feed impulse, the computer subtracts this amount from the daily ration. During feeding, dosing can be controlled in menu **DISPLAY (DI)**.

If a different feed is metered at various stations, a different input may be required for every station.

4.2 Eating time / unit

Within this time, an animal should be able to eat a feed unit, for example 120 g. After expiration of this time, the next feed unit will be metered. If the programmed time is too short, there will be an unnecessary accumulation of feed in the trough, if this time is too long, waiting times will be the result prolonging the total duration of feeding. Independent of this eating time, you can also enter an individual time per animal (see menu **SOWS FEED (SF)**). This input is in seconds and can be adjusted per station.

4.3 Dosing time for minerals

It is also possible to add minerals to the feed if the feeding station is equipped correspondingly. Here you may enter the operation time of a mineral dosing device in 1/10 seconds. It has a range of 0 to 60 seconds and can be entered per station. In menu **SOWS FEED (SF)** (see below), you can program if minerals are to be fed. Immediately after every impulse for the feed auger, another impulse will be given to the mineral auger.

MB

Date: MO 15.03.2004 Time: 11.58											
Sow No.	Code No.	Stat./ Group	Transp. No.	Num-ber	Mix No.	Curve No.	MJ/ Day	Feed /Day	Rest	% +/-	Alarm Time
404	ABC	1. 1	582	1- 0	MB	1	20.00	7.09	0.00	0	* 30
102	DEF	1. 1	587	1- 0	A	1	17.00	4.65	0.00	0	30
103	HIJ	1. 1	585	1- 0	B	1	17.00	6.02	6.02	0	* 30
104	HIJ	1. 1	583	1- 0	A	1	17.00	4.65	0.00	0	30

SOWS FEED (SF)

4.4 Kind of feeding station

You can enter here which kind of feeding station is connected. After having pressed [ENTER] , a window is opened offering the following possibilities:

-----	Nothing connected	The antenna is not scanned and the outputs are not activated.
Feed	Feeding station	The antenna is scanned and the outputs are activated incl. the valve card. A selection is possible, if no station has been defined as selection station.
Boar	Hogging detection	The antenna is scanned and neither the outputs nor the valve card are activated.
Select	Selecting station	The antenna is scanned and the outputs are activated as well as the feeding station, but not the valve card. Selection via the feeding station is turned off.

4.5 Connected

You may choose here which feeding stations are connected. You can only choose as many stations as you have entered in menu **SYSTEM VARIABLES (SV)** with connected stations.

5 FEED CURVES (FC)

There are altogether 5 feed curves. These are all structured alike and may be used for sows with as well as without piglets.

A feed curve is selected by entering CU X [ENTER] (X = curve no.) or by entering CU [ENTER] with which curve no. 1 will always be displayed. The desired curve can then be selected using the PgUp- or PgDw-key.

Date: TU 16.03.2003 Time: 06.55				
CURVE NO. 1	Energy demand		MJ/anim/day	Change
Curve points	Mating days	Sow	Piglets	Mix
1	1	28.00	0.00	A
2	65	28.00	0.00	
3	85	35.00	0.00	
4	100	35.00	0.00	
5	115	39.00	0.00	
6	0	0.00	0.00	
7	0	0.00	0.00	
8	0	0.00	0.00	
9	0	0.00	0.00	
10	0	0.00	0.00	
11	0	0.00	0.00	
12	0	0.00	0.00	
13	0	0.00	0.00	
14	0	0.00	0.00	
15	0	0.00	0.00	
16	0	0.00	0.00	
17	0	0.00	0.00	
18	0	0.00	0.00	
19	0	0.00	0.00	
20	0	0.00	0.00	

FEED CURVES (CU)

Feed curves are drawn up so that the feed rations can be adapted automatically to the different requirements of the individual production cycles. To draw up these curves is part of the basic adjustments carried out on the initial operation of the system or - if required - when new animals are housed. During production, the computer controls the change of feed amounts by means of these programmed feed curves.

The user can determine, which feed mix is to be fed, within which period (days) the rations are to be increased (changed) by how many MJ and at which point of time a change of feed possibly is to take place. For sows with piglets, the energy supply per piglet can be indicated in addition.

The feed curves no. 1 to 5 are conceived for the management of sows in different phases of production. The rations must therefore be adapted to the respective need of nutrients of pregnant (resp. barren) and lactating sows.

5.1 Curve points

All feed curves for sow management have 20 curve points which can be fixed as you like. On the entered feeding day, the energy amount is fed which is indicated in the next column. On days between these feeding days, the energy amount is fed which the computer calculates from the programmed values.

5.2 Energy demand MJ/animal/day per sow

Enter the energy amount (in MJ) which the daily ration per sow shall contain at a given day (index point) of the curve. This value is then used by the computer in order to calculate the corresponding feed amount for the sows.

Date: TU 16.03.2004 Time: 07.01				
CURVE NO. 1	Energy demand		MJ/anim/day	Change
Curve points	Mating days	Sow	Piglets	Mix
1	1	28.00	0.00	A
2	65	28.00	0.00	
3	85	35.00	0.00	
4	100	35.00	0.00	
5	115	39.00	0.00	

FEED CURVES (CU)

The daily energy demand per sow (e.g. on the days between curve points 3 and 4) is calculated as follows:

$$\text{Energy demand/day} = \frac{\text{energy value 2} - \text{energy value 1}}{\text{occup. day curve point 3} - \text{occup. day curve point 2}}$$

Example:

occup. day curve point 2 = 65 with 28 MJ/animal/day

occup. day curve point 3 = 85 with 35 MJ/animal/day

$$\text{Energy demand/day} = \frac{35 - 28}{85 - 65} = 0,35 \text{ MJ/day}$$

Hence follows that the sows are to receive, for example, during the days 3 to 75 daily rations with the following energy content:

day 65: 28,00 MJ

day 66: 28,00 MJ + 0,35 MJ = 28,35 MJ

day 67: 28,35 MJ + 0,35 MJ = 28,70 MJ

day 68: 28,70 MJ + 0,35 MJ = 29,05 MJ

etc.

day 85: 35.00 MJ

The feed amount calculated from the energy content is indicated in menu **SOWS FEED (SF)**.

5.3 Energy demand per piglet

If the curve is used for lactating sows, the sow can get a different feed amount depending on the number of piglets, i.e. the ration can be increased by the energy amount (resp. feed amount) per piglet which is to be entered here.

The number of piglets raised by a sow must be entered in menu **SOWS FEED (SF)** at number.

Example: 1 sow + 10 piglets ➡ 1 <space bar> 10

5.4 Change of mix

Enter the mix no. here which is to be fed as of the corresponding feeding day if a curve is used. You can only choose between mix no. A or mix no. B. If an entered mix no. is to be deleted, press the space bar.

The mix no. must only be entered once for the first index point and is then used automatically until a new mix no., i.e. a change of mix, is defined.

6 SOWS FEED (SF)

In this menu, all sows are displayed which are to get feed from the feeding-on-demand system. These are sorted according to station no., group no and sow no.

Date: TU 16.03.2004 Time: 07.59											
Sow Nr.	Code Nr.	Stat./ Group	Transp. No.	Num-ber	Mix No.	Curve No.	MJ/ Day	Feed /Day	Rest	% +/-	Alarm Time Sow Corr
101	ABC	1. 1	587	1- 0	B	1	13.23	11.56	11.56	0	100
102	ABC	1. 1	585	1- 0	B	1	12.45	10.32	10.32	0	100
103	ABC	1. 1	583	1- 0	B	1	11.95	9.32	9.32	0	100
104	ABC	1. 1	582	1- 0	B	1	12.45	10.32	10.32	0	100
112	ABC	1. 1	584	1- 0	A	1	9.37	7.32	7.32	0	* 100
105	XYZ	1. 2	316	1- 0	B	1	7.95	6.34	4.96	0	*! 100
106	XYZ	1. 2	318	1- 0	B	1	13.23	11.56	11.56	0	* 100
107	XYZ	1. 2	315	1- 0	B	1	11.95	9.32	9.32	0	* 100
108	XYZ	1. 2	589	1- 0	B	1	12.45	10.95	10.95	0	* 100
109	XXX	1. 3	590	1- 0	B	1	8.35	7.12	7.12	0	100
110	XXX	1. 3	588	1- 0	B	1	9.45	8.12	9.12	0	* 100
111	XXX	1. 3	581	1- 0	B	1	6.12	5.10	5.10	0	* 100

STATUS: STOP

SOWS FEED (SF)

	The sows can be classified optionally according to sow no., station no. or group no. The desired order can be preset in the SYSTEM-VARIABLES (SV) menu under the sort key. (see also "Sort key" on page 66)
---	---

In this menu, the function keys can be used like this:

F2	find sow no.
F3	find station no.
F4	find group no.
F5	find transponder no.
Shift F5	find transponder no. (double)
PgDn	scroll page forwards
PgUp	scroll page backwards



As long as all data required for faultless feeding are not entered, the symbol ? is displayed in the column Alarm Sow, i.e. there are still inputs missing. The respective sow will not get feed and it will be printed out with the automatic print-out when feeding is finished.

6.1 Code no.

A code can be entered per sow as an index for supplier, producer, race etc. This code can consist of 6 letters or numbers max. It does not influence the system, it is only used as a criterion of selection for a print-out.

6.2 Station no.

When animals are housed, which may also be done in this menu with the command **HOUSING (HO)**, the computer also asks for the **station no.**

No matter to which group or station no. a sow has been assigned, it can demand its feed ration at every station.

6.3 Group no.

Upon housing, the computer also asks for the group no. The same sorting criterions are used as for the station no.

6.4 Transponder no.

You must enter a transponder no. for every sow. It is a four-digit number which can be read at the transponder and must be entered here. The computer checks if there is already a transponder with this no. If so, the message:

ERROR, TRANSPONDER ALREADY EXISTS

will appear.

6.5 Number

An input is only required here, if a sow with piglets is to be fed at the feeding-on-demand system. In this case, the number of piglets of this sow must be entered. In the feed curve, the additional need of energy per piglet must be entered so that this sow will get the right feed ration.

6.6 Mix no.

Only one mix no. (A or B) can be entered per sow on condition that a possible second feed mix exists. Which kind of feed is mix no. A or B must be entered in menu **PROCESS VARIABLES (PV)**.

An additional component, e.g. mineral feed can be added to the mix no., if the station is equipped correspondingly. For this, press the space bar when the cursor is in the field before the mix no. As a result, an additional output for a mineral dosing device is activated when a sow is identified. The output for the mineral dosing device is activated together with the mix no. The duration of activation of the mineral dosing device must be entered per station in menu **DOSING TIMES (DO)**.



To assign a new mix no. to all sows of one group or station, use in the **FUNCTION MENU (FM)** the command `give station/group a new mix no.` (see also page 84)

6.7 Curve no.

Five different feed curves can be entered at most which must be defined in menu **FEED CURVES (FC)**. All curves can be used for pregnant sows as well as for sows with piglets. These curves can be defined freely in menu **FEED CURVES (FC)**.

With the input of the feed curve, the computer automatically calculates the feed amount per feeding. It is determined by the energy content of the feed, the input from the feed curve, the partition in % of the daily ration and the number of animals (in case of sows with piglets). It is recalculated every day before the start of the first feeding period according to the course of the feed curve.

The day on the curve is fixed with the insemination date in menu **SOWS CALENDER (SC)**.



To assign a new curve no. to all sows of one group or station, use in the **FUNCTION MENU (FM)** the command `give station/group a new curve no.` see also page 84)

6.8 Feed / day

If feeding is to take place with feed curve 0, i.e. without feed curve, the feed amount per sow can also be entered directly. However, you must enter the daily ration which is to be given to this sow. The computer then calculates the feed amount per feeding according to the partition in per cent of the daily ration from the menu **MIXING / FEEDING TIMES (FE)**. The feed amount may change with every feeding if there are different partitions in % of daily rations.

If feeding is to take place with a feed curve, the computer automatically calculates the feed amount per feeding. It is determined by the energy content of the feed, the input from the feed curve, the partition in % of the daily ration and the number of animals (in case of sows with piglets). It is recalculated every day before the start of the first feeding period according to the course of the feed curve. The feed amount as well as the rest amount can be entered with two decimals.

6.9 Rest kg

The amount which has not been eaten, yet, is displayed here. It is recalculated and updated after every start of a feeding period. If the daily ration is divided up to several feeding periods, the rest amounts will be added up, i.e. if a sow has not eaten its ration at the first feeding time, it will get the rest amount in addition to the new ration at the second feeding time.

If the rest amount is not zero at the end of the last feeding period, this sow will be marked as alarm sow, i.e. the symbol * will appear in the column Alarm Sow and all sows with this symbol will automatically be printed out at the end of feeding.

In case a sow is housed during a feeding time, a feed amount will only be calculated for it after the start of the next feeding time. In this case, it is, however, possible to enter a feed amount for the current feeding time directly in column Rest.

6.10 % + -

If the feed amount has to be reduced due to sickness, high temperatures, etc., a percentage reduction per sow can be entered. 100% reduction can be made at most (the smallest step being 10%). This reduction is automatically lessened by 10 % per day until the percentage reaches zero.

If an odd number is entered for a percentage reduction, e.g. -71, the feed amount will be reduced by 70 % and the reduction will constantly stay at -70 % the next day. If an even number, e.g. - 70, is entered, a 60%-reduction will take place the next day.

It is also possible to increase the feed amount in per cent. Here an automatic adjustment to the programmed feed curve takes place in the same way as with the percentage reduction.

6.11 Alarm sow

If the data of a sow have not been entered completely, this sow is an alarm sow, i.e. the symbol "?" is indicated in the column Alarm Sow until all data are entered.

If the remaining feed quantity is not zero after the last feeding time, this sow will be marked as alarm sow, i.e. the symbol * appears in the column Alarm Sow until the sow has completely eaten its daily ration on one day.

In addition, all sows will be marked with the symbol "!" which were identified at the hogging control.

Both symbols * and ! can be deleted by pressing the space bar when the cursor is at this position.

All sows marked with these symbols are automatically printed out after the last feeding time.

In the **FUNCTIONS MENU (FM)** you can print all alarm-sows on-screen

6.12 Time correction

In addition to the eating time / feed unit which can be entered per station in the menu **DOSING TIMES (DO)**, a time correction can be entered in per cent per sow in the menu **SOWS FEED (SF)**. This time is dependent on the eating speed of a sow and must be entered individually after having checked a feeding process. If you enter 100, the computer will consider the eating time entered in the menu **DOSING TIMES (DO)**. This time can be increased or reduced in per cent according to the condition of the sow.

7 SOWS COSTS (SC)

In this menu, the feed consumption is recorded and it is displayed which sow has not eaten its ration in the last three days, and how much it has not eaten. You will also be informed which sow has entered which station how many times and which was the last station.

DATE: TU 16.03.2004 TIME: 10.58										
Sow No.	Code No.	Stat./ Group	--- Visits ---		Rest feed/Day			Consumpt.	Consumpt.	Feed
			Number	Station	1	2	3	kg Feed	kg DM	Costs
404	ABC123	01.01	3	1	0.00	0.00	0.00	37.8	33.3	7.64
404	ABC123	01.01	1	1	0.00	0.70	0.00	35.6	31.3	6.84
404	ABC123	01.01	1	1	0.50	0.00	0.00	36.9	32.5	7.15
STATUS: STOP										

SOWS COSTS (SC)

	The sows can be classified optionally according to sow no., station no. or group no. The desired order can be preset in the SYSTEM-VARIABLES (SV) menu under the sort key. (see also "Sort key" on page 66)
---	---

In this menu the function keys can be used as follows:

F2	find sow no.
F3	find station no.
F4	find group no.
Shift F2	find double sow no.
Shift F3	find double station no.
Shift F4	find double group no.
PgDn	scroll page forwards
PgUp	scroll page backwards

7.1 Sow no.

The numbers of the sows which are at the feeding-on-demand system are displayed here. The sow no. must be entered when it is housed and is then taken over into this menu.

Inputs are not possible here.

7.2 Code no.

A code can be entered per sow as an index for supplier, producer, race etc. This code can consist of 6 letters or numbers max. It does not influence the system, it is only used as a criterion of selection for a print-out.

Inputs are not possible here.

7.3 Station no.

When animals are housed, which may also be done in this menu with the command **HOUSING (HO)**, the computer also asks for the **station no.**

No matter to which group or station no. a sow has been assigned, it can demand its feed ration at every station.

Inputs are not possible here.

7.4 Group no.

Upon housing, the computer also asks for the group no. The same sorting criterions are used as for the station no.

Inputs are not possible here.

7.5 Visits number / station

It is recorded here, how many times a sow was identified in the feeding station. At the start of feeding, this counter is reset to zero. The display also shows which station has last been visited.

7.6 Rest feed / day

It is recorded here, how much feed has not been eaten during the last three days. Before the first feeding period starts, this rest amount is copied from the menu **SOWS FEED (SF)** into column 1. Already existing values in this column are copied to column 2, etc.

Thus you can check which sow has not eaten how much feed of its daily ration in the last three days. These data can also be printed out via the menu **PRINTER (PR)**.

7.7 Consumption kg feed

The consumption of feed (and water) is registered here. After each feeding time, the counter is raised by the consumed quantity per sow. An input is only required after troubles in the computer. When animals are housed, this counter is automatically set to zero.

7.8 Consumption kg DM

This counter records the consumption of dry matter per sow and, after each feeding, it is raised by the consumed amount of dry matter. The factor for dry matter must be entered in the menu **PROCESS VARIABLES (PV)**. When animals are housed, this counter is automatically set to zero, too.

7.9 Feed costs

This counter records the arisen feed costs per sow on condition that the price per mix has been entered in menu **PROCESS VARIABLES (PV)**.

Calculation: feed amount x price/kg. After each feeding, the result of this is added to the costs calculated until then and recorded. This counter is also automatically reset to zero when animals are housed.

8 SELECTION DATA (SD)

In this menu, you can see in which of the three production cycles a sow is and when it will be selected next time.

Date: TU 16.03.2004 Time: 12.14											
Sow No.	Code No.	Stat./ Group	-----Days-----			-----Selection-----					
No.	No.	Group	Pregn.	Weaning	Hogging	Day	Reason	Way	Wday	Index	Coment
101	ABC	1. 1	83			80	4	1	DO	1	TEST-4
102	ABC	1. 1	82			80	4	1	DO	1	TEST-4
103	ABC	1. 1	81			115	5	1	MI		FORROWING
104	ABC	1. 1	80			80	4	1	DO	1	TEST-4
105	XYZ	1. 2	79			80	4	1	DO	1	TEST-4
106	XYZ	1. 2	78			80	4	1	DO	1	TEST-4
107	XYZ	1. 2	77			80	4	1	DO	1	TEST-4
108	XYZ	1. 2	76			80	4	1	DO	1	TEST-4
109	XXX	1. 3	75			80	4	1	DO	1	TEST-4
110	XXX	1. 3	74			80	4	1	DO	1	TEST-4
111	XXX	1. 3	73			80	4	1	DO	1	TEST-4
STATUS: STOP											

SELECTION DATA (SD)



The sows can be classified optionally according to sow no., station no. or group no. The desired order can be preset in the **SYSTEM-VARIABLES (SV)** menu under the **sort** key. (see also "Sort key" on page 66)

In this menu the function keys can be used as follows:

F2	find sow no.
F3	find station no.
F4	find group no.
Shift F2	find double sow no.
Shift F3	find double station no.
Shift F4	find double group no.
PgDn	scroll page forwards
PgUp	scroll page backwards

8.1 Pregnancy, weaning, hogging days

There is one day counter with three different columns per sow. Not more than one column is used at the same time.

The day counter of pregnancy days starts with the mating date. When this date has been entered, the counter of hogging days is automatically reset to zero.

The day counter of weaning days starts with the input of the last litter date. After having entered this date, the counter of pregnancy days is automatically reset to zero.

The day counter of hogging days starts with the weaning date. When it has been entered, the counter of weaning days is automatically reset to zero.

Inputs are not possible here.

8.2 Selection

The selection days are calculated from the inputs in the menu **SELECTION DAYS (DA)**. On the display, the next selection day always appears with reason, way and weekday.

8.2.1 Selection-reason

There are 16 different reasons to select a sow. The numbers of these reasons are defined in the menu **SELECTION DAYS (DA)**. A text can be added to each reason which is indicated as remark. This text changes together with the no. of reason for selections as soon as a sow has been selected and the next reason is due.

8.2.2 Selection-way

There are three ways of selection, i.e.

- way no. 1, selection into a separate pen
- way no. 2, selection by colour coding (*As soon as a sow is identified, it is marked with a colour*)
- way no. 3, selection into a separate pen with colour coding



To select all sows of a group or station, use the command **selection of station/group** in the **FUNCTION MENU (FM)** (see also page 84)

8.2.3 Selection-weekday

There are 7 weekdays to select a sow. For each selection day, it is possible to fix the weekday of the selection in the menu **SELECTION DAYS (DA)** and thus to select all sows on the same weekday which shall be selected within one week because of the same reason. It is, however, also possible to select sows for different reasons on the same weekday if the same day was entered for several reasons.

A week starts on Monday and ends on Sunday, i.e. MO - TU - WE - TH - FR - SA - SU; the week no. is the calendar week.

	Sows which do not use the feeding-on-demand system cannot be selected. In the menu SELECTION DATA (SD) information is indicated independent of a sow being fed by the feeding-on-demand system or not.
---	---

8.3 Index

For index there are three different columns with the following functions:

a)	Selection	b)	Selection-way	c)	Hogging detection
+	every day	1	Selection	A	Selection
<	independent of weekday	2	Colour	B	Colour
		3	Selection and colour	C	Selection and colour
		*	is selected	!	is selected

a) Selection

For example, if a sow is to be selected every day, the symbol + must be entered in the first column, i.e. the sow will be selected every day independent of the day counters. However, it will only be selected once a day, i.e. if the sow goes into the station again on the same day after it has been selected, it will not be selected again.

If a sow is to be selected independent of the weekday, < must be entered in the first column, i.e. the sow will exactly be selected on the calculated day.

This input can only be deleted manually.

b) Selektion-way

A sow which is selected today, is marked with the no. of the way of selection, e.g. "1

A sow that has been selected, is marked with the symbol *. This symbol will be deleted automatically after the last feeding period has ended.

If a sow is to be selected independent of the sow planner, the way of selection must be entered as index, i.e. this sow will immediately be selected when it goes into the station for the next time. When the sow has been selected, the index is changed to * which will be deleted after the end of the last feeding time.

c) Hogging detection

If a sow has been recognised by the hogging detector, i.e. it has met the conditions entered in menu **SYSTEM VARIABLES (SV)**, it will be marked with the indication of the way of selection, e.g. "A", and the corresponding remark which is entered in menu **SELECTION DAYS (DA)** on pos. 16. If this sow goes into the station, it will be selected according to the inputs which will be indicated by the symbol "!".

In addition to the mark in menu **SELECTION DATA (SD)**, the symbol "!" will be indicated in menu **SOWS FEED (SF)** in the column Alarm Sow. If the symbol is deleted, this sow will also be deleted in menu **BOAR RECOGNITION (BR)**.

8.4 Remark

To each selection, a reason of 8 letters at most can be entered in menu **SELECTION DAYS (DA)**. These texts only appear if a new reason for selection is set and serve to obtain a better survey. The texts of pos. 1 to 15 are for normal selection, the text of pos. 16 is for hogging detection.

Inputs are not possible here.

9 SELECTION DAYS (DA)

DATE: TU 16.03.04 TIME: 15.02

Selection Reason	-----Selection days-----			Selection Way W.day
	Pregn.	Weaning	Hogging	
1 SCAN1	22	0	0	1
2 SCAN2	36	0	0	1
3 COLI1	75	0	0	1 TH
4 COLI2	95	0	0	1 TH
5 FARROW	108	0	0	1 WE
6 WEAN	0	21	0	1
7 WEAN	0	0	7	1
8	0	0	0	0
9	0	0	0	0
10	0	0	0	0
11	0	0	0	0
12	0	0	0	0
13	0	0	0	0
14	0	0	0	0
15	0	0	0	0
16 BOAR-1	0	0	0	0

STATUS: STOP

9.1 Reason for selection

16 variable comments can be entered here. These texts can be used for different purposes and tell why a sow is to be selected. When a reason for selection is due, this text will also appear in menu **SELECTION DATA (SD)**.

The texts of pos. 1 to 15 are for normal selection, the text of pos. 16 is for hogging detection.

9.2 Selection days

Comparable to menu **SELECTION DATA (SD)**, there are three different day counters. Here, the selection days can be entered on which a sow is to be selected or, if it is not fed by the feeding-on-demand system, on which an information will appear in menu **SELECTION DATA (SD)**. These days entered here also appear in the menu **SELECTION DATA (SD)** as next selection days. If a selection day is reached it changes automatically to the next selection day.

The information is always indicated independent of the sow being fed by the feeding-on-demand system or not.

Only one selection day can be added to a comment. Since these comments refer to the selection, there are only 16 selection possibilities.

9.3 Way of Selection

There are three different ways of selection, i.e.

- way no. 1, selection into a separate pen
- way no. 2, selection by colour coding (*As soon as a sow is identified, it is marked with a colour*)
- way no. 3, selection into a separate pen with colour coding

You can enter here, how the sow is to be selected. To this end, however, you must have provided for the corresponding equipment. The no. of the way of selection then appears in the menu **SELECTION DATA (SD)** and the sow will be selected correspondingly.

9.4 Selection weekday

Here, the weekday for this selection must be determined. All sows which are to be selected within one week, for example because of farrowing, will be selected on the same weekday, regardless whether the day counter has already been passed or not been reached, yet. Exceptions to this must be entered as index in menu **SELECTION DATA (SD)**.

A week starts on Monday and ends on Sunday, i.e. MO - TU - WE - TH - FR - SA - SU; the week no. is the calendar week.

10 SOWS CALENDAR (CA)

In this menu, the performance of the sow can be controlled. All important data can be entered and checked here. In this menu, all sows are displayed, even those sows which do not use the feeding-on-demand system.

DATE: WE 17.03.04 TIME: 07.43										
Sow No.	Code No.	-Insemination-		-----Litter-----		---FI---		Weaning	Comment	Stat
		last	boar	last	Nr. /Year	let.	aver.			
101	ABC	21.06.00	4712	00.00.00	1 0.00	0	0.0	00.00.00	1	Yes
102	ABC	22.06.00	4712	00.00.00	1 0.00	0	0.0	00.00.00	1	Yes
103	ABC	23.06.00	4712	00.00.00	1 0.00	0	0.0	00.00.00	1	Yes
104	ABC	24.06.00	4712	00.00.00	1 0.00	0	0.0	00.00.00	1	Yes
105	XYZ	25.06.00	4712	00.00.00	1 0.00	0	0.0	00.00.00	1	Yes
106	XYZ	26.06.00	4713	00.00.00	1 0.00	0	0.0	00.00.00	1	Yes
107	XYZ	27.06.00	4713	00.00.00	1 0.00	0	0.0	00.00.00	2	Yes
108	XYZ	28.06.00	4713	00.00.00	1 0.00	0	0.0	00.00.00	3	Yes
109	XXX	29.06.00	4714	00.00.00	1 0.00	0	0.0	00.00.00	4	Yes
110	XXX	30.06.00	4711	00.00.00	1 0.00	0	0.0	00.00.00	2	Yes
111	XXX	01.07.00	4711	00.00.00	1 0.00	0	0.0	00.00.00	1	Yes

STATUS: STOP

Comment	Text
1	BHZZ
2	PIC
3	SCHAUMANN
4	LEIC

The sow planner will, however, only work perfectly, if all data are entered correctly. If a sow is housed which is not mated, yet, this sow will be counted with hogging days.

Feeding will also work independent of the sow planner. But if selection is to take place automatically, the calendar data must be entered.

If a sow is to be deleted, put the cursor to this sow and press the DEL-key.



The sows can be classified optionally according to sow no., station no. or group no. The desired order can be preset in the **SYSTEM-VARIABLES (SV)** menu under the **sort** key. (see also "Sort key" on page 66)

10.1 Last insemination

When the mating date has been entered, the counter of pregnancy days starts. If the input of the last insemination date is different to the current date (new installation or new sows) the pregnancy days are calculated and the counter starts with the calculated day. This day counter is also the day on the feed curve. With the input that a sow is at the feeding-on-demand system, both counters are synchronised, i.e. the counter for selection is identical with the day counter of the feed curve.

The day counter of the feed curve can be controlled in menu **SOWS FEED (SF)** by entering feed curve "0". In the column feed/day, the day on the curve is indicated. If everything has been entered correctly, this day must be identical with the day in menu **SELECTION DATA (SD)**.

If this input is made on the same day, the counter of pregnancy days in the menu **SELECTION DATA (SD)** will start with zero. At the same time with this input, the counter of hogging days is set to zero.

By means of this input, all consumption data are also automatically set to zero, i.e.

- consumption kg feed
- consumption kg DM
- feed costs
- kg Mix/day
- rest kg

In the menu **SOWS FEED (SF)**, this sow will be indicated as alarm sow until the remaining data such as station/group, transponder no., etc., are entered.

The mating date may be corrected within 42 days without causing a change of the litter counter.

10.2 Boar no.

In addition to the mating date, the boar no. must be entered. The number entered here must exist in the boar index, too. Each boar can be defined by entering a four-digit number in menu **BOAR INDEX (BI)**. A comment can be added. Altogether there are 240 different numbers with 20 different comments.

10.3 Last litter date / litter no. / litters per year

Litter data must always be entered in the menu **LITTER DATA (LD)**. After each input, the date is updated and the litter no. is always increased by 1.

With this input, the number of litters per year is calculated, i.e.

$$\frac{365}{\text{average fi}} = \text{number of litters per year}$$

Inputs are not possible here.

10.4 Last / average farrowing interval

When the last litter date is entered, the last farrowing interval (fi) is calculated, i.e. the calendar days between two litters. The farrowing interval of a first litter sow is calculated from the difference between the first mating date and the litter date.

With this input, the average farrowing interval is also calculated, i.e.

$$\frac{\text{last fi} + \text{average fi}}{2} = \text{new average fi}$$

In case of the first input of a litter, the last farrowing interval is the average farrowing interval.

With this input, the counter weaning days starts and the counter pregnancy days is deleted.

Inputs are not possible here.

10.5 Weaning

The date when the piglets were separated from the sow must be entered here. With this input, the counter of weaning days is set to zero and the counter of hogging days starts.

10.6 Comment

Each sow can be related to a comment which must be entered in the menu **SOW COMMENT (CO)**. The text consists of 8 letters max. If the cursor is put to this position and ENTER is pressed, a window with the possible comments appears.

The texts do not appear in this menu. They inform about the characteristics of this sow.

10.7 Station yes/no

It must be entered if a sow is to be fed with the feeding-on-demand system. Only if this input has been made, the sow will receive feed and thus will not appear as alarm sow in the menu **SOWS FEED (SF)**. With this input, the mating date will be synchronised with the day on the feed curve. The day on the feed curve can be controlled in menu **SOWS FEED (SF)** in the column feed/day, if the curve no. is set to zero.

If no input has been made, this sow automatically appears in the menus **SOWS FEED (SF)** and **SOWS COSTS (SC)** and, if there are inputs missing, is indicated as alarm sow.



With the command set station/group on/of feeding in the **FUNCTION MENU (FM)** it is possible to include/exclude a certain group or station from the feeding-on-demand. (see also page 83)

11 PIGLET DATA (PD)

DATE: WE 17.03.04 TIME: 08.56													
Sow No.	Code No.	--last litter			-- total production			Average/litter			Piglets/year		
		live	dead	weaned	live	dead	weaned	live	dead	weaned	live	dead	weaned
101	ABC	10	3	7	84	10	74	10.5	1.3	9.3	22.1	4.3	20.2
102	ABC	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
103	ABC	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
104	ABC	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
105	XYZ	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
106	XYZ	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
107	XYZ	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
108	XYZ	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
109	XXX	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
110	XXX	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
111	XXX	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0

STATUS: STOP

11.1 Last litter

These data must be entered in the menu **LITTER DATA (LD)** and are indicated here. Only the current piglet figures of the last litter must be entered there, i.e.

- the born-live piglets
- the weaned piglets
- the loss is calculated from the born-live piglets and weaned piglets

From the input of the last litter, also statistic values are calculated, e.g

- total production
- average per litter
- piglets per year

If inputs have been corrected, these figures are corrected, too.

Inputs are not possible here.

11.2 Total production

The total production is an addition of

- born-live piglets
- dead piglets
- weaned piglets

Inputs are not possible here.

11.3 Average / litter

The average values per litter are the average number of born piglets, i.e. the total production is divided by the number of litters from the menu **SOWS CALENDAR (CA)** with

- born-live piglets
- dead piglets
- weaned piglets

Inputs are not possible here.

11.4 Piglet production per year

The piglet production per year is calculated as follows:

$$\text{piglets / sow / year} = \frac{\text{sum of piglets} \times 365}{\text{Average fi} \times \text{number of litters}}$$

12 LITTER DATA (LD)

						DATE: WE 17.03.04 TIME: 09.42
Sow No.: 007						
----- Litter -----						
Litter No.	Boar No.	live	dead	weaned	Date	Farrow.Interval
1	34	10	3	7	17.07.01	115
2	34	10	0	10	17.07.01	149
3	34	10	2	8	17.07.02	147
4	24	13	0	13	17.07.02	150
5	24	10	1	9	17.07.03	146
6	21	10	0	9	17.07.03	148

		60	6	56	142.5	
STATUS: STOP						

12.1 Boar No.

Every boar can be defined by a four-digit number. The numbers as well as the comments must be entered in the menu **BOAR INDEX (BI)**. There are altogether 240 different numbers with 20 different comments. If an input is made here, the boar no. in the menu **SOWS CALENDAR (CA)** is replaced by this input.

12.2 Litter - live / dead / weaned

These data can be entered for each litter. The last litter is at the same time indicated in the menu **SOWS CALENDAR (CA)**. Only the current piglet figures of the last litter must be entered there, i.e.

- born-live piglets
- dead piglets
- weaned piglets

From the input of the last litter, also the statistic values are calculated in the menu **PIGLET DATA (PD)**, e.g.

- total production
- average per litter
- piglets per year

If inputs have been corrected, these figures are corrected, too.

The weaned and dead piglets must be entered in the same way, i.e. all piglets must be entered since it may be that piglets are also moved to another sow. Thus it may happen, for example, that a sow has weaned more piglets than it has born.

12.3 Litter date

When the litter date has been entered, the new farrowing interval is calculated and updated. At the same time, the following data are updated in the menu **SOWS CALENDAR (CA)**:

- the litter no. is increased by 1
- the no. of litters per year is calculated
- the last farrowing interval is updated
- the average farrowing interval is updated

When the litter date has been entered, the counter of weaning days in the menu **SELECTION DATA (SD)** starts and the counter of pregnancy days is deleted.

12.4 Farrowing interval (fi)

When the last litter date has been entered, the last farrowing interval, i.e. the calendar days between two litters, is calculated. The farrowing interval of a first litter sow is calculated from the difference between the first mating date and the litter date.

With this input, the average farrowing interval is also calculated. In case of the first input of a litter, the last farrowing interval is the average farrowing interval.

Farrowing interval (fi) = difference of days between the individual litters (litter date)

For a first litter sow, the fi is calculated from the mating date and the litter date.

$$\text{average fi} = \frac{\text{sum fi}}{\text{number of litters}}$$

13 BOAR INDEX (BI)

DATE: WE 17.03.04 TIME: 17.01												
Pos. Comment	Pos. Boar	Comm.	Pos. Boar	Comm.	Pos. Boar	Comm.	Pos. Boar	Comm.	Pos. Boar	Comm.	Pos. Boar	Comm.
No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1 GFS	1 4711	1	21	0	0	41	0	0	61	0	0	
2 NORT	2 4712	2	22	0	0	42	0	0	62	0	0	
3 SBBN	3 4713	3	23	0	0	43	0	0	63	0	0	
4 NATUR	4 4714	4	24	0	0	44	0	0	64	0	0	
5	5 0	0	25	0	0	45	0	0	65	0	0	
6	6 0	0	26	0	0	46	0	0	66	0	0	
7	7 0	0	27	0	0	47	0	0	67	0	0	
8	8 0	0	28	0	0	48	0	0	68	0	0	
9	9 0	0	29	0	0	49	0	0	69	0	0	
10	10 0	0	30	0	0	50	0	0	70	0	0	
11	11 0	0	31	0	0	51	0	0	71	0	0	
12	12 0	0	32	0	0	52	0	0	72	0	0	
13	13 0	0	33	0	0	53	0	0	73	0	0	
14	14 0	0	34	0	0	54	0	0	74	0	0	
15	15 0	0	35	0	0	55	0	0	75	0	0	
16	16 0	0	36	0	0	56	0	0	76	0	0	
17	17 0	0	37	0	0	57	0	0	77	0	0	
18	18 0	0	38	0	0	58	0	0	78	0	0	
19	19 0	0	39	0	0	59	0	0	79	0	0	
20	20 0	0	40	0	0	60	0	0	80	0	0	
STATUS: STOP												

13.1 Comment

20 variable comment texts with 8 letters max. can be entered here. The texts can be used for 240 boars max. These comments only appear in this menu and are only to be used as criterion for the boars.

13.2 Boar No.

Individual four-digit numbers can be entered for 240 boars. These numbers also appear in the menu **SOWS CALENDAR (CA)** resp. **LITTER DATA (LD)**. Therefore, a certain no. must only be given to one boar. A boar no. can only be deleted if it does not exist neither in the menu **SOWS CALENDAR (CA)** nor in **LITTER DATA (LD)**, i.e. if no sow exists which was mated by this boar that shall be deleted. Otherwise, the message

BOAR IS REQUIRED

will appear if you try to delete this boar.

13.3 Comment no.

A criterion can be related to each of the 240 boars by entering the comment no. Since there are only 20 comments, each comment can be used several times.

14 BOAR RECOGNITION (BR)

This menu is only indicated if a sow has been identified at the connected hogging detection. This identified sow will be marked in addition with the symbol "!" in menu **SOWS FEED (SF)** in the column **Alarm sow**. Inputs are not possible in this menu.

Sow No.	Code No.	Stat./ Group	Transp. No.	-Number Visits -		--Durat.visits--	
				14 days	2 days	14 days	2 days
9999	ABC123	16.99	1234	2	8	234	789
1234	123abc	01.47	4567	3	7	123	989

The conditions for recording in this menu must be entered in menu **SYSTEM VARIABLES (SV)** as follows.:

Boar recognition "duration"

An input in menu **SYSTEM VARIABLES (SV)** (an example) means:

Boar recognition number/duration	duration	
Message accord. to duration	sec.	30
Boar recognition way of selection		A
Recording boar recognition	sec.	10

- A sow identified for less than 10 seconds will not be recorded at all
- A sow identified between 10 and 30 seconds will be recorded for the first time, if the total duration of all identifications exceeds 30 seconds. If it was already recorded, the duration - in case it was longer than 10 seconds - will be added to the duration in column "duration of visit 2 days" when it leaves the recognition and the counter for the number of visits is increased by 1 with each visit.
- After a change over midnight, the number of visits and their duration of the day before (which will not be indicated separately) will be copied to the values in the column "duration of visits 14 days.
- If the sow goes into the feeding station after recognition, it will be selected according to the way of selection A (selection door).
- The display will then show the number of visits which were longer than 10 seconds, and the total duration.

- "At the same time with the recording in menu **BOAR RECOGNITION (BR)** a mark (!) will appear in menu **SOWS FEED (SF)** in column Alarm Sow.

i.e. with the above-mentioned input a sow will only then be recorded in menu **BOAR RECOGNITION (BR)**, if it was at the hogging detection as long as has been entered here.

The data will be taken over into this menu if one of the following conditions is met:

Message according to duration

Message according to number

Only one condition can be used at the same time.

Number of visits 14 days = average per day of the last 14 days

Number of visits 2 days = average per day of the last 2 days

Duration of visits 14 days = average per day of the last 14 days

Duration of visits 2 days = average per day of the last 2 days

A sow which is recorded at the boar recognition will automatically be deleted if

- it is moved out
- a mating date is entered
- a sow is not at the feeding-on-demand system any more

A recorded sow can also be deleted manually.

15 SOW COMMENT (CO)

		DATE: WE 17.03.04 TIME: 11.07
Pos.	Sow Comments	
1	LUED	
2	SCHAUMANN	
3	BHZP	
4	COTSWOL	
5	HDP	
6	PIC	
7	LEIC	
8		
STATUS: STOP		

In this menu, 8 comments with 16 figures or letters max. can be entered which can be assigned to a sow. In menu **SOWS CALENDAR (CA)**, the comment no. can then be entered in the column **comment**.

16 SYSTEM-VARIABLES (SV)

In menu SYSTEM VARIABLES (SV), the feeding system is defined and every input required for perfect functioning is made.

DATE: WE 17.03.04 TIME: 12.14				
Feeding on demand dry/liquid	Liquid	Agitating time tank A	sec.	45
Number of connected stations	2	Agitating time tank B	sec.	45
Door locking time	sec. 30	Break time tank A	sec.	90
Door opening time	sec. 10	Break time tank B	sec.	90
Boar recognition no./duration	duration	Recircul.time circuit A	sec.	20
Message acc.to duration	sec. 30	Recircul.time circuit B	sec.	20
Message acc.to number	4	Empty time		31
Boar recognition way of selection	A	Waiting time		45
Registration boar recognition	sec. 10			
Animal no. in select.area	max. 5	Filling time dosing unit	sec.	15
Animal no. in select.area	real 0	Emptying time dosing unit	1/100	15
Selection	Yes/No Ja			
		Computer No.		3
Security time f.door lock.	sec. 15	Application No.	3 5	4
		External computer No.		1
Printer output / device No.	x5 199	External application No.		3
PC-output / device No.	x5 32	Pump time	sec.	60
Connection of printer	SERIEL	Tank cleaning	Kg	30
		Security time tank cleaning	sec.	60
		Antenna	1/10	10
STATUS: STOP				

16.1 Feeding-on-demand system dry/liquid

Apart from the different mechanical installation, the difference between the two feeding systems is that the dry feeding system in its most simple version does not require any relay or valve cards. Control and monitoring of

- entrance door
- through flap
- dosing motor
- selection door

are carried out via the control of the feeding station. A test of these inputs and outputs can be made in menu **TEST (TE)**. During the test function feeding does not take place.

16.1.1 Dry feeding

There will be no error message, if no inputs have been made in menu RC. An output for an alarm message can only be activated in connection with a relay card.

16.1.2 Liquid feeding

An error message will appear if no inputs have been made in menu RC.

16.2 Number of stations connected

The number of stations connected must be entered here regardless which kind of station it is. 16 stations can be connected to the standard version, if you have an extension board, 24 stations can be connected. With this input, the menus

- DISPLAY (DI)
- TEST (TE)
- DOSING TIMES (DO)

also change, i.e. the display of connected stations changes.

16.3 Door locking time

The door locking time starts when a sow goes into the station, i.e. when input 2 of the feeding station is activated. If no sow is identified within this time, the entrance door will be opened as soon as the time has gone by. The door locking time is the same for all stations.

16.4 Door opening time

When a sow has eaten its ration or has no right to get feed any more after having been identified, the access to the trough is closed again and the entrance door is opened immediately if nothing is entered here.

If a time is entered here, the door will only be opened after expiration of that time starting with locking the access to the trough.

16.5 Boar recognition number/duration

You may enter here, if a sow is to be selected according to the number of visits or according to the duration of stay at the boar recognition.

If a sow has been identified at the boar recognition and meets the conditions for recognition (message according to number/duration), one of the above-mentioned letters is indicated automatically in menu **SELECTION DATA (SD)** in the column **Index**.

As soon as a sow has been identified at the boar recognition and meets the programmed criteria (number of visits or duration of stay), and afterwards goes into a feeding station, the way of selection indicated in menu **SELECTION DATA (SD)** will be carried out. You can see that from the ! which will be displayed instead of the above-mentioned letter.

The comment for selection after boar recognition is entered in menu **SELECTION DAYS (DA)** at pos. 16.

16.6 Message according to duration

If you have decided for the criterion "duration of stay" (DURATION) for boar recognition, you can enter here after which time (in seconds) the way of selection must be set in column **Index** in menu **SELECTION DATA (SD)**, starting with the identification of a sow.

16.7 Message according to number

If you have decided for the criterion "number of visits" (NUMBER) for boar recognition, you can enter here after how many visits of a sow to the boar recognition the way of selection must be set in column **Index** in menu **SELECTION DATA (SD)**.

16.8 Boar recognition way of selection

If a sow meets the criteria for a selection after a boar recognition no matter if this was because of her duration of stay or because of the number of visits, you can enter here which way of selection is to take place when it goes into one feeding station. There are the following ways of selection:

	none
A	selection
B	colour
C	selection + colour

16.9 Recording boar recognition

You may enter here after which time (input in seconds) a boar recognition is to be recorded, so that a sow will not be recorded right away when passing the boar recognition, i.e. this sow must be identified as long as has been entered here before it is recorded.

16.10 Maximum number of animals in selection pen

You may enter here, how many animals can go into the selection pen at most so that the selection pen will not be overcrowded. When this number is reached, all animals, even those which normally must be selected, are guided back into the group.

16.11 Actual number of animals in selection pen

You may control here, how many animals have already been selected. This counter is reset to zero on the start of feeding.

16.12 Selection Yes/No

You may enter here if a selection actually is to take place.

16.13 Security time for door locking

You can enter here, how long the door still is to be locked after the expiration of the eating time which must be entered in menu **DOSING TIMES (DO)**. The eating time begins on the start of the feed impulse and after its expiration the security time for door locking starts. The entrance door is opened when the complete feed ration for this sow is metered or when the sow is not identified any more. This security time is the same for all stations.

16.14 Printer output / Device No.

You may enter here, on which serial port printing is to be carried out. There are two different possibilities (see below). If printing is to take place via port X5, the device no. of the user, e.g. 199 in case of printing via a PC with emulation program TM99, on the RS485 net, must be entered in addition. The window you see below can be opened and closed with the [ENTER]-key.

The baud rate for the RS 232 port is as follows:

Program 560-99-D= can be adjusted in the operative system (OS)

Program 1100-99-D= is always 4800 Baud (cannot be changed)

No.	Designation
X4	RS232 Port
X5	RS485 Port (device no.?)
---	Löschen

Complete choice with <ENTER>



In order to activate you selection, press the reset-key on the MC99.

16.15 PC-output / Device No.

You can enter here, to which serial port transmissions can be sent after a power failure. There are two different possibilities (see below). If transmissions are to take place via port X5, the device no. of the user (Teilnehmer??) on the RS485 net must be entered in addition. The window you see below can be opened and closed with the [ENTER]-key. If the computer is operated from different terminals or PC's, you should always enter here, where to transmissions are to be sent after a power failure. If you use the program 560, this is in most cases the display of the MC99, i.e. port X5 with the address of the display. This input does not inform you to which port the PC is connected, but you can only determine to which port transmissions are sent after a power failure. If you use program 1100, transmissions are always sent to the display after a power failure.

The baud rate for the RS 232 port is as follows:

Program 560-99-D= can be adjusted in the operative system (OS)

Program 1100-99-D= is always 4800 Baud (cannot be changed)

No.	Designation
X4	RS232 Port
X5	RS485 Port (device no.?)
---	Löschen

Complete choice with <ENTER>



In order to activate you selection, press the reset-key on the MC99.

16.16 Printer connection

There are different interfaces to connect a printer (see table). According to the output of the printer, different inputs must be made, either SERIAL or PARALLEL which can be selected by means of the space bar.

interface	device # 1	device # 2	adjustment
X4		printer	SERIELL
X4		printer + PC	PARALLEL
X5	Interface RS232/Rs485	printer + PC	SERIELL

For information about the electrical connection and the adjustment of transmission speed, please see the installation and service manual.

16.17 Sort key



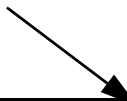
The sorting functions has to be carried out in the STOP status.

Enter, according to what criteria the sows are to be sorted in the **SOWS FEED (SF)** menu. Open selection window: **<ENTER>**

```
STATION: station / group / sow
GROUP: group / station / sow
SAU: sow
mating 0-9: ascending mating date
mating 9-0: descending mating date
```

STATION: station / group / sow	sort data accord. to station no. 2. sort key is the group no. 3. sort key is the sow no.
GROUP: group / station / sow	sort data accord. to group no. 2. sort key is the station no. 3. sort key is the sow no.
SOW: sow	sort data accord. to sow no.
mating 0-9: ascending mating date	sort ascending accord. to mating date
mating 9-0: descending mating date	sort descending accord. to mating date

After selecting a sort key, a * appears behind the time



DATE: WE 17.03.04 TIME: 14.35 *					
Feeding on demand dry/liquid	Liquid	Agitating time tank A	sec.	45	
Number of connected stations	2	Agitating time tank B	sec.	45	
Door locking time	sec. 30	Break time tank A	sec.	90	
Door opening time	sec. 10	Break time tank B	sec.	90	
Boar recognition no./duration	duration	Recircul.time circuit A	sec.	20	
Message acc.to duration	sec. 30	Recircul.time circuit B	sec.	20	

SYSTEM VARIABLES (SV)

Use the ESC-key to switch to the main menu in order to sort the sows according to the preset values.

During the sorting operation, a rotating symbol (/) appears behind the time indication. The symbol rotates at an increasing speed and extinguishes after the sorting operation has been completed.



DATE: MO 17.03.04 TIME: 14.40 /	
BIG DUTCHMAN CALLMATIC	
P560-99-GB	
FM FUNKTION MENU	FE MIXING/FEEDING TIMES
SP START/STOP PROCESS	DO DOSING TIMES
HO HOUSING	CU FEED CURVES
MT MOVING TO OTHER HOUSE	SF SOWS FEED
MO MOVING OUT	SC SOWS COSTS
DI DISPLAY	SD SELECTION DATA
SB START BREAK	DA SELECTION DAYS
EB END BREAK	CA SOWS CALENDAR
AM ALARM MEMORY	PD PIGLET DATA
AL TURN OFF ALARM	LD LITTER DATA
PR PRINTER	BI BOAR INDEX
	BR BOAR RECOGNITION
	CO SOW COMMENTS
	SV SYSTEM VARIABLES
	PV PROCESS VARIABLES
STATUS: STOP	

Main menu

16.18 Agitating time tank A/B

After the start of feeding, which is only effected via the clock time, first agitator A starts and then, with a little delay, agitator B. After expiration of the time entered here, the front and end valves are opened and the feed pumps start. When the time entered here has gone by once again, the agitators will be stopped one after the other and the break time starts. Afterwards the agitators will be switched on and off in intervals according to the time entered here or at the break time.

To start an agitator it is required that sensor input pos. 3 and 4 (sensor minimum storage tank A/B) is active. If this is not the case, there are two different messages:

On the start of feeding:

STATUS: STOP ALARM: 12, STORAGE TANK A/B EMPTY

An alarm code follows an feeding will not be started.

During feeding:

STATUS: STORAGE TANK A/B EMPTY

If input pos. 3 or pos. 4 gets passive, all entrance doors of the feeding stations will be locked, the feed pumps, agitators as well as the front and end valves in the feed lines will be closed. This is the same situation as with the break function. An alarm message will not appear!

If the sensor gets active again, the agitators, feed pumps as well as the front and end valves and the entrance doors to the feeding stations will be opened again one after another if the end of the feeding period is not reached, yet.

16.19 Break time tank A/B

After the expiration of the agitating time, the break time starts and when it is gone by, the agitator is switched on again, i.e. during the total feeding time, the agitator is switched on and off in intervals. These times can be programmed variably. Recirculation continues during the break time.

16.20 Recirculation time circuit A/B

After expiration of the agitating time, the front and end valves are opened and the feed pump starts. After expiration of the recirculation time entered here, the doors are opened and feeding starts.

If no sow is identified, recirculation stops when this time has gone by. After expiration of the waiting time, recirculation starts again with the time entered at empty time, i.e. recirculation is also carried out in intervals.

If a sow goes into the station during the waiting time, recirculation starts if the identified sow has not eaten its total ration, yet. In this case, it will get feed after two seconds. Thus there are the following three recirculation times:

Recirculation time: After the start of feeding

Empty time: recirculation in intervals if no sow has gone into the station

Recirc. 2 seconds: If a sow goes into a station after the waiting time

16.21 Empty time of feeding station

If no sow goes into the station during the feeding period, the feed pump will stop and the front and end valve will be closed. After expiration of the waiting time, recirculation will start until the time entered here has gone by. If a sow which still has to get feed is identified, recirculation remains switched on.



The empty time must not be shorter than the eating time/unit (menu dosing times).

16.22 Waiting time

If no sow goes into the station during the feeding period, recirculation is carried out in intervals, i.e.

Empty time= recirculation "on"

Waiting time= recirculation "off"

If a sow which still has to get feed is identified, recirculation remains switched on.

16.23 Filling time dosing unit

If the sensor (input pos. 5/6 sensor dosing unit) is not activated within the time to be entered here after the start of a feed impulse at a feeding station, error code

ALARM: 30, SENSOR TROUGH FILLING

will appear and feeding will be interrupted.

16.24 Evacuation time dosing unit

If the sensor (input pos. 5/6 sensor dosing unit) of a feeding station does not get passive within the time entered here after the stop of a feed pulse, error code

ALARM: 29, SENSOR TROUGH EVACUATION

will appear and feeding will be interrupted.

16.25 Computer No.

The computer no. must be entered at Device No. in the Setup Menu of the MC99 operative system. It is only important if the computer is part of a RS485 network.



This no. should only be changed by a service technician of Big Dutchman.

16.26 Application No.

The application no. cannot be entered, but it will be indicated automatically by the system.

16.27 External Computer No.

The external computer no. is the no. of the computer where the feeding-on-demand system orders the ration of liquid feed, i.e. the feeding-on-demand system communicates with the computer which has the no. entered here. If a communication does not take place, for example because a computer with the no. entered here does not exist,

ALARM 21, COMMUNICATION ERROR

will appear. The external computer no. can be controlled on the external computer in menu **SYSTEM VARIABLES (SV)**.

16.28 External Application No.

Since a computer can have several applications, the application must be entered here, which is to mix for the feeding-on-demand system. At present, only application no. 3 or 4 can be entered here according to the program version of the external computer.

16.29 Security time pump A/B

When the first mixing time is reached, the agitator in the storage tank starts and after expiration of the agitating time, the valve to the mixing tank is opened, the feed pump starts and the storage tank is evacuated until the minimum sensor (input pos. 3 /4) is reached. If this is not the case due to a technical default, i.e. there is no change of weight on the scale, the

ALARM 27, NO EMPTYING STORAGE TANK A/B

will appear after the time entered here has gone by and the transfer of feed is interrupted.

If the mix ordered from the external computer is ready, the mixing computer gives a message to the feeding computer which then demands the mix, opens the valve to the storage tank and starts the transfer (output pos. 13/14). If there is no change of weight on the scale within the time entered here,

ALARM 16, NO FILLING OF STORAGE TANK A/B

will appear and the transfer of feed will be interrupted.



This time is the same for both storage tanks! When the above-mentioned error codes appear, feeding will be interrupted, too.

16.30 Tank cleaning

The water amount for tank cleaning of the storage tank is entered here in kg. Since the storage tank is not weighed, the water amount in the mixing tank is weighed. The storage tank is only cleaned for the first mixing time, i.e. when the first mixing time is reached, the agitator starts and after expiration of the agitating time, the rest feed of the storage tank is emptied into the mixing tank until the minimum sensor (input pos. 3 or 4) is reached. Then tank cleaning is started and the water is pumped into the mixing tank and controlled.



This amount is the same for both storage tanks!

16.31 Security time for tank cleaning

If there is no change of weight on the scale of the mixer within the time entered here after the start of tank cleaning

ALARM 28, TANK CLEANING DEFAULT, TANK A/B

will appear and cleaning will be interrupted.



External mixing will not be continued, too, until this error is removed. During this time, feeding is also interrupted. This amount is the same for both storage tanks!

16.32 Antenna

You may enter here, how long the transponder no. still is to remain in the memory after the sow is not identified any more.

The baud rate for the 20 mA is as follows:

Program 560-99-D=can always be adjusted in operative system (OS)

Program 1100-99-D=is always 1200 Baud (cannot be changed)

The baud rate must also be adjusted on the transmit / receive card.

17 PROCESS VARIABLES (PV)

DATE: TH 18.03.04 TIME: 08.53				
Pregnant sows	20		Tank A	Tank B
Sows with piglets	20	Mix No	1	0
Sows to be mated	20	Content	500	0
Number of sows	100	Min. content	100	0
Number of sows at feed.station	60	Dry matter %	88.2	0
		Energy content MJ/kg DM	14.50	0
Start of production	18.03.04	Price / kg	0.120	0
Production days	100			
Sum of weaned piglets	0	Registration since	18.03.04	00.00.00
Sum of litters	0	Consumption	100	0
		Costs	12.0	0
Litters per sow	0.0			
Piglets/sow/litter	0	Daily feed ration kg	120	0
Piglets/sow/year	0	Daily feed rest amount	60	0
Average farrowing interval	0			
		Min. amount of mix kg	50	0
		Max. amount of mix kg	1000	0
		Max. rest amount kg	30	0
STATUS: STOP				

All data required for the feeding process or the data recorded during feeding are displayed here.

If dry feeding is used and the cursor is on the input for the silo content and then SR (Silo Refill) is entered, the window shown below is opened.

17.1 Silo Refill (SR)

If a silo or tank is refilled before the old content has been fully used, the price and nutritional information of the total content probably have to be readjusted. If the values of the new feed matter are different from the old ones, average values for the total content have to be calculated. Only by this measure, the cost calculation and the production reports can be determined correctly.

Calculating new average values:

Enter command: SR

The following window will open:

```

SILO CONTENT.: 605.0 + 0.0 = 605.0
DM %.....: 88.0 + 0.0 = 88.0
MJ / KG.....: 12.67 + 0.00 = 12.67
MJ / KG DM ..: 14.40 + 0.00 = 14.40
PRO. G/KG DM: 90 + 0 = 90.00
PRICE / KG ..: 0.456 + 0.000 = 0.456

OK (Y/N).....:

```

Menu: SILO REFILL (SR)

Enter the amount of the feed component to be refilled as well as the ingredients and price of the new feed. The computer will automatically calculate the new average values of the total silo content.

Example:

A silo for component 31 (barley) is refilled with 5.400.0 kg of barley. There is a leftover amount of 605,0 kg of barley in the silo.

1. Place cursor on any spot within the row of component 31
2.  **SR**
3. Enter values
- 4.

```

SILO CONTENT.: 605.0 + 5400.0 = 6005.0
DM %.....: 88.0 + 87.0 = 87.1
MJ / KG ..: 12.67 + 12.90 = 12.88
MJ / KG DM ..: 14.40 + 14.83 = 14.79
PRO. G/KG DM: 90 + 91 = 90.90
PRICE / KG ..: .456 + .520 = .514

OK (Y/N).....: YES

```

5. If all entries are correct, answer position "OK" with Yes and the new values will automatically be taken over into the corresponding menus. Should the new new values not be transferred into the menus or if a new calculation is to be carried through, enter NO.

17.2 Pregnant sows

The number of pregnant sows, i.e. the number of those sows for which a mating date was entered in menu **SOWS CALENDAR (CA)**, resp. which are listed in menu **SELECTION DATA (SD)** in column pregnancy days, is displayed here regardless whether these sows are fed by the feeding-on-demand system or not.

Inputs are not possible here.

17.3 Sows with piglets

The number of sows with piglets, i.e. the number of those sows for which a litter date was entered in menu **SOWS CALENDAR (CA)**, resp. which are listed in menu **SELECTION DATA (SD)** in column weaning days, is displayed here regardless whether these sows are fed by the feeding-on-demand system or not.

Inputs are not possible here.

17.4 Sows to be mated

The number of sows to be mated, i.e. the number of those sows for which a weaning date was entered in menu **SOWS CALENDAR (CA)**, resp. which are listed in menu **SELECTION DATA (SD)** in column hogging days, is displayed here regardless whether these sows are fed by the feeding-on-demand system or not.

Inputs are not possible here.

17.5 Number of sows

The number of all sows for which inputs have been made in the computer is displayed here regardless whether they are fed by the feeding-on-demand system or not, i.e.

the pregnant sows
+ the sows with piglets
+ the sows to be mated

= number of sows
Inputs are not possible here.

17.6 Number of sows at feeding station

The number of sows which use the feeding station is displayed here, i.e. for which Yes was entered at station (stat) in menu **SOWS CALENDAR (CA)**.

17.7 Production start

The beginning of a business year can be entered here. With this input, data such

- Sum of production days
- Sum of weaned piglets
- Sum of all litters

are automatically reset to zero after the end of feeding. As from this date, the above-mentioned data are counted anew. Thus an annual accounts can be made, i.e. this date must be re-entered after one year.

17.8 Production days

The product of number of animals x days is counted here. This value is used later on for the production survey. An input is also possible here. The counter of production days starts with the input of the production start.

17.9 Sum of weaned piglets

The sum of weaned piglets is the sum of all piglets which have been weaned since the start of production.

17.10 Sum of all litters

In the same way as with the weaned piglets, the sum of litters is counted as of the start of production.

17.11 Litters per sow

$$\text{Litters per sow} = \frac{\text{Sum of litters} \times 365 \times 10}{\text{Production days}}$$

17.12 Piglets/sow/litter

$$\text{Piglets/sow/litter} = \frac{\text{Sum of weaned piglets}}{\text{Sum of litters}}$$

17.13 Piglets/sow/year

$$\text{Piglet/sow/year} = \frac{\text{Sum of weaned piglets} \times 365}{\text{Production days}}$$

17.14 Average farrowing interval

$$\text{Average farrowing interval} = \frac{365 \times 10}{\text{Litters per sow}}$$

17.15 Mix No. Silo A/B

HYou can enter here, which mix no. is to be fed, i.e. which mix no. either is in the silo (dry feeding), or must be prepared externally (liquid feeding). This mix no. will not be used within this program, but only for external mixing.

For external mixing which is carried out by the liquid feeding system, the mix no. which is entered here, must also be defined in the mixing computer. In the feeding-on-demand system, only the mix no. which is to be fed is programmed, but the composition of the mix must be defined in the external mixer.

In the menus **SOWS FEED (SF)** and **MIXING/FEEDING TIMES (FE)** you can only choose between mix A or mix B no matter which mix no. was entered here.

17.16 Content silo A/B

The silo content for dry feeding can be entered here. After entering SR (Silo Refill), a window is opened where all data required for silo filling can be entered. When new inputs are made, the existing values are taken into account and a new average value is calculated. If all inputs have been made these new values are taken over as soon as you have entered Y (Yes) behind the text OK (Yes/No) and the window is closed.

During feeding, the amount supplied to the stations is continuously subtracted from the silo content.

17.17 Min. content silo A/B

A minimum silo content can be entered here. If the silo contains less than this minimum silo content, the soft alarm is released thus indicating that new feed must be ordered. The alarm can be deleted when the silo is refilled.

17.18 Dry matter % silo A/B

In case of dry feeding, the dry matter content of the dry feed must be entered here. In case of liquid feeding, this value is updated automatically after the transfer of feed from the external mixer to the storage tank of the feeding-on-demand system.

This value is required because the consumption kg feed and kg dry matter is recorded in menu **SOWS COSTS (SC)**.

17.19 Energy content MJ/kg DM silo A/B

In case of dry feeding, the energy content of the dry feed must be entered here. In case of liquid feeding, this value is updated automatically after the transfer of feed from the external mixer to the storage tank of the feeding-on-demand system. This value is required because the feed curves calculate with energy values.

17.20 Price/kg silo A/B

In case of dry feeding, the price per kg of dry feed must be entered here. In case of liquid feeding, this value is updated automatically after the transfer of feed from the external mixer to the storage tank of the feeding-on-demand system.

17.21 Recording since silo A/B

A date can be entered here as of which the feed consumption and the costs attached thereto will be recorded. With the input of this date the existing data will be deleted automatically. The following warning will be displayed before the data are deleted:

```
When you enter the silo date, the fields
- consumption
- costs
will be deleted.
Continue? (Y/N)
```

If you want to delete the data, enter Y

17.22 Consumption silo A/B

Here, the amount is recorded which was taken from the silo as from the entered date. However, the recorded amount is the quantity which was fed because consumption figures are only recorded there.

17.23 Costs silo A/B

The costs of the feed taken from the silo as from the entered date are recorded here on condition that the price per kg of feed was entered.

17.24 Daily feed ration

After the start of feeding, the sum of the daily feed ration (feed/day) of all sows is displayed here. The daily feed ration is calculated from the feed curve and the contents of the feed and is displayed in menu **SOWS FEED (SF)**. It is updated every day after the start of feeding corresponding to the course of the feed curve.

17.25 Daily feed rest amount

You may control here, how much feed still is to be fed during the current feeding period. On the start of feeding, the daily feed ration and the daily feed rest amount are the same if only one feeding time with 100% of the daily ration has been programmed. During feeding, the value of the feed rest amount is continuously reduced.

If there are several feeding times, only the programmed part of the feed rest amount is indicated. With every new start of feeding, the new feed amount is added to the feed rest amount.

17.26 Minimum mixing amount

The feed amount displayed at the mixing times in menu **MIXING / FEEDING TIMES (FE)** is the amount which has been calculated for the first mixing time resp. on the start of feeding. If the amount changes because new animals are housed or animals are moved out, this will not be displayed in menu **MIXING / FEEDING TIMES (FE)**. The daily feed rest amount is only indicated in menu **PROCESS VARIABLES (PV)**. If the daily feed rest amount is smaller than the amount indicated at the mixing time, the daily feed rest amount will be mixed. If the daily feed rest amount = 0, nothing will be mixed.

The feed rest amount will only be mixed if it is larger than the minimum mixing amount.

17.27 Maximum mixing amount

The maximum mixing amount normally determines the size of the external mixer. If the ordered mixing amount is larger than the maximum mixing amount, only the maximum mixing amount will be mixed and pumped into the storage tank of the feeding-on-demand system. At the same time, the message "ORDER > MAXIMUM" will appear. Now the lacking feed amount must be mixed in addition, possibly by an additional start of mixing.

17.28 Maximum rest amount

The maximum rest amount must be entered here which can be in the external mixer for the feeding-on-demand system (liquid feeding) when mixing starts. If the amount is larger, the alarm message "MIXING TANK CONTENT > MAX. REST AMOUNT" will appear and the status message "WAITING FOR DATA FROM MIXER" and the feeding-on-demand system will wait for the correct scale value. During this time, feeding will not continue. As soon as the value on the scale of the mixer is smaller than the max. admissible value, external mixing and feeding at the feeding-on-demand system will be restarted automatically.

18 FUNCTION MENU (FM)

This menu allows for allocation of data to whole groups and / or stations.



The individual operations are not carried out until the feeding is finished.
In the STOP status the operations are carried out immediately.

DATE: TH 18.03.04 TIME: 11.29

FUNCTION MENU
P560-99-D-05.03.04

FA set station/group on/of feeding
FB selection of station/group
FC give station/group a new curve no.
FD give station/group a new mix no.
FE give station/group a new station/group no.
FF print all alarm-sows on display
FG MIT-99 error message

STATUS: STOP

18.1 Set station/group on/of feeding

After selection of set station/group on/of feeding, the following window appears:

```

DATE: TH 18.03.04  TIME: 12.05

FUNCTION MENU
P560-99-GB-05.03.04

FA set station/gr+-----+
FB selection of st|         |
FC give station/gr|stations-no.    | 1|
FD give station/gr|group-no.      | 1|
FE give station/gr|         |
FF print all alarm|to/from feeding|  on |
FG MIT-99 error m+-----+

#:mark all  F9:execute  ESC:discontinue and back to function menu
STATUS: STOP

```

It is possible to include / exclude a certain group and / or station from the feeding-on-demand. In order to carry out this operation you have to enter the respective group no. and / or station no. If you enter the # symbol instead of the group no., all groups of the respective station are selected. The same applies for the station no.

To carry out the operation, push the F9 key and confirm the safety inquiry with Y.

```

DATE: TH 18.03.04  TIME: 12.05

FUNCTION MENU
P560-99-GB-05.03.04

FA set station/gr+-----+
FB selection of st|         |
FC give station/gr|stations-no.    | 1|
FD give station/gr|group-no.      | 1|
FE G+-----+
FF p| this operation simultaneously changes the data of many sow |
FG M| Do you want to start this function?  (Y/N):                |
    +-----+

#:mark all  F9:execute  ESC:discontinue and back to function menu
STATUS: STOP

```

If the operation has been carried out successfully, the following message appears:

```

DATE: TH 18.03.04  TIME: 12.05

FUNCTION MENU
P560-99-GB-05.03.04

FA set station/gr+-----+
FB selection of st|
FC give station/gr|stations-no.      1|
FD give station/gr|group-no.         1|
FE give +-----+|r.
FF print|the operation has been executed  | on |
FG MIT-9+-----+

#:mark all  F9:execute  ESC:discontinue and back to function menu
STATUS: STOP

```

The respective sows should now have a listing in the **SOW CALENDAR (CA)** station yes/no.

18.2 Selection of station/group

Choose this function to select all sows of a group and / or station. In addition, you can choose the type of selection. The possibilities are:

```

: No
1: Selection
2: Colour
3: Selection + Colour

```

18.3 Give station/group a new curve no.

This function serves to assign a new curve number to all sows of one group and / or station.

18.4 Give station/group a new mix no.

This function serves to assign a new mix number to all sows of one group or station.

18.5 Give station/group a new station/group no.

This function serves to assign a new number to a station and / or group.

18.6 Print all alarm-sows on display

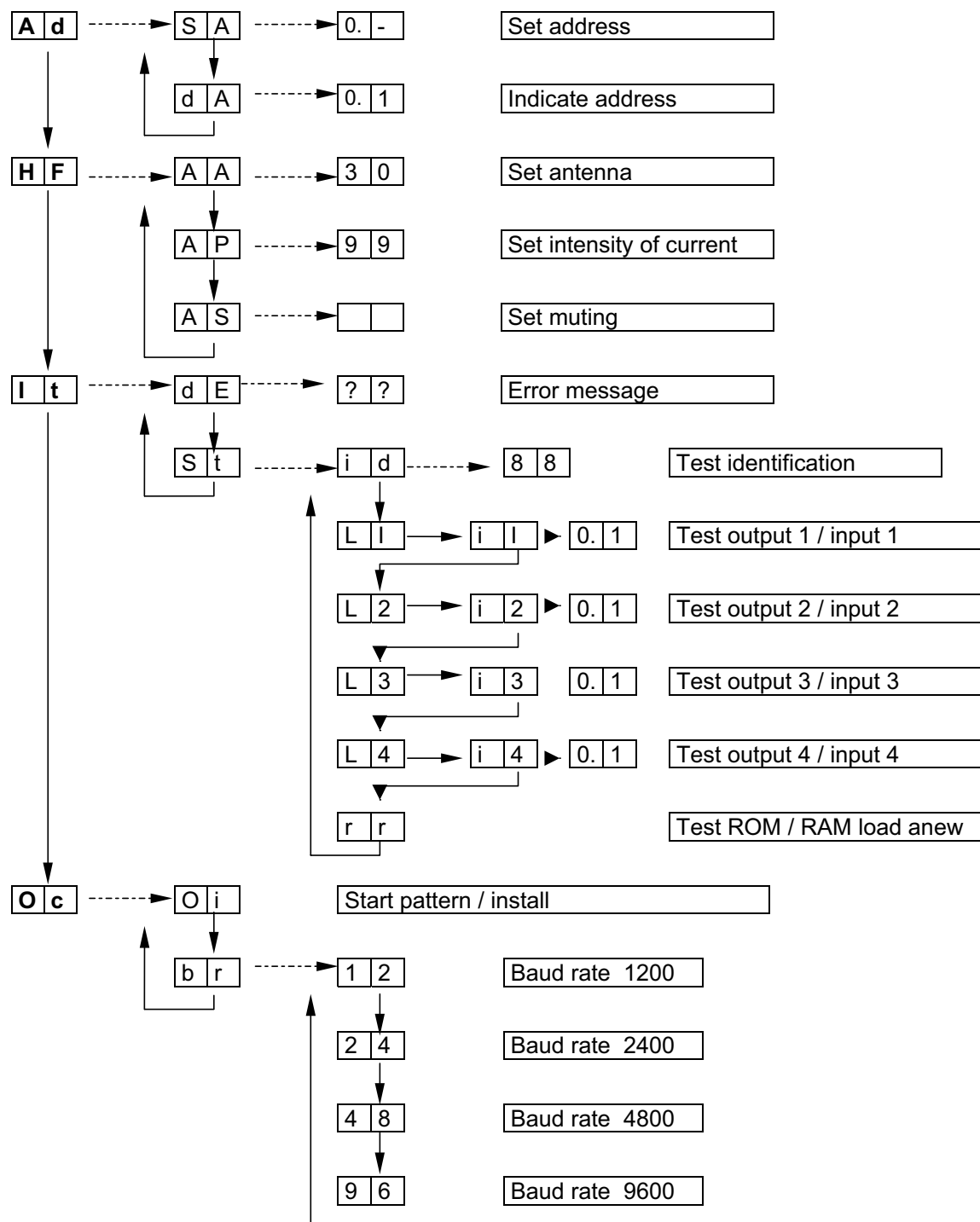
This function serves to display all alarm-sows on the screen.

18.7 MIT-99 error message

If the hand-held terminal MIT-99 is used, this menu records messages that refer to the data transfer.

19 Settings transmit/receive card

19.1 Survey display



19.2 Notes regarding settings

In general:

The MENU key allows all settings at the transmit/receive card.

Short pressing of the key allows vertical scrolling of inputs. Keeping the key down until the display flashes allows horizontal scrolling of all inputs.

A setting is retrieved if the key is pressed after setting until the display is flashing.

If everything is connected and set correctly, but an output has not been defined, the display shows 6.0. The other information has the following meaning:

6.	0	No output active
6.	1	Output No. 1 active
6.	2	Output No. 2 active
6.	3	Output No. 1+2 active
6.	4	Output No. 3 active
6.	5	Output No. 1+3 active
6.	6	Output No. 2+3 active
6.	7	Output No. 4 active
6.	8	Output No. 1+4 active

etc.

Set adress:

The address section is 0 - 15, i.e. station 1 has the address 0.0.

Select tens digits - The display shows the figures 0 - 1

Select units digits - The display shows the figures 0 - 9

The figures are displayed one after the other by pressing the MENU key shortly. If the selected figure is supposed to be retrieved, keep the MENU key pressed until the display flashes.

Set antenna:

The antenna is set by means of the potentiometer P1 and the condensator Ct.

Set to 30 with P1 and afterwards with Ct to max. value but not higher than 95. Keep MENU key pressed until the display flashes.

Set intensity of current:

Set the value with potentiometer P1 until the display flashes. Adjust value until it is right before flashing. The max. value is 99.

Test identification

The last two digits of the transponder number connected to the antenna are indicated.

Test output 1-4 (L1-L4)

Keeping key pressed until display is flashing = Output is switched on

Short pressing of key = Output is switched off

The display remains unchanged.

Test output 1-4 (i1-i4)

Keeping key pressed until display is flashing = The selected input is now checked.

Short pressing of key = The selected input is not checked.

If the input is active, 0.0 is displayed.

Start pattern

If the key is pressed until the display is flashing, all 4 outputs are automatically switched on and off shortly one after the other. This test is carried out automatically, when an EPROM is replaced.

19.2.1 Set Baud rate

Short pressing of the key starts scrolling through the different possibilities. If the value to be retrieved is reached, keep the key pressed until the display is flashing.

The Baud rate entered here has to match with the Baud rate in the MC99.

In connection with the 560-99-D program, the Baud rate can be set in the MC99 at Cur. Loop (see below).

MC99 Operating System									
17 Sep 2003			*** Setup Menu ***				09:29		
*** TIME k DATE ***			Hour	Min	Sec	Year	Month	Day	>
9 : 29 : 2			2000 / 9 / 17						
*** APPLICATION MODULE OFFSET ***			Module output buffer = 2						
Appl:	1	2	3	4	5	6	7		
In	0 - 0	0 - 0	1 - 40	1 - 40	1 - 40	0 - 0	0 - 0		
Out	0 - 0	0 - 0	1 - 40	1 - 40	1 - 40	0 - 0	0 - 0		
*** COMMUNICATION PARAMETERS ***						O.S. start Device:			
Port	(Dev. no)	Baud	/ Bits	/ Stopbits	/ Parity	Console		Printer	
Cur. Loop	(237)	1200	7	2	Even	238		238	
RS232	(238)	19200	8	2	None	Masters		Device No.	
RS485	(1-236)	115200	9	2	None	40		3	
*** AD k SCALE PARAMETERS ***									
Input:	Gain(HW):	Offset(HW):		Gain(SW):	Offset(SW):				
TEMP:				160000	20000				
AUX :				80000	20000				
CELL:	16 (0.2 mV/V)	67		35338	1600				
Q = Quit									
Enter +, - or Number (0-23)									



In connection with the 1100-99-D program, only a Baud rate of 1200 can be used.

20 Alarm Messages and Trouble Shooting

ALARM: 5 AN OVERLOAD RELAY HAS RELEASED

Explanation: Input Pos. 2 in RI menu is active (On). A rotary current motor (agitator, feed pump, etc.) has released an overload relay.

Cause:

- motor overloaded
- overload relay adjusted to small
- failure of one phase
- defective fuse

To eliminate:

1. Check the above cause possibilities and remove the error
2. Cancel the alarm by pressing:  **AL <ENTER>**

ALARM: 6 EMERGENCY STOP IS PRESSED

Explanation: Input Pos. 9 in the RI menu is passive (Off).

Cause:

- Emergency stop switch has been pressed
- Hand-/automatic switch is on "hand" (manual) position
- Fuse F2 or F4 of the power supply is defective
- Rectifier V2 of the power supply is defective
- Wiring to entry Pos. 9 is interrupted

To eliminate:

1. Check the above cause possibilities and remove the error
2. Cancel the alarm by pressing:  **AL <ENTER>**

ALARM: 7 PLC STOPPED

Explanation: With the PLC program, a standard element of every MC99 computer, you are able to program additional software functions, which are superior to the actual feeding program. PLC programming steps can be entered and altered at any time. When you have concluded programming, you must restart the PLC program!

Cause:

- The PLC program has not been started or has been stopped !

To eliminate: To restart the PLC-program with the help of the operating system:

1.  <CTRL> +O (press CTRL and O simultaneously)
2.  O S <ENTER> (open "MC 99 Operating-System")
3.  1 L I <ENTER> (open PLC-Console)
4.  R U <ENTER> (stop program)
5.  R A 8888 (switch to RAM-Memory)
6.  R U <ENTER> (stop program)
7.  C O <ENTER> (compile program)
8.  R U 1 <ENTER> (start program)
9.  <CTRL> + O (return to MC 99 operating system)
10.  O S <ENTER>
11.  enter the respective number of the terminal program to return to the main menu on the MC99.

ALARM: 10 AIR PRESSURE FAILURE

- Cause:**
- Input Pos. 1 in RI menu is passive (Off).
 - the compressor is turned off
 - compressor defective
 - pressure switch has been set incorrectly or is defective
 - air pressure sensor has been set incorrectly or is defective
 - defective compressed air piping
 - defective metering valve in liquid feeding system

- To eliminate:**
1. Check the above cause possibilities and remove the error
 2. Cancel the alarm by pressing:  **AL <ENTER>**

ALARM: 11 POWER FAILURE

Explanation: A power failure, which lasts longer than 10 seconds.

- To eliminate:**
1. Cancel the alarm by pressing:  **AL <ENTER>**

ALARM: 12 STORAGE TANK A EMPTY

Explanation: Input Pos. 3 in RI menu is passive (Off) upon start of feeding.
Attention: During feeding, an alarm message will no be indicated.

Cause:

- Storage tank A empty
- minimum sensor storage tank A defective
- cable to minimum sensor storage tank A defective

To eliminate:

1. Check the above cause possibilities and remove the error
2. Cancel the alarm by pressing:  **AL <ENTER>**

ALARM: 14 SHORT CIRCUIT AT VALVE

Cause:

- Current survey (1 ampere) to the feed valve has released
- short-circuit in the valve circuit
- short-circuit in the valve

To eliminate:

1. Check the above cause possibilities and remove the error
2. Cancel the alarm by pressing:  **AL <ENTER>**

ALARM: 15 INTERNAL ERROR (WATCH DOG)

Explanation: System survey has released

Cause:

- computer defective
- error in software

To eliminate:

1. Press Reset button on the MC 99 main board
2. Cancel the alarm by pressing:  **AL <ENTER>**
3. If this alarm keeps recurring call Big Dutchman customer service:

Tel:+49-04447-801-0 (Big Dutchman)

ALARM: 16 NO FILLING OF STORAGE TANK

Explanation: When the mixture for feeding-on-demand has been prepared by the external mixing computer, the mixing computer sends a message to the feeding-on-demand computer, which in turn pumps the mixture into the storage tank of the feeding-on-demand system. For this, the scale of the liquid feeding system is checked at regular intervals. If the weight on the scale of the mixing computer does not change within the security time entered in the SYSTEM VARIABLES menu of feeding-on-demand, this causes the alarm code ALARM: NO FILLING OF STORAGE TANK.

Cause:

- pipe obstructed
- defective pump
- defective valve
- defective sensor

To eliminate:

1. Check the above cause possibilities and remove the error
2. Cancel the alarm by pressing:  **AL <ENTER>**

ALARM: 21 NO COMMUNICATION WITH EXTERN. COMPUTER

Explanation: In a feeding-on-demand system with liquid feed it is required to use an external computer for mixing the feed. The feeding-on-demand system orders liquid feed from the external computer and requests it as soon as it is ready. This requires communication between the two computers. If communication is disturbed, this alarm message will appear.

Cause:

- Computer address has not been entered correctly (external computer No., external application No.)
- no electrical connection

To eliminate:

1. Check the above cause possibilities and remove the error
2. Cancel the alarm by pressing:  **AL <ENTER>**

ALARM: 22 INTERNAL ERROR OUTPUT TAB NO.

Explanation: In the RU menu, all relay outputs required for feeding can be defined freely. If a required relay output has not been defined this error message arises with the additional information at which position no output has been defined.

To eliminate:

1. Select the RU menu by entering RU C and define the output at the position indicated in the alarm message.
2. Cancel the alarm by pressing:  **AL <ENTER>**

ALARM: 23 INTERNAL ERROR OUTPUT TAB VALVE

Explanation: No outputs for feed valves are predetermined on a valve card in case of a feeding-on-demand system (liquid feed) in the menu RV.

To eliminate:

1. Select the RV menu and enter the valve card no. in the column 10 and 1 OFFSET (in most cases 02).
2. Cancel the alarm by pressing:  **AL <ENTER>**

ALARM: 24 INTERNAL ERROR I/O BUS

Explanation: It is possible to survey the bus connection to the MC 99 at entries pos. 39 and 40 up to the last connected module (relay or valve card). There is an active survey (Hi) pos. 39 as well as a passive survey (Low) pos. 40. Both entries can also be used simultaneously.

If e.g. entry pos. 39 is passive, i.e. the light diode is turned off because e.g. a bus cable is defective, error message 24, INTERNAL ERRO I/O BUS 1 is prompted. The same error message is prompted if entry pos. 40 is active.

- To eliminate:**
1. Check the above cause possibilities and remove the error
 2. Cancel the alarm by pressing:  **AL <ENTER>**

ALARM: 25 INTERNAL ERROR INPUT TAB

Explanation: It is possible to freely define all entries required for feeding in the RI menu. If a required entry has not been defined, this error message will appear with the additional information at which position no entry has been defined.

- To eliminate:**
1. Select the RI menu by entering RI C and define the entry at the position indicated in the alarm message.
 2. Cancel the alarm by pressing:  **AL <ENTER>**

ALARM: 27 NO EMPTYING OF STORAGE TANK

Explanation: When the first mixing time is reached, the agitator in the storage tank starts and after expiration of the agitating time, the storage tank is emptied completely, until the sensor in the storage tank turns passive. If no emptying takes place within the entered security time, i.e. the sensor in the storage tank is not released due to a trouble in the system, the error message ALARM: NO EMPTYING is prompted.

Cause:

- pipe obstructed
- pump defective
- valve defective
- sensor defective

To eliminate:

1. Check the above cause possibilities and remove the error
2. Cancel the alarm by pressing:  **AL <ENTER>**

ALARM: 28 DEFECTIVE TANK CLEANING, TANK

Explanation: If during transfer of remaining feed from the storage tank to the mixing tank the sensor of the storage tank gets bare, the storage tank cleaning system starts, the agitator stops, but the feed pump stays switched on. The quantity is checked on the scale of the liquid feeding system and considered upon mixing. If no change in weight on the scale is stated during the security time entered in the menu SYSTEM VARIABLES (SV) menu, error message ALARM: TANK CLEANING is prompted.

Cause:

- pipe obstructed
- pump defective
- valve defective
- water valve defective

To eliminate:

1. Check the above cause possibilities and remove the error
2. Cancel the alarm by pressing:  **AL <ENTER>**

ALARM: 31 % ERROR FEEDING TIME

Cause:

- In the menu **MIXING / FEEDING TIMES (FE)** , the sharing of the daily ration does not equal 100 % at feeding times.

To eliminate:

1. Correctly enter percentage values for the daily ration
2. Cancel the alarm by pressing:  **AL <ENTER>**

ALARM: 32 NO MIX NO. FEEDING TIME

Cause:

- In the menu **MIXING / FEEDING TIMES (FE)** there is not the ration (mix no.) entered at feeding times which is required for feeding. The error message is prompted with delay.

To eliminate:

1. Enter mix no.
2. Cancel the alarm by pressing:  **AL <ENTER>**

ALARM: 34 WRONG MIX NO. IN EXTERNAL MIXER

Cause:

- Wrong mix no. in external mixer

To eliminate:

1. check mix no. in external mixer
2. Cancel the alarm by pressing:  **AL <ENTER>**

ALARM: 36 STORAGE TANK B EMPTY

Explanation: Input Pos. 4 in RI menu is passive (Off) upon start of feeding.
Attention: There will be no alarm message during feeding.

Cause:

- Storage tank B empty
- minimum sensor storage tank B defective
- cable to minimum sensor storage tank B defective

To eliminate:

1. Check the above cause possibilities and remove the error
2. Cancel the alarm by pressing:  **AL <ENTER>**

MESSAGE CODES 128 - 138

All message codes are only an information, they do not interrupt feeding!

ALARM: 128 ORDER < MINIMUM

Cause:

- The calculated mixing quantity or the daily feed rest amount is smaller than the min. possible mixing quantity entered in the **PROCESS VARIABLES (PV)** menu. Mixing did not take place.

To eliminate:

1. Reduce number of mixing times
2. Check mixing ratio in mixing computer
3. Check number of sows at the feeding-on-demand system
4. Cancel the alarm by pressing:  **AL <ENTER>**

ALARM: 129 ORDER > MAXIMUM

Cause:

- The calculated mixing quantity or the daily feed rest amount is larger than the max. admissible mixing quantity entered in the **PROCESS VARIABLES (PV)** menu. Only the max. mixing quantity was mixed.

To eliminate:

1. Raise number of mixing times
2. Check mixing ratio in mixing computer
3. Check number of sows
4. Cancel the alarm by pressing:  **AL <ENTER>**

ALARM: 130 COMPONENT ALMOST EMPTY

Cause:

- The current silo content for dry feeding has fallen below the minimum point level.

To eliminate:

1. Change minimum value in menu **PROCESS VARIABLES (PV)**
2. refill silo
3. As soon as the actual content (weight) rises above the specified minimum content, the alarm will stop automatically.

ALARM: 131 SOW NOT ENTERED

Cause:

- A sow has been identified for which no inputs have been made (mix no., transponder no., etc.).

To eliminate:

1. Call menu **HOUSING (HO)**, and enter the transponder no. displayed at the alarm message. If this sow is to be fed by the feeding-on-system, missing inputs must be added.

ALARM: 132 DOUBLE TRANSPONDER NO.

Cause:

- One Transponder no. was entered twice. This message only appears after feeding is finished.

To eliminate:

1. Look for the transponder by means of the F5 key and delete the transponder at the PC by means of the DEL key.
2. Select the **HOUSING (HO)** menu and enter the transponder no. indicated in the alarm message. Note the sow no. indicated, select the **MOVING OUT (MO)** menu, enter the sow no. and then move the sow out.

ALARM: 133 SOW WITHOUT FEED

Cause:

- Not all inputs have been made (?). This is checked upon start of feeding by means of the time.

To eliminate:

1. Check in the **SOWS FEED (SF)** menu at the indicated sow number which inputs are missing and add the missing data.
2. Cancel the alarm by pressing:  **AL <ENTER>**

ALARM: 134 SILO EMPTY 1/2

Cause:

- Entry Pos. 7/8 (Silo 1 or 2) in RI menu is passive (Off).

To eliminate:

1. fill silo
2. check sensor in silo
3. check cabling to sensor

ALARM: 135 DOUBLE SOW NO.

Cause:

- Due to a system failure, one sow number was overwritten and this new number is now existing twice.

To eliminate:

1. Select the **MOVING OUT (MO)** menu, enter sow no. and then move the sow out.

ALARM: 136 SENSOR TROUGH EMPTYING

Explanation: If the feed rationer of the liquid feeding system was not emptied on the feeding station, since e.g. a valve was defective, the sensor in the feed rationer immediately gives a signal to the feeding computer, if the tank is supposed to be filled anew, i.e. the error message ALARM: SENSOR EMPTY TROUGH is prompted.

Cause:

- defective or dirty sensor.
- defective emptying valve

To eliminate:

1. Check the above cause possibilities and remove the error
2. Cancel the alarm by pressing:  **AL <ENTER>**

ALARM: 137 SENSOR TROUGH FILLING

Explanation: The liquid feeding system operates as follows:

- a) The valve output of the feeding station is activated, e.g. 0 and 00 (valve no. 0, station 1).
- b) The valve stays open until the entry pos. 5 or 6 is activated in the RI menu. If this input does not get active during the filling time, error message ALARM: SENSOR TROUGH FILLING is prompted.

Cause:

- defective or dirty sensor
- defective cable from sensor to computer
- defective input at computer or not correctly defined

To eliminate:

1. Check the above cause possibilities and remove the error
2. Cancel the alarm by pressing:  **AL <ENTER>**

ALARM: 138 MIXING TANK CONTENT > MAXM. REST AMOUNT

Explanation: The tank content of the external mixer of a feeding-on-demand system (liquid feed) is larger than the max. admissible value, programmed in the PV menu of the feeding-on-demand system. At the same time, the message: WAITING FOR DATA FROM MIXER is prompted, .i.e. the feeding-on-demand system waits for the correct scale value. During this time, feeding does not take place.

To eliminate:

1. As soon as the scale value of the mixer is smaller than the max. admissible value, external mixing and feeding from the feeding-on-demand system is started automatically. The soft alarm can be deleted by entering AL (TURN OFF ALARM) [ENTER].

21 Electrical spare parts

In the house

Code - Nr	spare part
65-00-3221	Charging pliers for ear button
65-00-3265	Ear button N cpl
65-00-3368	Female piece for transponder N
20-70-1013	Hand-terminal MIT-99 cpl for Callmatic 2
	consisting of:
91-02-3955	Hand-terminal MIT-99 for Callmatic
91-02-3956	Antenna for Hand-terminal MIT-99
91-02-3798	Battery charger with fixing device for MIT-99

At the station

Code - Nr	spare part
91-02-3782	Transmit-receive card VC4 E/A Single F2-4m with prom CTS3TPB
83-01-9469	Antenna coil compound-filled
83-01-6857	Inductive proximity switch M18x1 XS4-P18NA370L1
91-00-3865	Magnet limit switch MAK-2613-L-3
83-01-5886	Apparatus plug for MD-valve 2-pole max. 250V
65-00-3397	Proportioning auger w/motor N
83-01-5868	Valve segment 24V DC 5/2-ways MD 510 404

In the feeding computer

Code - Nr	spare part
91-02-3524	Interface 12 stations v0-1 Demand feeding
91-02-3372	Display-board MC99 fully equipped (for computer 91-02-3960)
91-02-3712	Display-board MC99 partly equipped (for computer 91-02-3715)
91-02-3799	CPU MC99 type 2 (CPU MC99 type 2)
91-02-3708	Keyboard for MC99-US
91-00-1377	Fuse 4,0A D5x20mm slow
91-00-2166	Overload release 2-pole B6A
91-02-3733	Transformer 230/18V 100VA 50/60Hz MC99

Symbols

! 41
% + - 34
% partition of daily ration 22
* 41
+ 41

A

abbreviation codes 6
Actual number of animals in selection pen 62
Agitating time 68
Alarm 13
Alarm Memory (AM) 14
Alarm sow 35
Amount / unit mix A/B 23
Antenna 72
Application No. 70
Average / litter 50

B

Baud rate 89
Boar No. 51, 55
Boar no. 46
BOAR RECOGNITION (BR) 56
Boar recognition number/duration 61
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