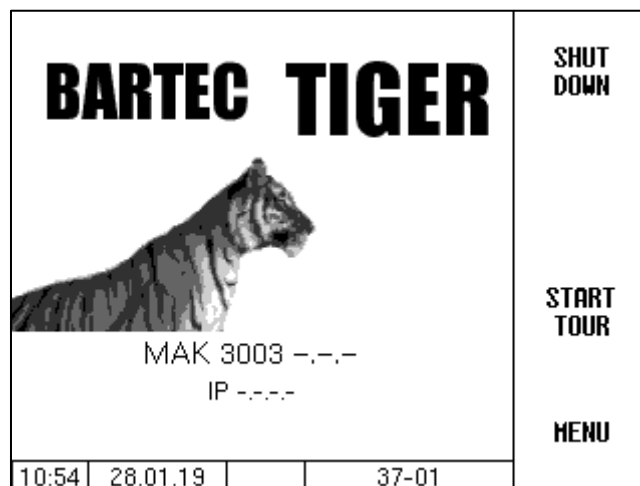


MAK 3003 Measuring system TIGER / LYNX

Operating Instructions



Software MAK 3003 2.35

BA 190130

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Warranty

Our “Terms & Conditions of Sale and Delivery” shall apply as a general principle.

These shall be available to the operator upon entering into the contract at the latest.

Claims may not be brought under the warranty or for liability in case of personal injury and property damage where attributable to one or more of the following root causes:

- ▶ Improper use of the product.
- ▶ Incorrect assembly, commissioning, operation and maintenance of the product.
- ▶ Failure to follow the instructions in the manual regarding transport, storage, assembly, commissioning, operation and maintenance.
- ▶ Unauthorised structural alterations to the product.
- ▶ Inadequate monitoring and inspection of parts which are subject to wear.
- ▶ Incorrectly executed repairs.
- ▶ Disasters caused by foreign objects and extraneous forces beyond all control.
- ▶ No liability shall be accepted for consequential damage as a general rule.

EU-Declaration of conformity

We BARTEC BENKE GmbH, Schulstraße 30, D-94239 Gotteszell, hereby declare, that this product is in compliance with the essential requirements of the relevant EU-directives.

The EU-Declaration of conformity for this product can be obtained from BARTEC BENKE GmbH, Schulstraße 30, D-94239 Gotteszell, info@bartec.com.

1 About this manual

The operating instructions are part of the product and must be kept in the immediate vicinity of the device. The personnel for assembly, operation and maintenance must have access to it at all times.

The operating instructions contain important notes, safety instructions and test certificates that are necessary for the correct functioning of the device during operation. The operating instructions are intended for all persons involved in the assembly, installation, commissioning and maintenance of the product.

The illustrations in this manual are intended to illustrate the information and descriptions. They cannot always be transferred unchanged and may differ slightly from the actual design of the device.

BARTEC GmbH reserves the right to make technical changes at any time. BARTEC GmbH is under no circumstances responsible or liable for any indirect or consequential damages resulting from the use, operation or application of this user manual.

Please read the operating instructions carefully before using the product.

Please note that the instructions must be kept by the user for the entire life of the product.

Signs and symbols

The following characters and symbols are used in this manual to highlight passages that need special attention.



Notes

This arrow indicates special features to be observed during operation.



Warning

This symbol draws your attention to passages that, if not followed or followed inaccurately, may result in damage to or destruction of parts of the system or loss of data.



Danger!

This symbol marks passages that, if not followed, endanger the health or life of humans.

Special notes that appear within the text are marked with a frame.

2 Safety Precautions

The system operator is responsible for all complying with all regulations applicable to the storage, transport and handling of the food product "milk".

All regulations and provisions remain in full force when operating the system with MAK devices.

MAK devices are built in compliance with applicable regulations and must leave the factory in perfect condition. The devices must be installed and serviced by qualified technicians.

- Make sure that the information and operating conditions listed by the manufacturer are followed.
- Follow the instructions on operating and servicing the devices.
- If you notice any damage or deterioration on parts of the system or if safe operation is not ensured for other reasons, do not start up the system or shut it off immediately. Notify your service point.
- You should also contact our service technicians if you notify malfunctions or defects during operation or have any doubts as to whether the devices are working properly.

The measuring system may only be operated for applications that are subject to legal metrological control in the respective EU member state if the nominal operating conditions specified in the EU-type examination certificate are met.

The controller software is constantly evolving. A different software version or configuration may cause the screen displays on your system to differ slightly from the illustrations in this document.

3 Basics

With the MAK 3003 system, all processes and operating steps required for the loading and unloading of milk collection and transport vehicles can be recorded and controlled.

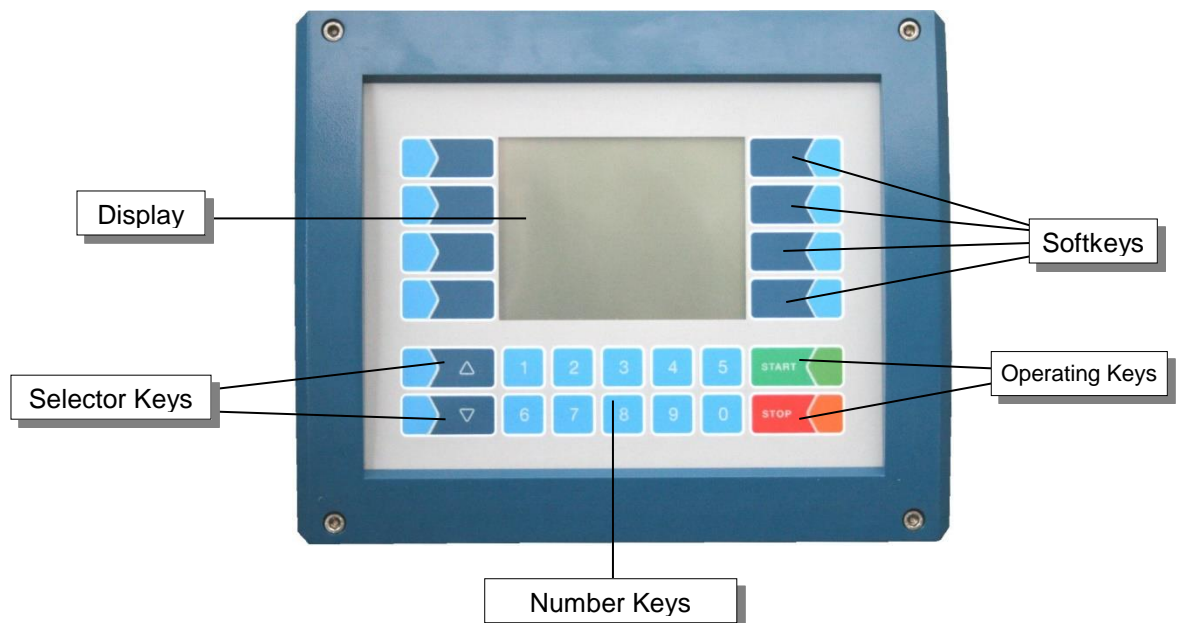
The TIGER 3003 version is used to control milk intake and record the data entered during that process.

The system is operated from the compact controller.

Switching on the system and operating the vehicle system depend on the specific vehicle type and the operating instructions applicable thereto.

3.1 Compact Controller

The compact controller is the main control and information unit for the whole system. Communication between the controller and other components in a system is handled via USB or, for P-NET devices, via P-NET.



3.1.1 Keypad

The system is operated using the touch-sensitive keys on the control unit (touch screen) (number keys, selector keys, soft keys and operating keys) and using the key functions which appear the display depending on the situation. The functions of the soft keys are controlled by the software based on the current operating status.

3.1.2 Display

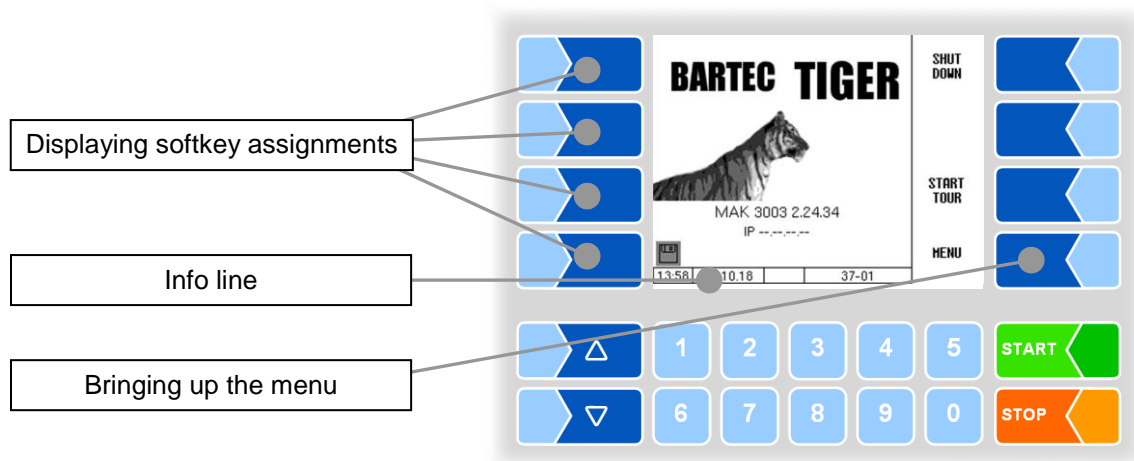
A graphic display screen which is designed as a touch screen is used to show all readouts. Thanks to the backlit transreflective liquid crystal technology used, the display can be easily read even in darkness or bright sunlight.

3.2 Operating Concept

3.2.1 The software user interface

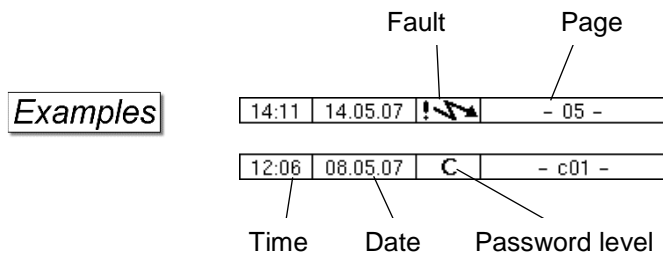
After starting the system, the main screen appears on the display. You can call up different screens or operating modes using the soft keys to the left and right of the display.

Corresponding to the installed measuring equipment type (TIGER, LYNX HLW, ABO Magyar, V3003, Optimate, ROMEX, V plus or E-TIGER) differ the start screen and the main menu.



3.2.2 Info line

The info line shows the date and time, information about the operating status and the software page number.



3.2.3 Softkeys

The softkeys can be assigned various functions, the current meaning of which is indicated by symbols.

All keys are touch-sensitive, meaning that you don't need to press them but simply have to touch them.

3.2.4 Hidden softkeys

In various operating situations, the current assignment of soft keys is not shown on the display. In such instances, the keys to the left or right of the display will not be marked. In this case, you have to touch any soft key in this row of keys. The current assignment of the soft keys will be shown for three seconds. During this time, you can touch one of the soft keys to start the function in question.

Examples

The examples illustrate the hidden softkey feature in three different screens:

- BARTEC TIGER:** A hand touches the left arrow softkey. This action calls up the event screen.
- TEC TIGER:** A hand touches the left arrow softkey. This action shows data from the last tour.
- Location Info Database:** A hand touches the right arrow softkey. This action reveals the current assignment of the softkeys in that row.

Call up event screen

Show data from the last tour

4 Overview of functions

The operating sequence and scope during the round of sampling depend on the respective equipment and the configuration of the software. All functions that are available during and outside of a tour are described below. The actual operating sequence results from the differing combinations of the individual functions. The following illustrations may therefore deviate from the displays.

Tour start and tour end

A tour must be started in order to be able to perform intake or discharge processes. For the tours, default data may be available that contain all the necessary information.

The tour can also be started without default data. All data must be entered manually (chapter 5).

Enter supplier number

The data of all intake or discharge processes are recorded and can be uniquely assigned to each supplier. For this reason, a supplier number must be entered before each process. The numbers can be recorded in different ways (chapter 6).

Milk intake

The actual milk intake at the supplier takes place when all the necessary data have been entered and recorded (chapter 7).

Sampling

Samples can be taken from the collected milk in different ways and filled (chapter 8).

Tank segment monitoring

The filling level of the tank segments and the filling sequence can be monitored and displayed (chapter 9).

Raw milk separation

During intake, the milk can be filled into separate tank segments according to its quality. Qualities from 1 (good) to 8 (bad) are possible (chapter 10)

Data transfer

The recorded data are transferred via an Internet connection using the configured FTP server (see chapter 11).

Special functions in the tour

During the tour, various functions are available via the tour menu (e.g., activation or deactivation of functions, discharge and transfer processes, cleaning) (chapter 12).

Shortcut keys

During the tour, you can call up various displays directly using one-touch keys (chapter 13).

Functions outside the tour

Various control and service functions can be called up in the main menu (chapter 14).

5 Tour start and tour end

5.1 Switching on the system

Switch on the system according to the installation on the vehicle (usually a separate switch).

When the system is switched on, the controller executes a start-up program. The start screen is then shown on the display.

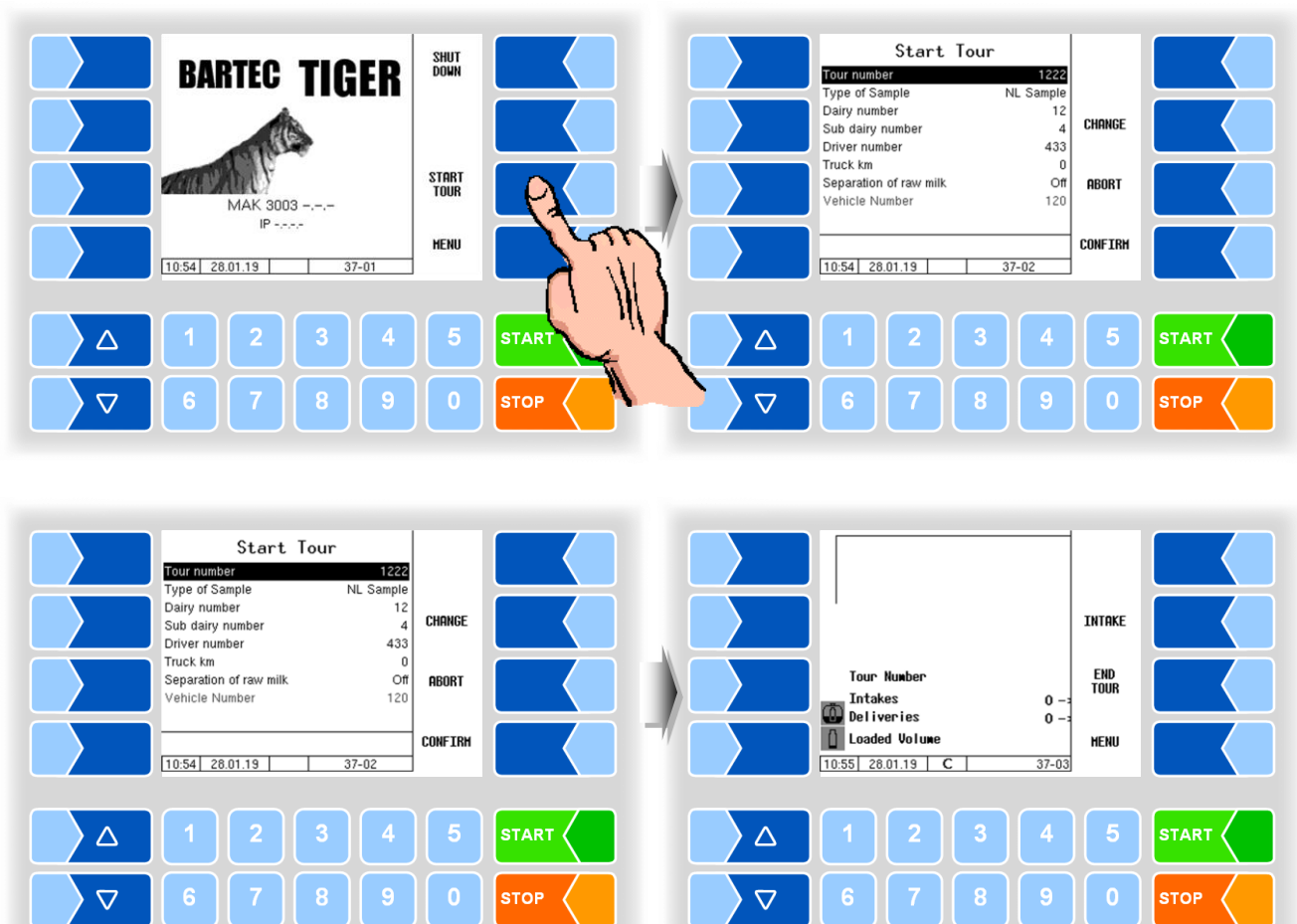
5.2 Manual tour start

With the described software version, the tour is started only manually.

- Touch the soft key **START TOUR**.
- In the following window, enter the details for the current tour or check the details and change them if necessary.

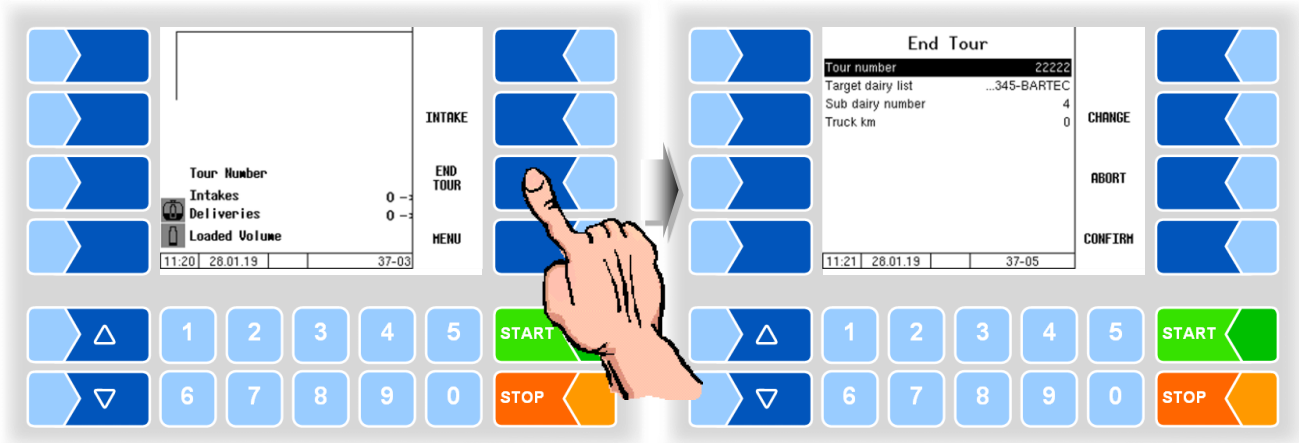
Entering of the driver number depends on the configuration. If input is requested, it can be done manually or by tag reader.

The entered data are stored in the database and displayed again the next time the tour starts.



5.3 Ending the tour

- To end the current tour, touch the soft key **END TOUR**.
- Then enter the number of the destination dairy and the current mileage.



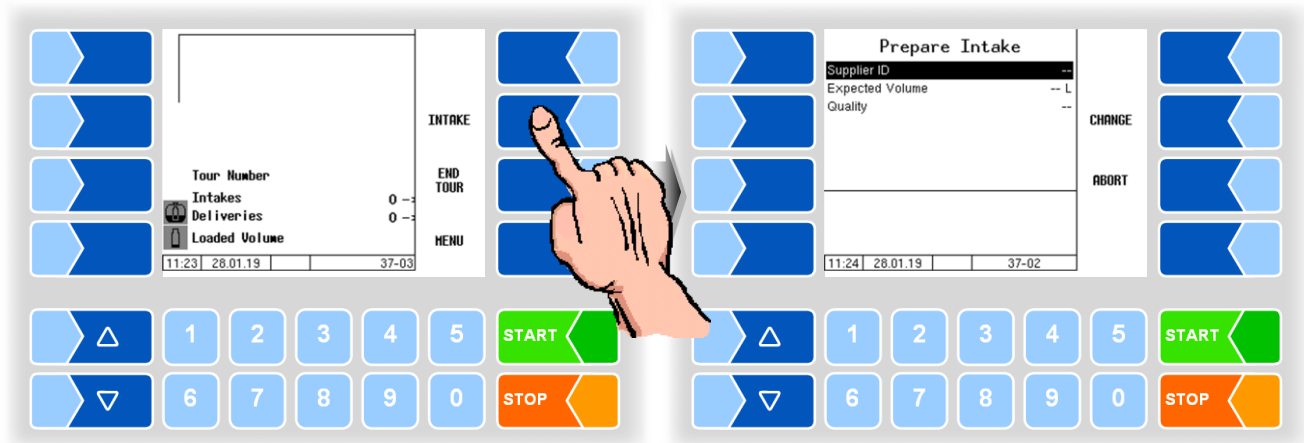
- Confirm the entries with the soft key **CONFIRM**; the "Tour log record" is printed.

6 Enter supplier number

To perform an intake, a supplier number must be entered.

6.1 Manual input

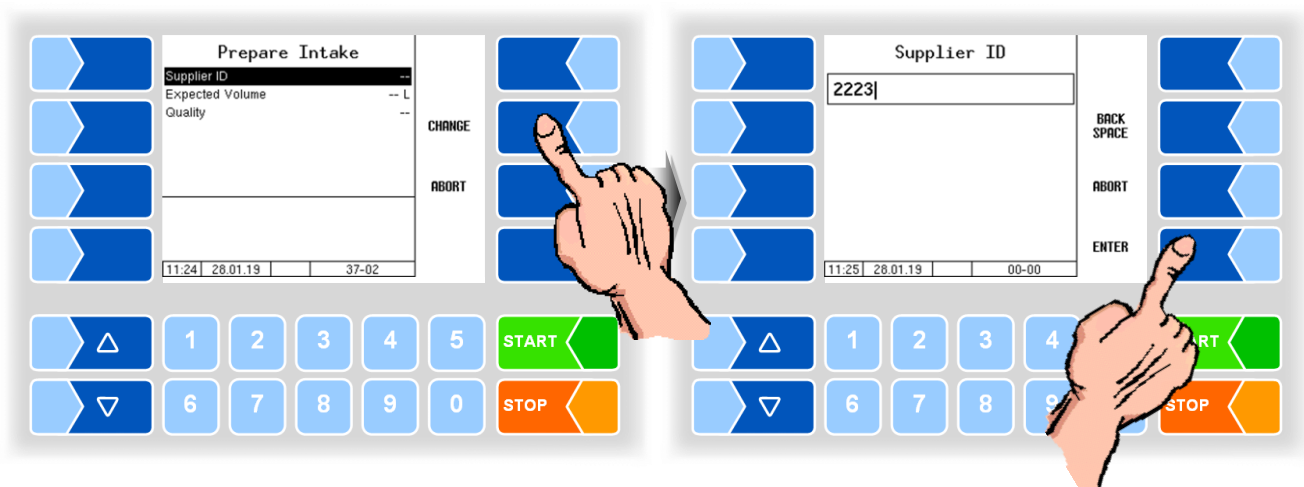
- Touch the soft key **INTAKE**.
The window for entering the intake data opens.



- If the "Supplier ID" line is selected, touch the soft key **CHANGE** or enter the number directly using the numeric keys.
The window for entering the supplier number opens. Enter the supplier number there.

You can use the **BACK SPACE** soft key to delete the character to the left of the cursor.

- Confirm the number.



6.2 Supplier recording with GPS

If the vehicle stops at a position within a tour for which supplier data are stored in the database, these data are automatically displayed.

The requirement for this is that an intake has already been carried out at this location with the corresponding supplier number. The supplier number must be manually input once (see section 6.1). It is then automatically saved and assigned to the location.

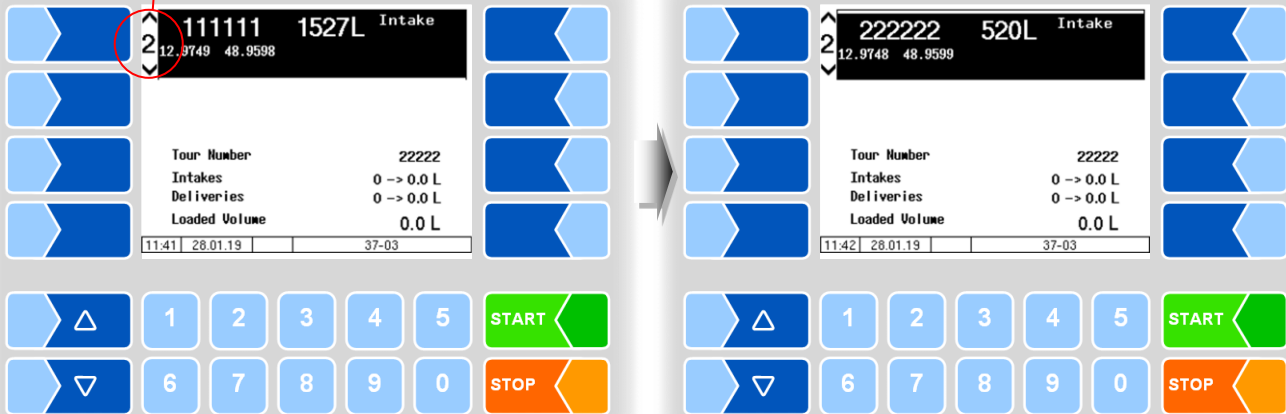
1 supplier found



Supplier selection

If several suppliers are stored under one location, you can use the selection keys on the controller to select a supplier.

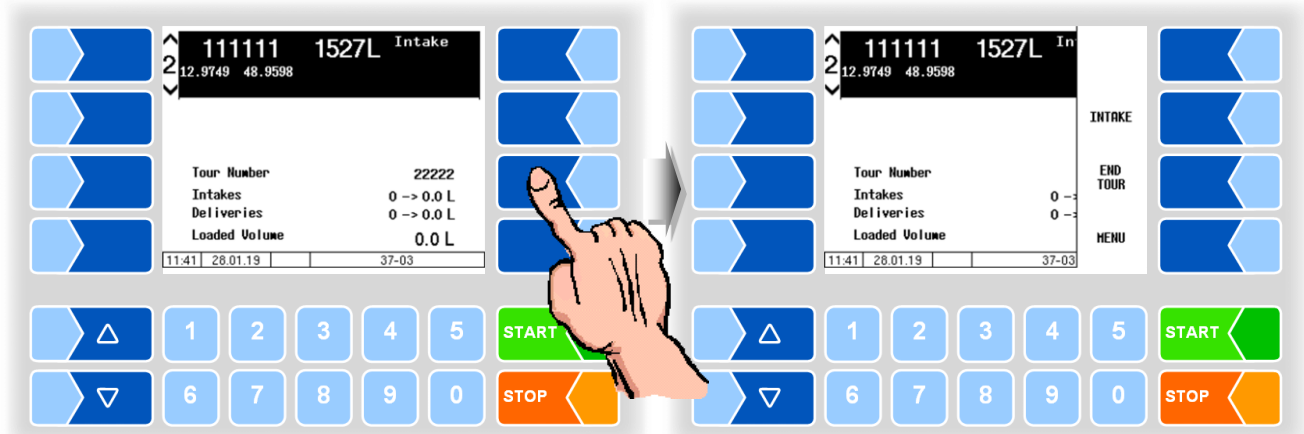
2 suppliers found



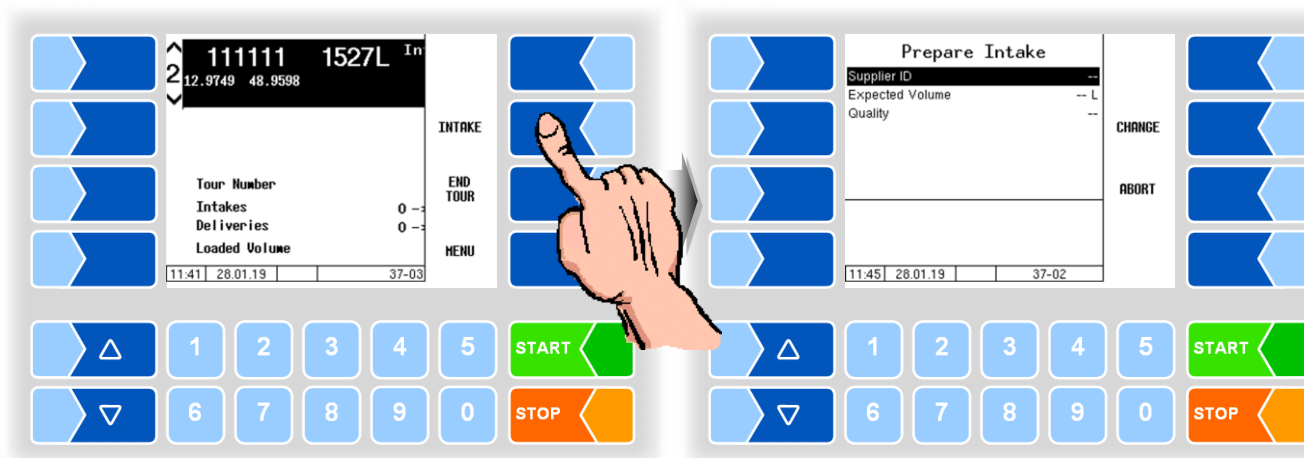
New supplier

If the intake is not to take place at any of the suppliers displayed, and instead a new supplier is to be entered under the current position, you must first enter this supplier manually.

- Touch one of the soft keys to the right of the display to display the hidden softkeys.



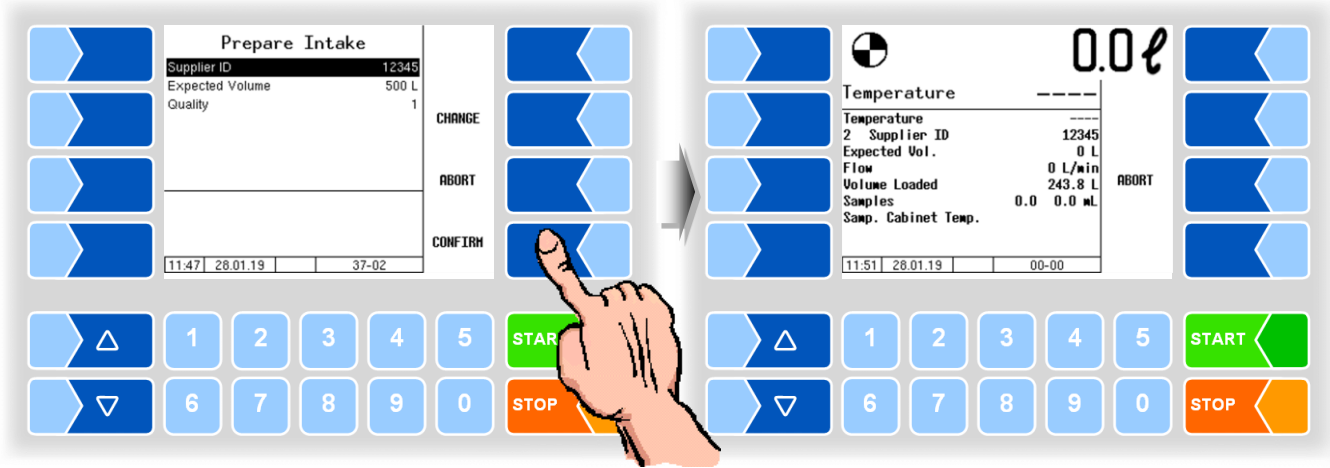
- Then touch the **INTAKE** soft key.



- Enter the supplier number (see section 6.1).

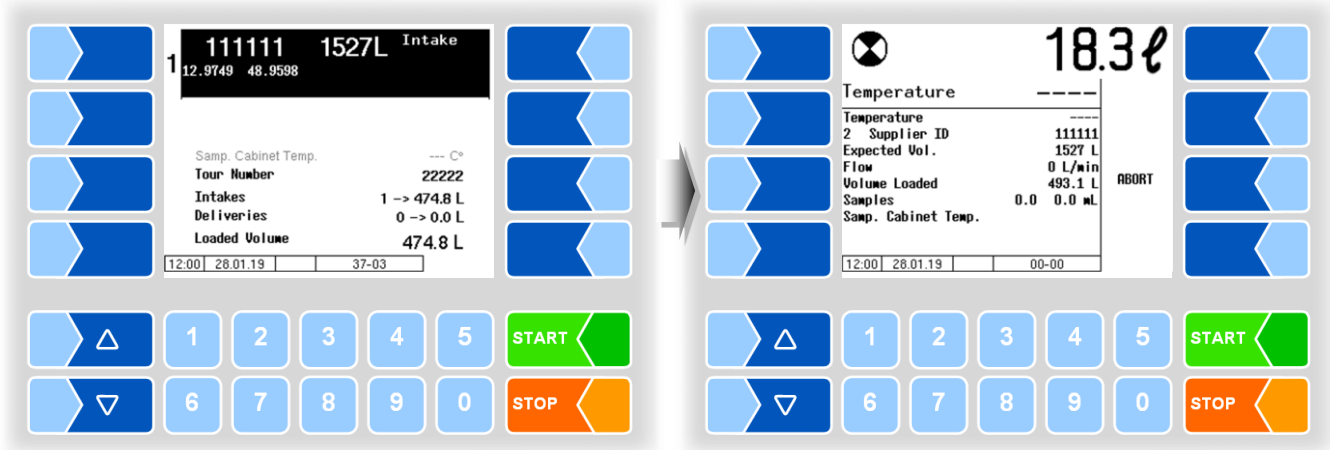
7 Milk intake

After confirming the manually entered supplier number, or after displaying a supplier number from the database, you can start the intake.



- Touch the **START** button on the controller or press the start button on the remote control.

The milk intake starts and the measured data are shown on the display.



If there is no more milk flow, the pump switches off.

The intake can be ended in different ways depending on the configuration:

Manual: The intake is ended manually by the driver (**INTAKE END** soft key or Finished button on the remote control).

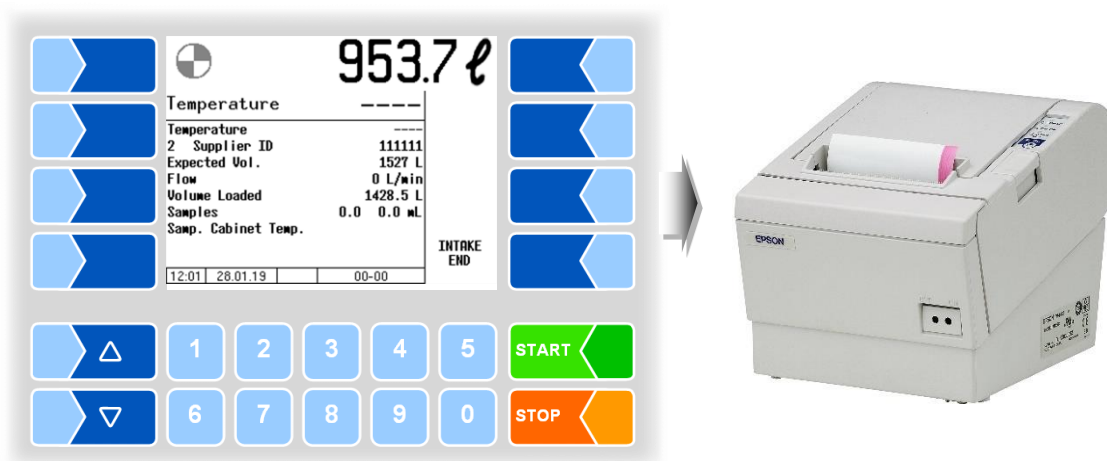
GPS Speed The intake is automatically ended via the measured speed (termination also possible via the Finished button).

PTO signal The intake is ended by switching off the power-take-off (important: Only possible if signal is connected).

Automatic end

For the types "Optimate" and "V 6000", automatic ending can be configured (Process Controlling/ Pumping settings/Auto ending: *On*).

The soft key **INTAKE END** or Finished button on the remote control do not have to be pressed even when manually terminated.



After finishing the intake, the intake record is printed.

You can stop the intake at any time with the button **STOP** on the controller or the remote control.



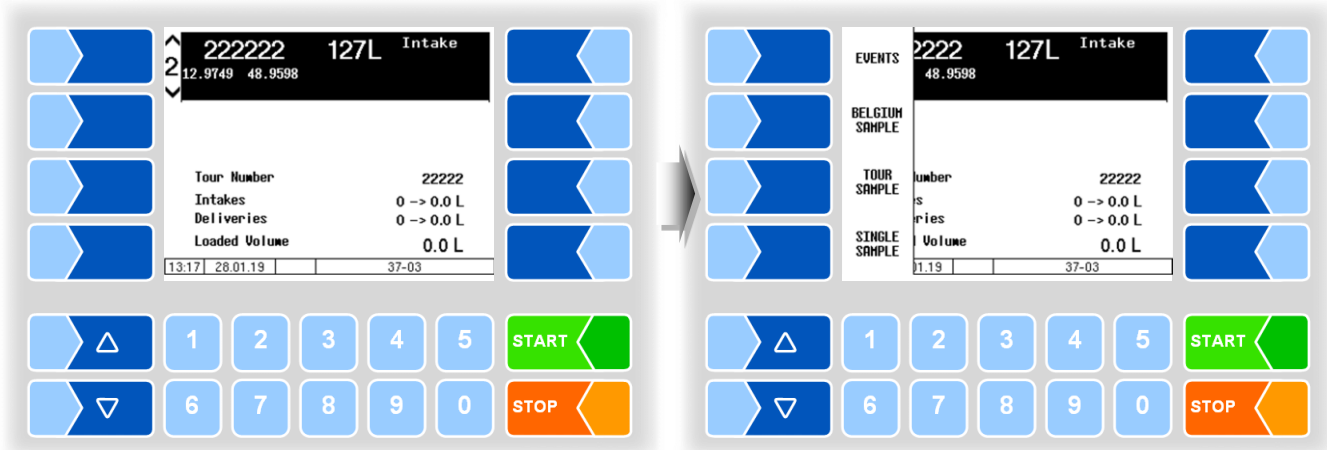
If the pump switches off because the milk flow has been interrupted for a short time, you can restart it by pressing the **START** button.

For further intakes, the supplier number must be entered again in each case. Afterwards, the intake can take place as described.

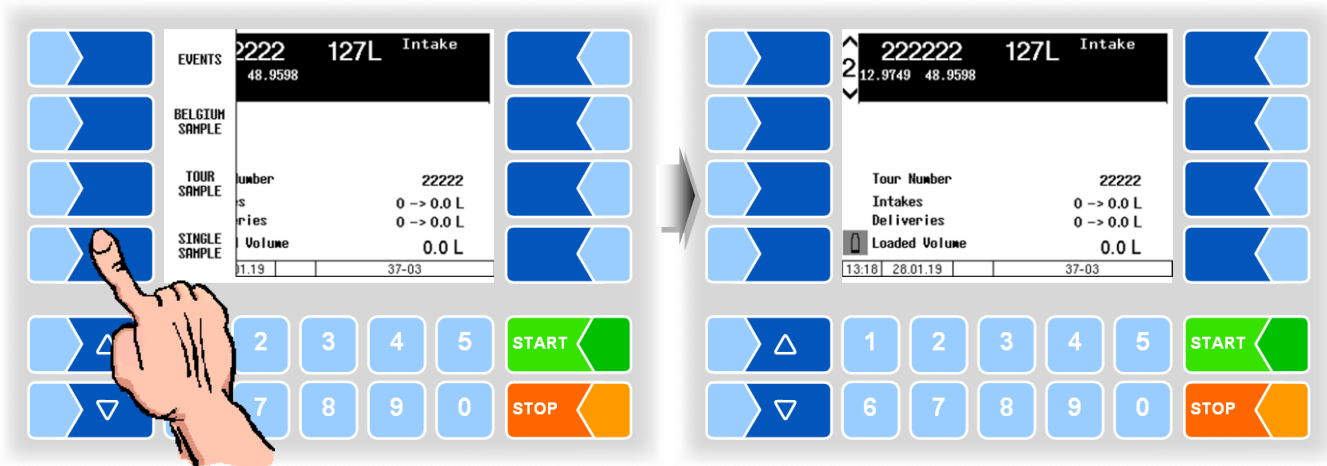
8 Sampling

The measuring system can be configured so that a single sample, tour sample or Belgium sample are automatically activated at the start of the tour. If there is no automatic activation, you can also activate the sampling manually.




- Touch one of the softkeys to the left of the display to display the hidden soft keys.



- Touch the soft key **TOUR SAMPLE**, **SINGLE SAMPLE** or **BELGIUM SAMPLE** (*) to activate or deactivate the respective function.



The corresponding symbol appears on the display:

-  Tour sample activated
-  Single sample activated
-  Belgium sample activated

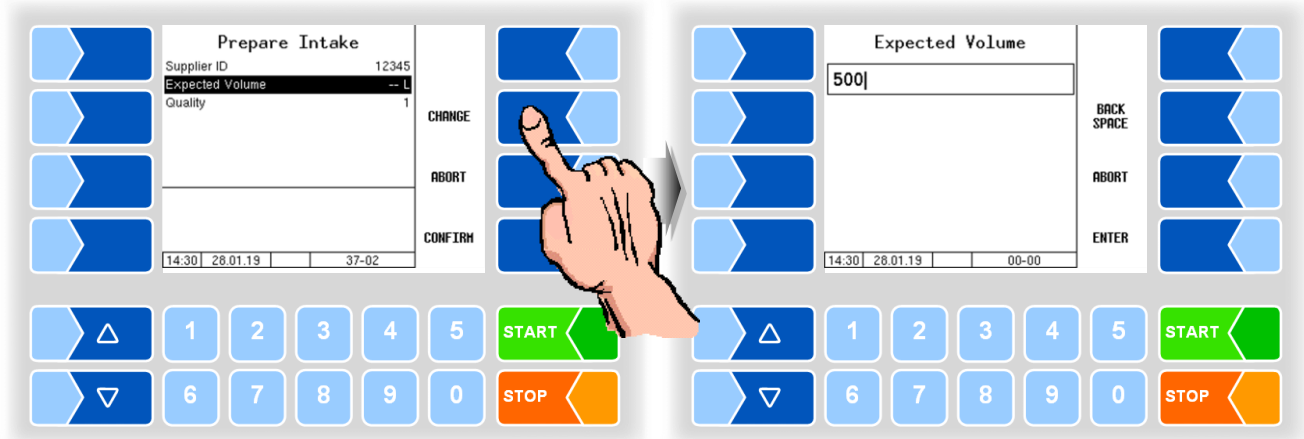
(*) Output 88 must be configured for the Belgium sample!

The "SMV4 sample" must be activated at tour start (see section 8.4).

8.1 Single sample

If you work with the ULTRASAMPLER® sampling system, you must enter or confirm a preset quantity in addition to the supplier number. From the preset quantity and the configured pump capacity, the controller calculates the flow rate of the ULTRASAMPLER® pump (to guarantee the configured sample volume for different intake quantities).

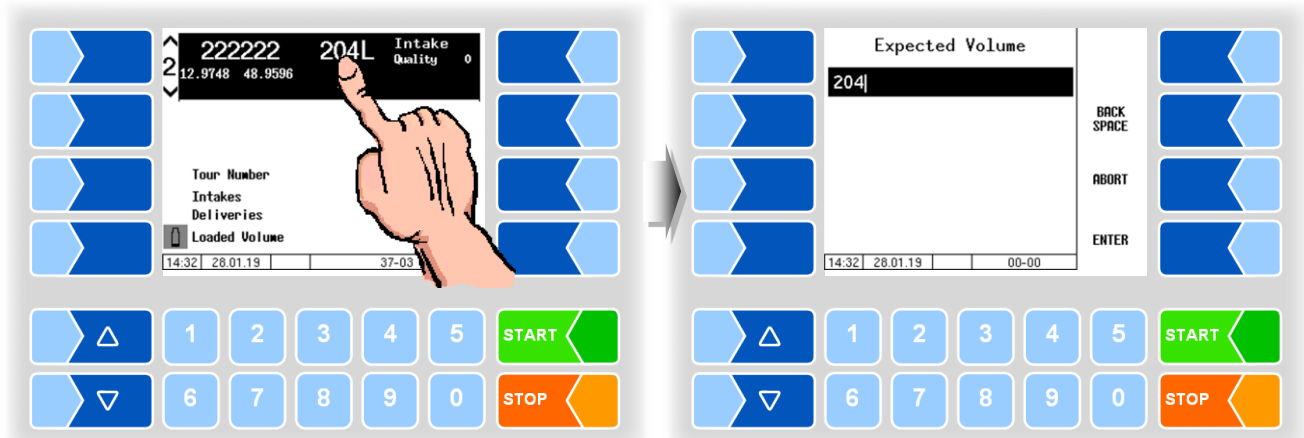
- Enter the expected intake quantity as the preset quantity for the first intake, which takes place under the entered supplier number.



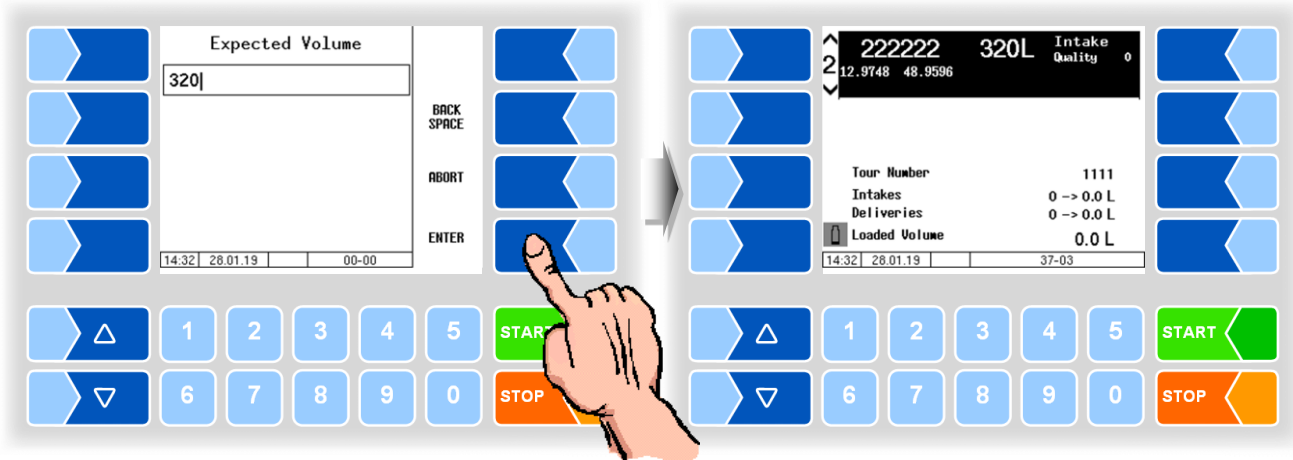
For all subsequent intakes, the preset quantity is formed and displayed from the previous preset quantity and the intake quantity of the previous intake, taking into account the configured learning factor. You can change this quantity at any time.

Changing the preset quantity

- Touch the displayed preset quantity.



- Enter the new preset quantity and confirm it with **ENTER**.



The sample bottles are automatically brought into the filling position and the sample bottle number is read.

If a fault is displayed even though the bottle is in the filling position, clean the reading window of the barcode reader.



Risk of accident!

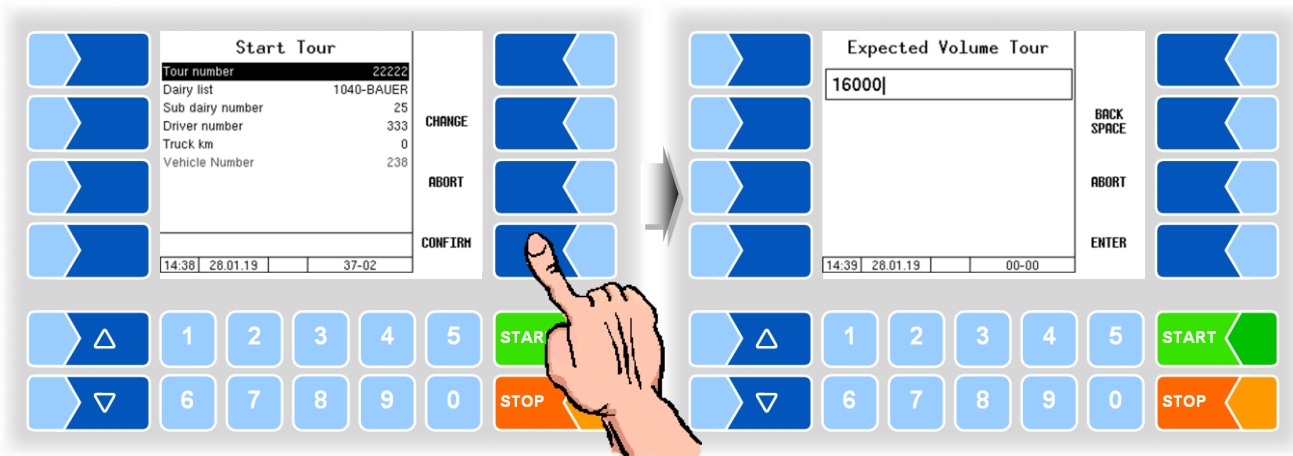
Before cleaning the reading window, interrupt the power supply and/or the compressed air supply for sampling and bottle supply!

8.2 Tour sample

If tour sampling is configured, a sample is filled over the entire tour. The symbol for the tour sample is shown on the display.

The preset quantity for the tour is queried at tour start or after activating the tour sample.

The last value is displayed here as a recommendation. If necessary, correct this quantity to the total intake quantity actually expected for the tour (e.g., including the trailer volume).



8.3 Belgium sample

The Belgium sample can only be activated if output 88 is configured. The WAVE box 100S must be configured to read and write tags.

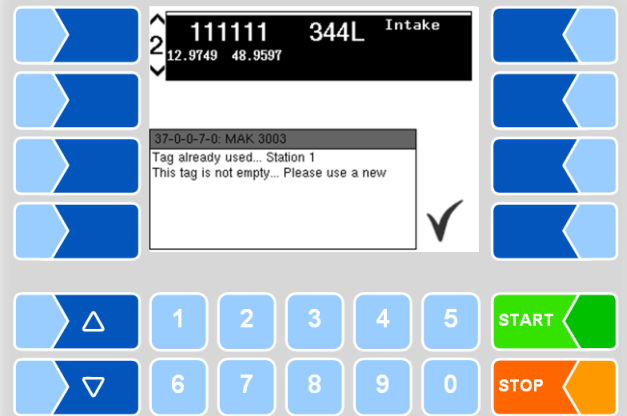
8.3.1 Procedure

- Move a sample bottle to the filling position.
- Start the intake.
If the sample is active, the system checks whether a sample bottle with a blank tag is in the filling position when an intake is started.

If the Belgium sample is active, an intake can only take place if a sample bottle with an empty tag has been detected. If no sample bottle with empty tag was detected, the intake cannot be started. A corresponding message appears on the display.

Examples

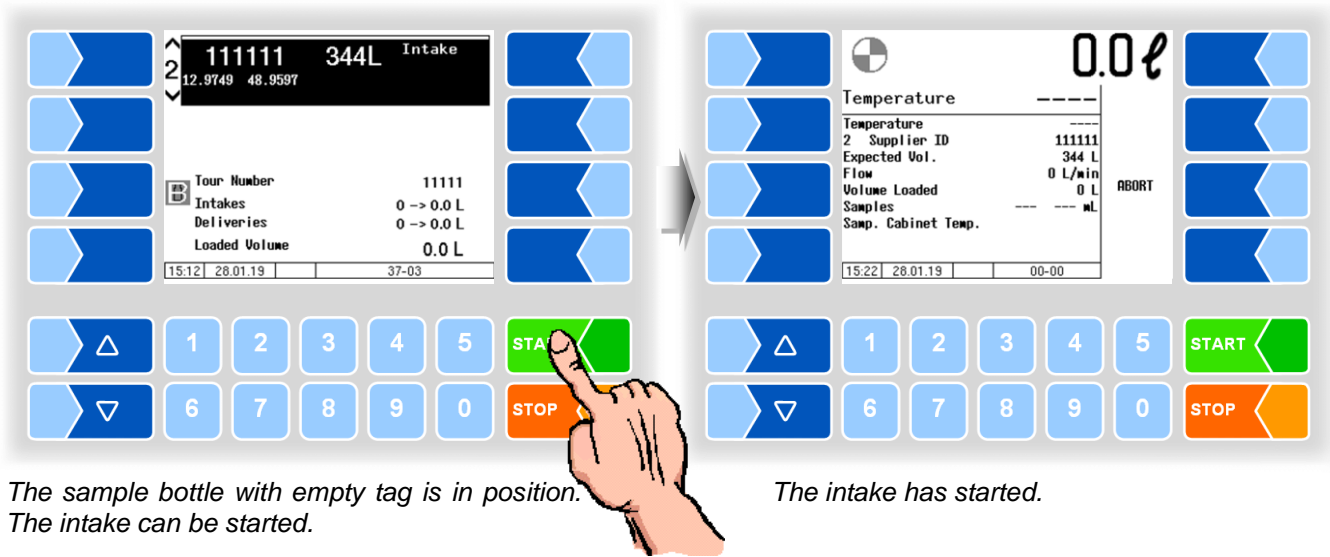
The tag of the current sample bottle is already written. Replace the sample bottle.



The tag could not be recognised. Check the positioning of the sample bottle or replace the sample bottle.

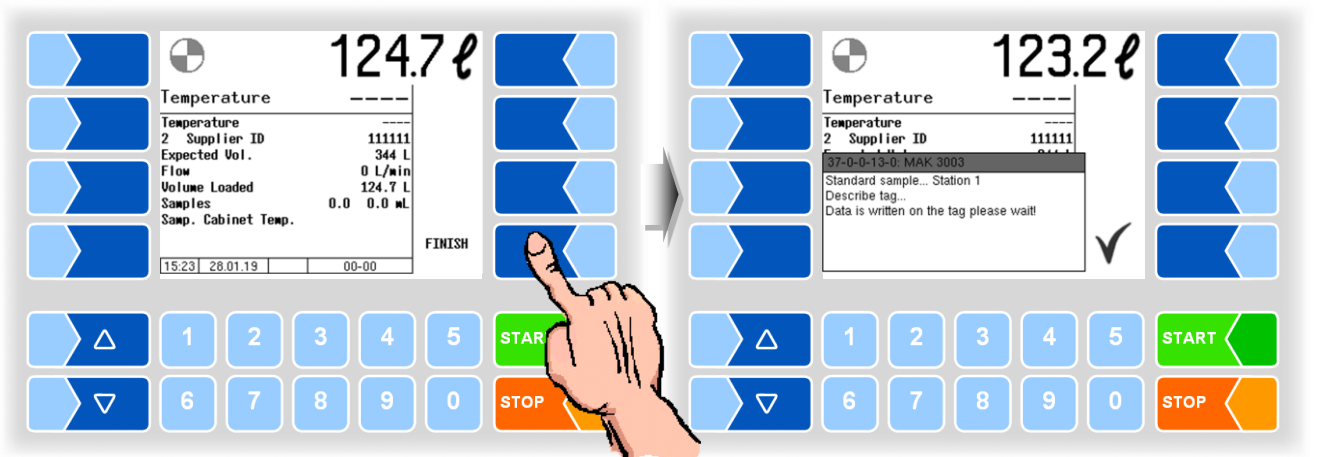


The symbol for the Belgium sample flashes after switching on and after writing to a tag.
The blinking stops and the intake can be started only if a new, empty tag is available.



The sample bottle with empty tag is in position.
The intake can be started.

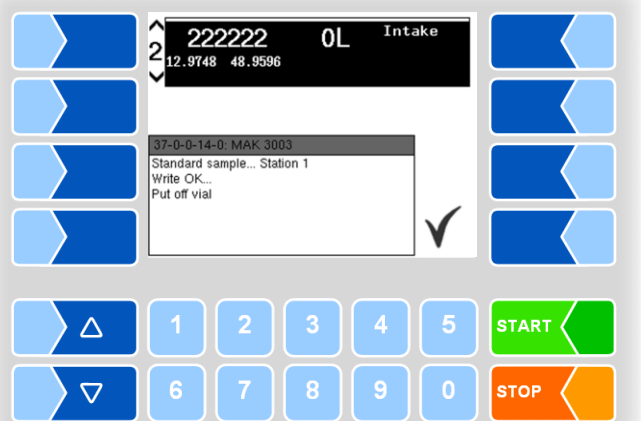
The intake has started.



The intake is complete.

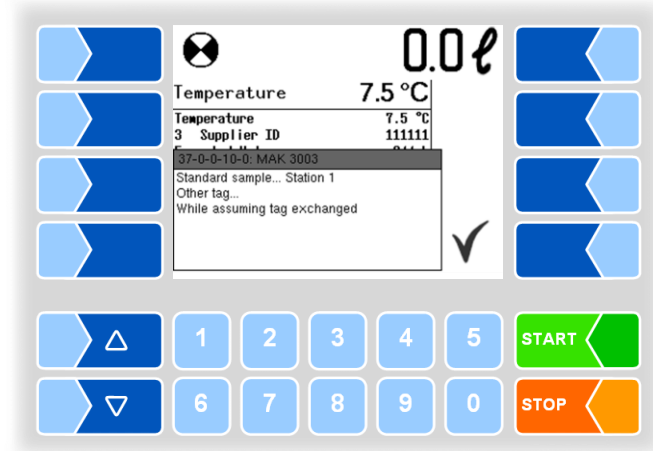
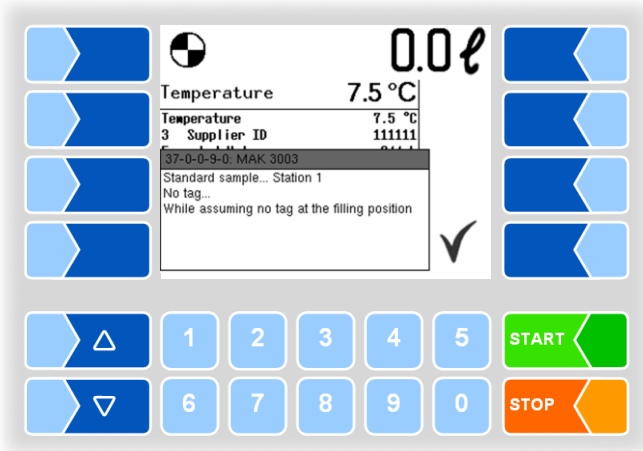
The tag is written.

- Wait until the display shows that the tag has been written.

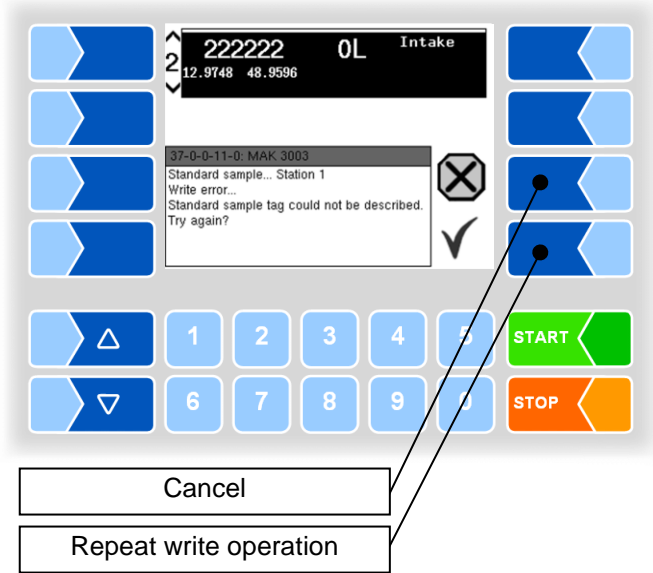


If a tag could not be detected continuously during the intake, the corresponding messages are displayed.

Examples



If an error occurs during writing after the intake, you have the option to repeat the write process.

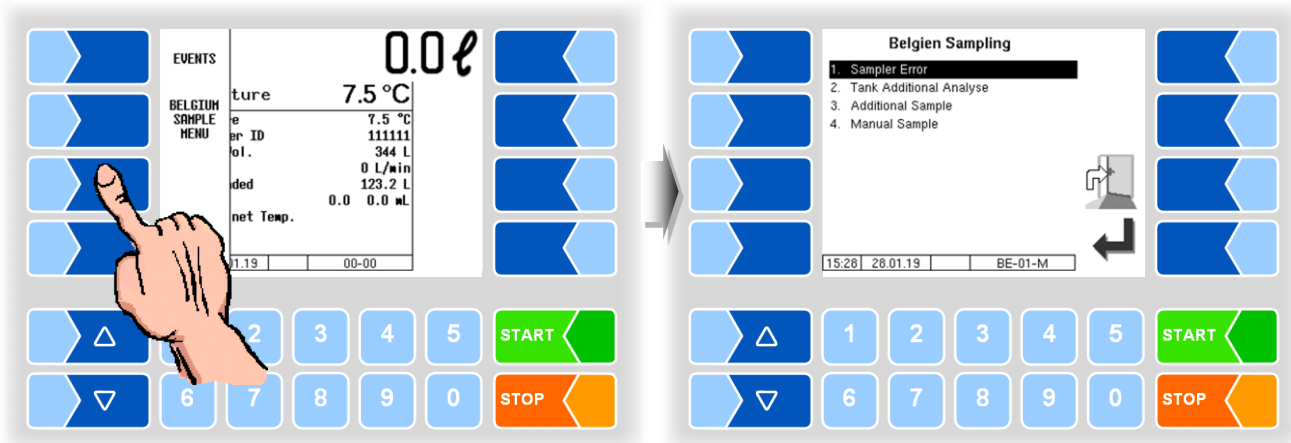


8.3.2 Belgium Sample menu

The Belgium Sample menu allows you to write additional information to the tag.

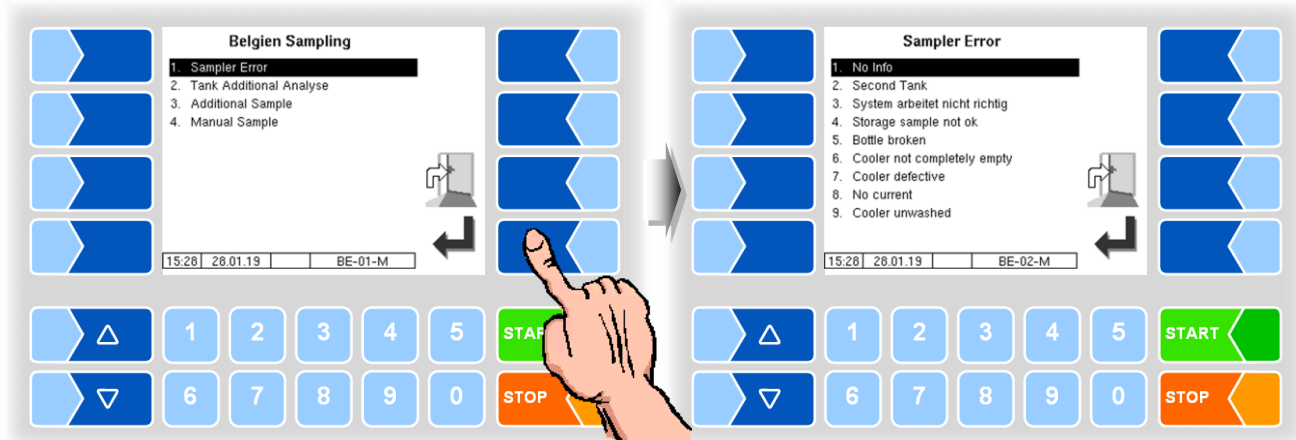
- To display the hidden soft keys, touch one of the soft keys to the left of the display.
- Then open the BELGIUM SAMPLE MENU.

Four categories are then displayed, from which the further selection takes place. The information selected in the four categories is additionally written to the tag.



8.3.2.1 Sampler errors


If sampler errors occur, you can select the appropriate information here.



	<i>Information</i>	<i>Explanatory notes</i>
1	No Info	No applicable information available
2	Second tank	Two tanks available
3	System is not working properly	Sampler error
4	Storage sample not OK	Malfunction of the sample cassette
5	Bottle broken	Sample bottle broken
6	Cooler not completely empty	Cooling compartment not empty
7	Cooler defective	Cooling defective
8	No current	Power failure
9	Cooler unwashed	Cooling not cleaned

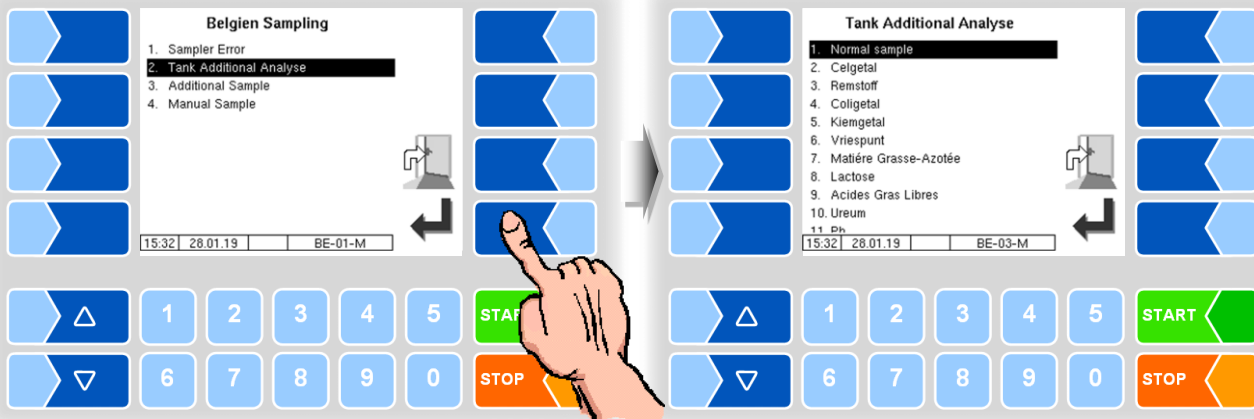
8.3.2.2 Additional Analysis of Tank

If an additional analysis is to be performed for the currently taken sample, you can write this information to the tag.

- From the list, select which additional analysis should be performed on the sample.
- Press the "Confirm" soft key  to confirm your selection.

You can also make the selection directly by touching the corresponding number key(s).

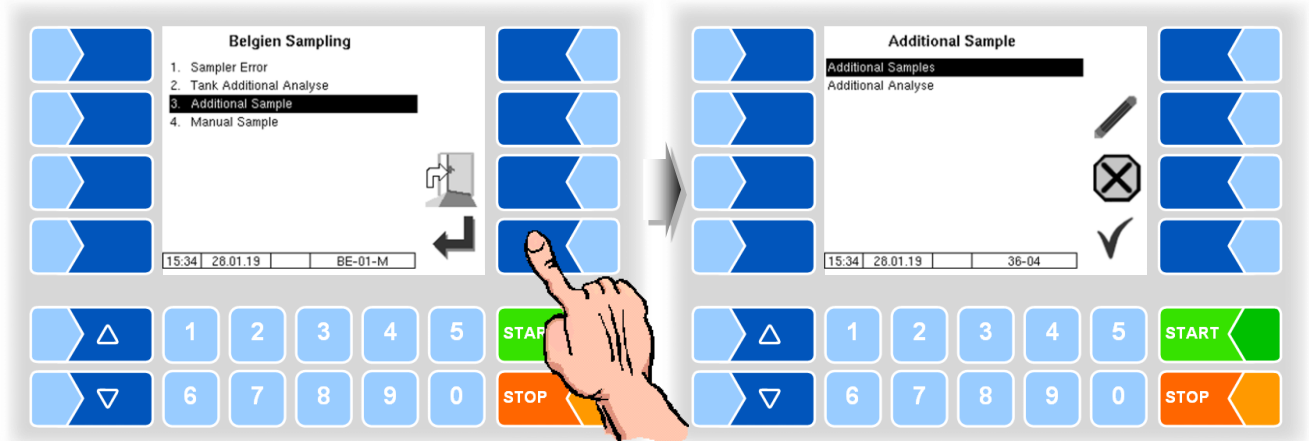
Only one additional analysis can be selected for the sample at a time.



	Information	Explanatory notes
1	Normal sample	Normal sample
2	Celgetal	Cell count
3	Remstoff	Inhibitors
4	Coligetal	Coliform germs
5	Kiemgetal	Bacterial count
6	Vriespunt	Freezing point
7	Matière Grasse-Azotée	Fat and nitrogen content
8	Lactose	Lactose
9	Acides Gras Libres	Free fatty acids
10	Ureum	Urea
11	Ph	PH value
12	Filtratie	Filtration
13	Onverzadigde cetzuren	Unsaturated fatty acids
14	Thermoresistant bacteria	Thermoresistant bacteria
15	Butyriques	Butyric acid
16	Biotin	Vitamin B
17	Iodure	Iodide
18	Celgetal + Remstoff	Cell count + inhibitors
19	Celgetal + Coligetal	Cell count + coliform germs
20	Celgetal + Germes	Cell count + germ count
21	Celgetal + Cryoscopie	Cell count + Freezing point depression
22	Celgetal + MG/MP	Cell count + fat and nitrogen content
23	Inhibiteurs + Coligetal	Inhibitors + Coliform germs
24	Inhibiteurs + Germes	Inhibitors + bacterial count
25	Germes + Coligetal	Germ count + Coliform germs
26	MG/MP + Lactose	Fat and nitrogen content + lactose
27	MG/MP + Ureum	Fat and nitrogen content + urea
28	Cellules + MG/MP + Ureum	Cell count + fat and nitrogen content + urea

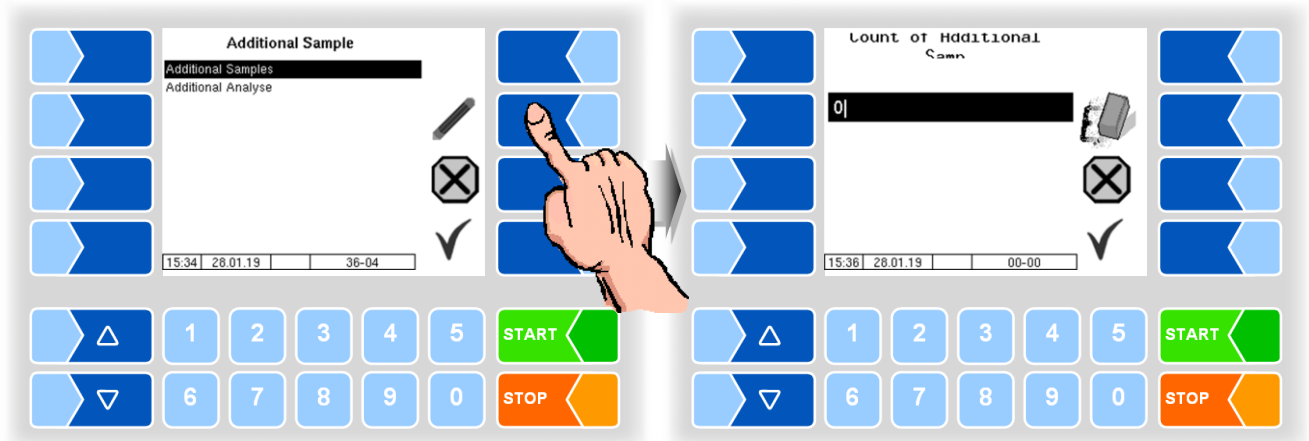
8.3.2.3 Additional Sample

In addition to the normal sample, additional filled sample bottles can be provided.



Number of additional samples

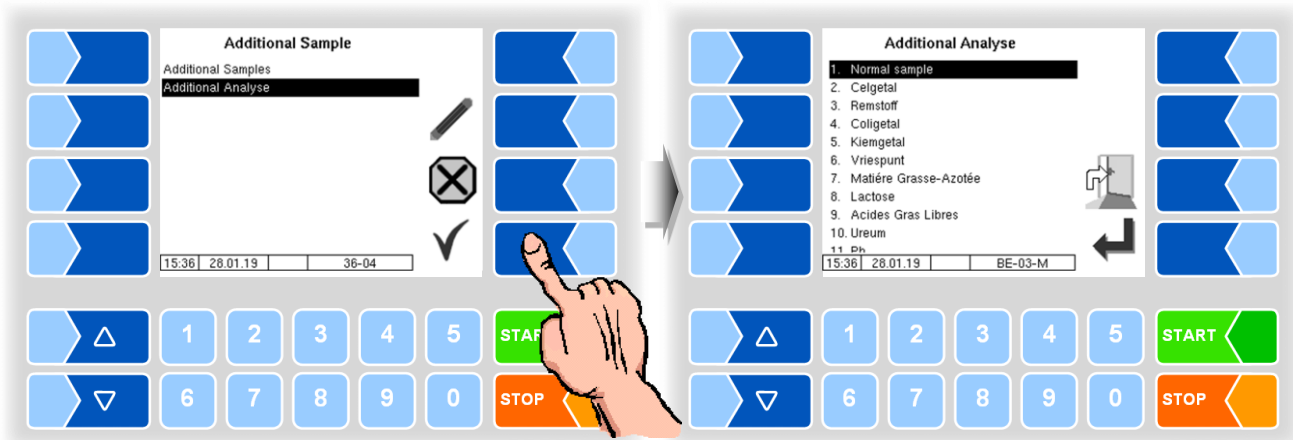
- Select the menu item "Additional Samples".



- Enter the number of additional samples.

Additional analyses

- Select the menu item "Additional Analysis".

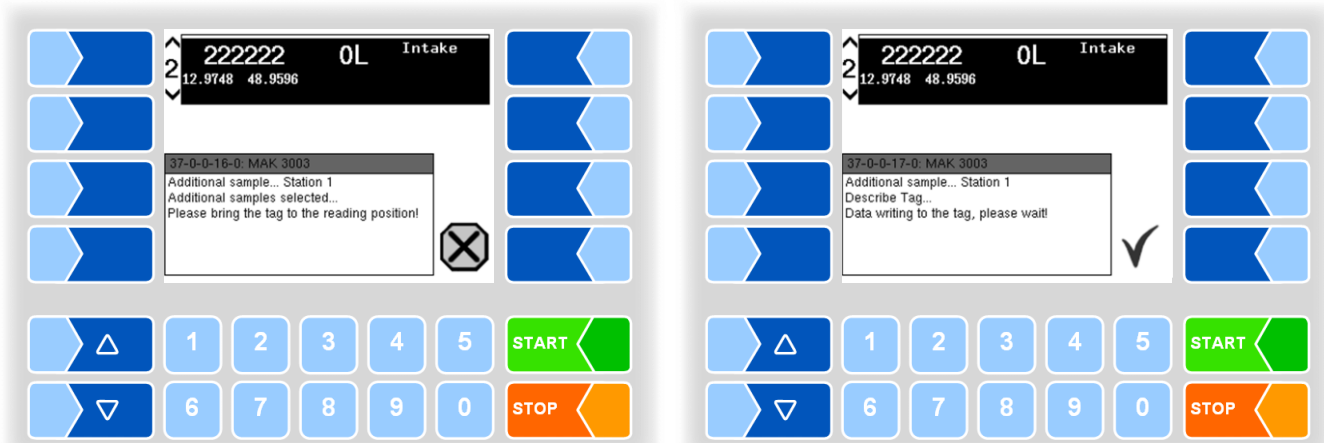


- Select from the list (see section 8.3.2.2) which additional analysis should be performed on the sample.
- Press the "Confirm" soft key to confirm your selection.

You can also make the selection directly by touching the corresponding number key(s).

- When the corresponding prompt appears on the display, move the additional sample bottle, which has a tag, to the reading position.

When the tag is recognized, the additional sample information is written to the tag.

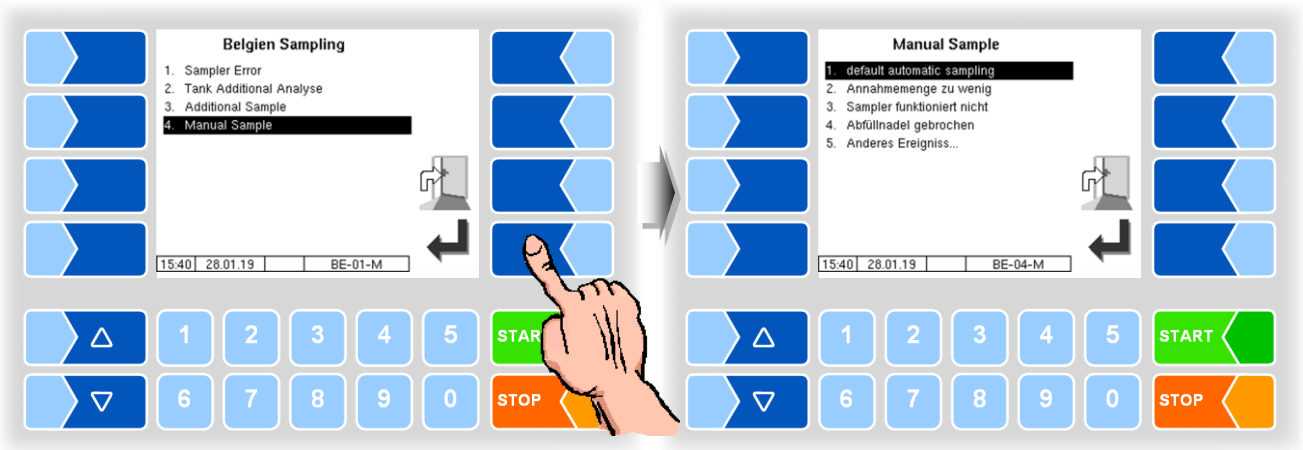


The same analysis that you have selected will be performed on all associated samples according to the entered number (see page 29).

8.3.2.4 Manual sample

You can fill a sample manually in case of a malfunction of the automatic sampling.

- Then place the filled sample bottle in the reading position of the tag reader.
- Select the appropriate reason for manual sampling from the list under "Manual Sample".



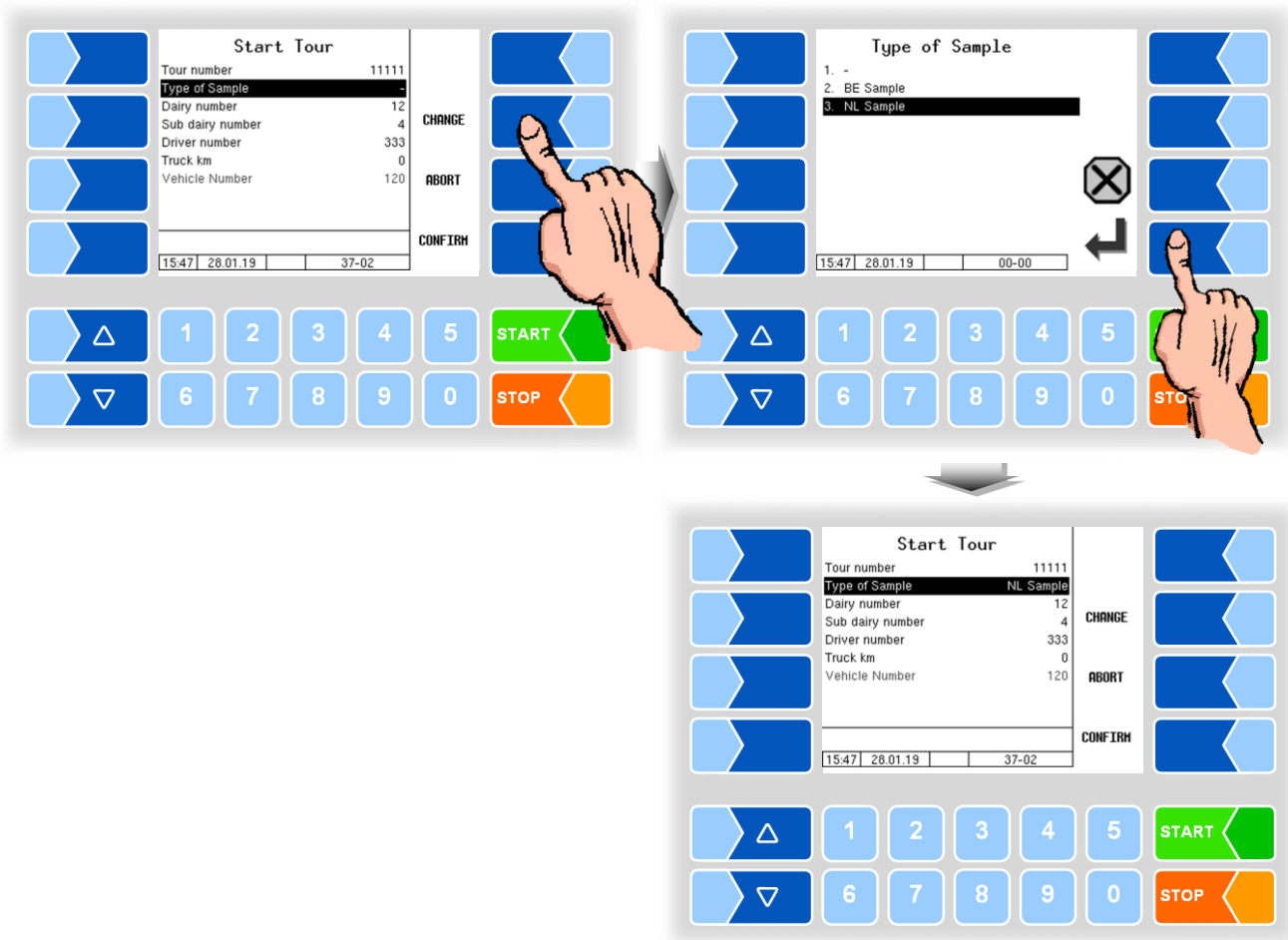
	<i>Information</i>	<i>Explanatory notes</i>
1	Default automatic sampling	Automatic normal sample
2	Intake quantity too small	Intake quantity is too small for automatic sampling
3	Sampler is not working	Sampler defective
4	Broken filling needle	Broken filling needle
5	Other event...	Other event...

8.4 SMV4 sample

The SMV4 probe can only be activated if outputs 90 and 92 are configured. To read and write tags, *Tag Scanner NL-TAG Manuel* must be configured.

8.4.1 Procedure

- Select the sample type "NL Sample" at tour start.



When the SMV4 sample is activated, this symbol is displayed in the intake window.

- Move a sample bottle to the filling position.



- Start the intake.
If the sample is active, the system checks whether a sample bottle with a blank tag is in the filling position when an intake is started.

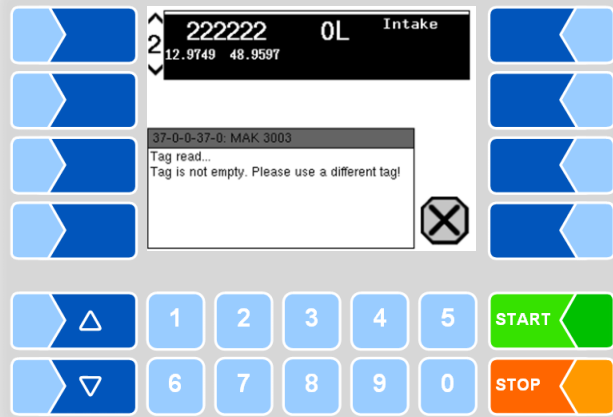
*The sample bottle with empty tag is in position.
The intake can be started.*

The supplier data is written to the tag.

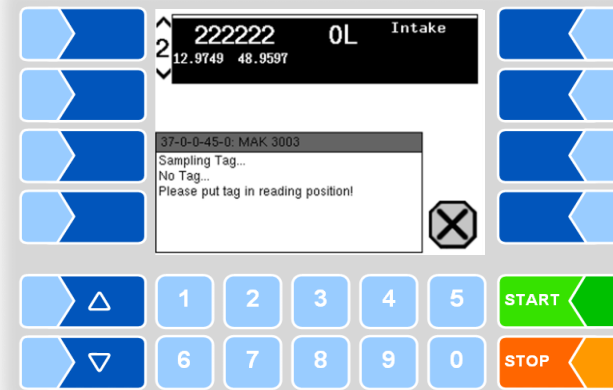
If no sample bottle with empty tag was detected, the intake cannot be started. A corresponding message appears on the display.

Examples

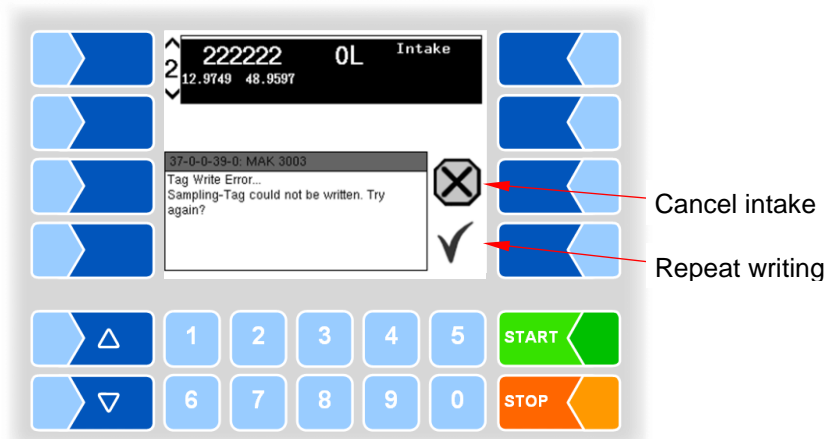
The tag of the current sample bottle is already written. Replace the sample bottle.

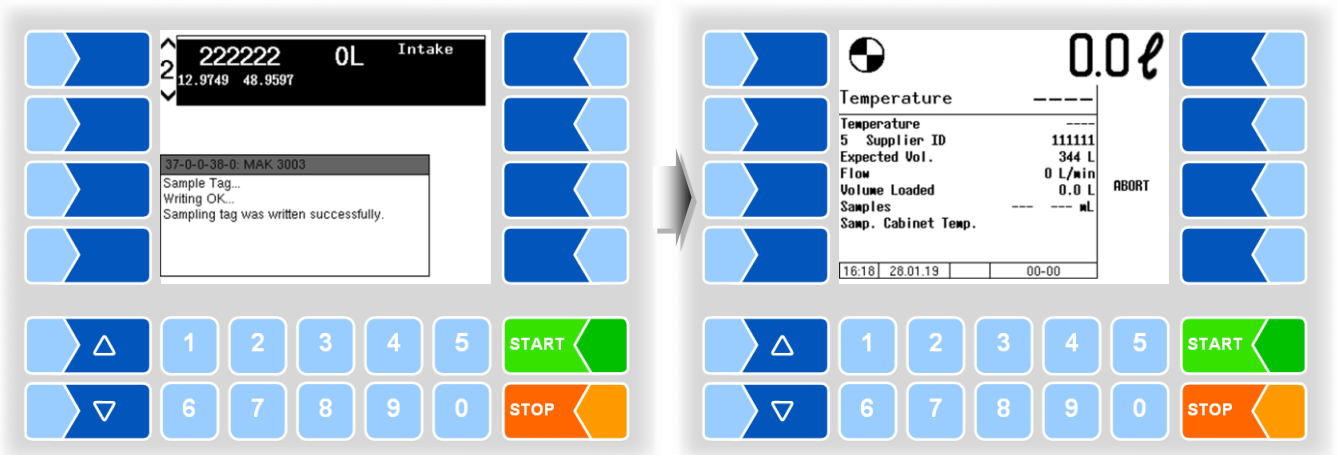


The tag could not be recognised. Check the positioning of the sample bottle or replace the sample bottle.



If an error occurs while writing to the tag, you can repeat the write operation or cancel the operation. In this case, the intake is not started.

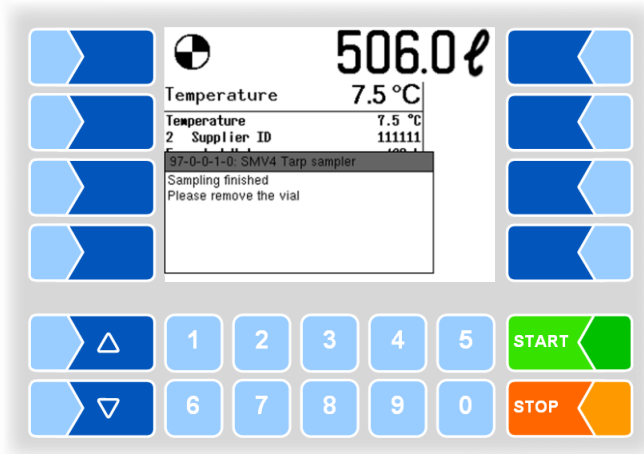




The tag was successfully written.

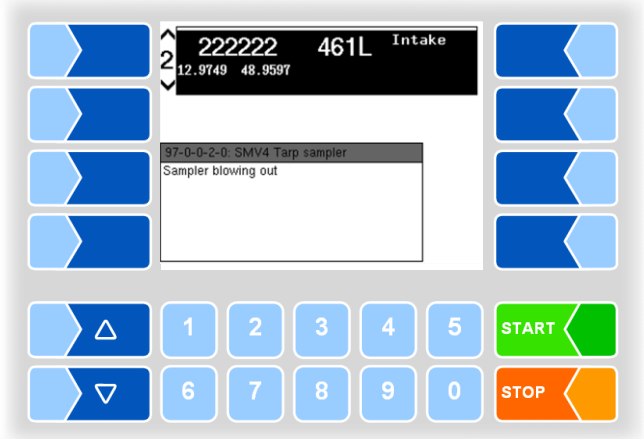
The intake has started.

When the intake is finished, you will be prompted to remove the sample bottle.



The intake is complete. Remove the sample bottle when the request to do so is displayed.

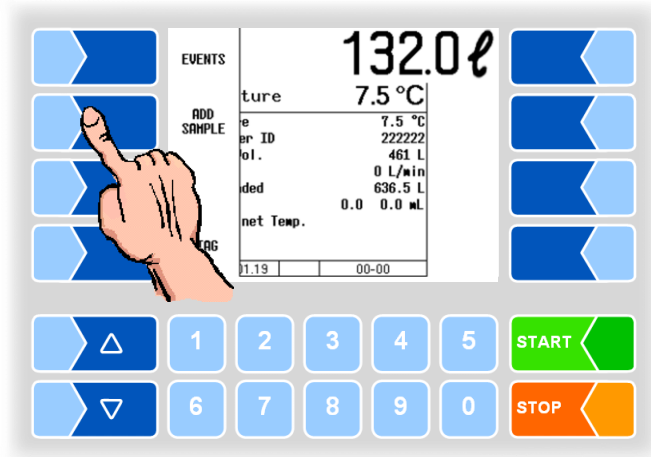
The pipe is purged after the sample bottle has been removed. Any product residues remaining in the pipe are purged with compressed air. Wait until this process has been completed.



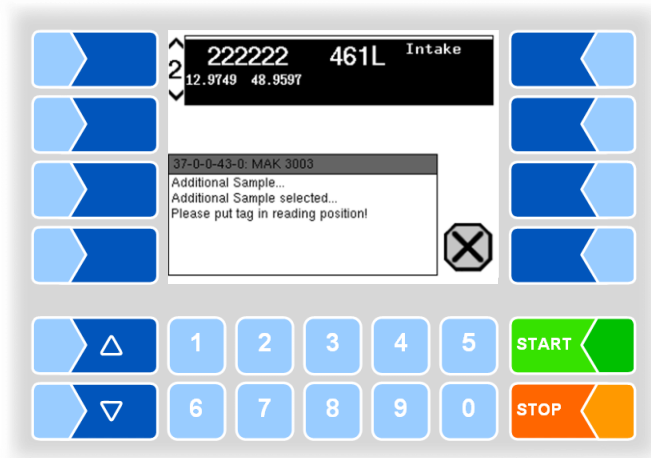
8.4.2 Additional sample

In addition to the normal sample, you can fill another sample bottle.

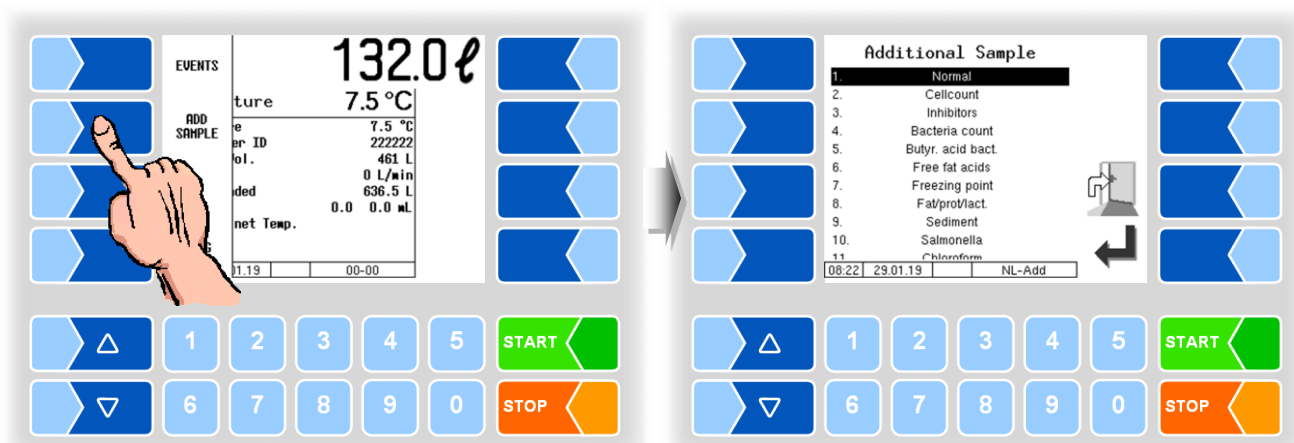
- Touch the soft key **ADD SAMPLE** during the intake. This soft key is only active during the intake.




When the intake is finished and the purging has been completed, you will be prompted to describe the additional sample.



- Fill a sample bottle manually.
- Place the additional sample bottle, which carries a tag, in the reading position.



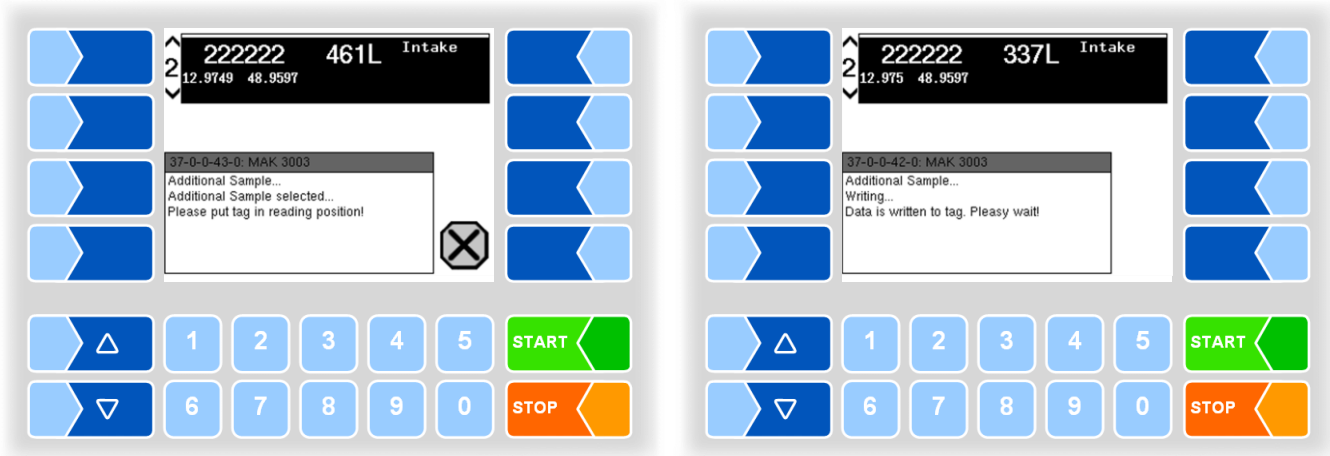
- From the list, select which additional analysis should be performed on the sample.
- Press the "Confirm" soft key  to confirm your selection.

You can also make the selection directly by touching the corresponding number key(s).

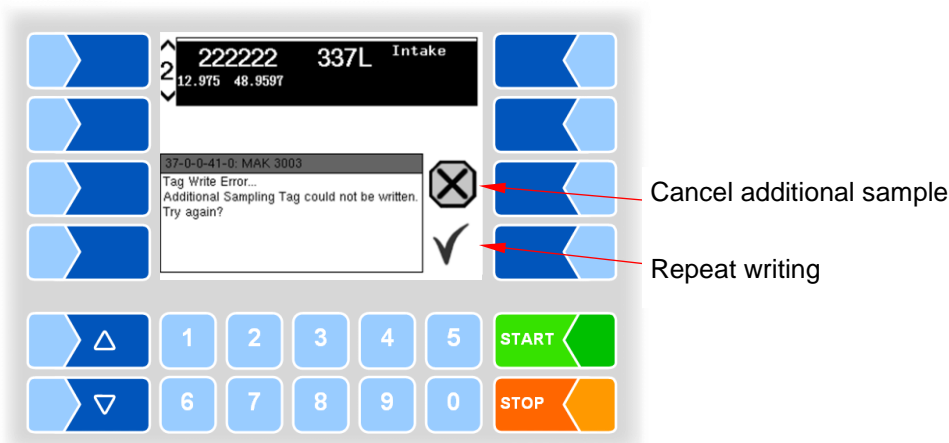
Only one additional analysis can be selected for the sample at a time.

	<i>Information</i>	<i>Explanatory notes</i>
1	Normal	Normal sample
2	Cell count	Cell count content of the milk (criterion for raw milk quality)
3	Inhibitors	Pharmaceuticals, feed ingredients or milk-borne inhibitors
4	Bacteria count	The bacteriological condition of the milk
5	Butyr. acid bact.	Content of butyric acid bacteria
6	Free fatty acids	Content of free fatty acids
7	Freezing point	Freezing point of raw milk
8	Fat/prot/lact	Fat, protein, lactose content
9	Sediment	Examination of the total bacterial count
10	Salmonella	Examination for salmonella
11	Chloroform	Examination for chloroform residues
12	DU	

When the tag is recognized, the additional sample information is written to the tag.



If a write error occurs, you can repeat the write operation or cancel the operation.



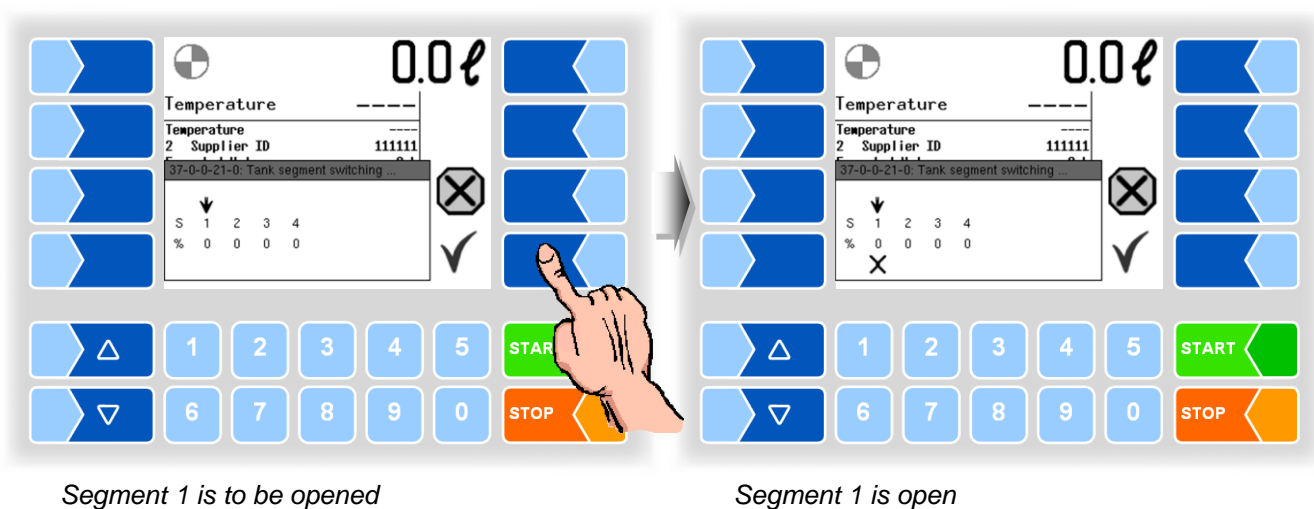
9 Tank segment monitoring

The configurable tank segment monitoring makes it possible to fill the milk specifically into individual tank segments.

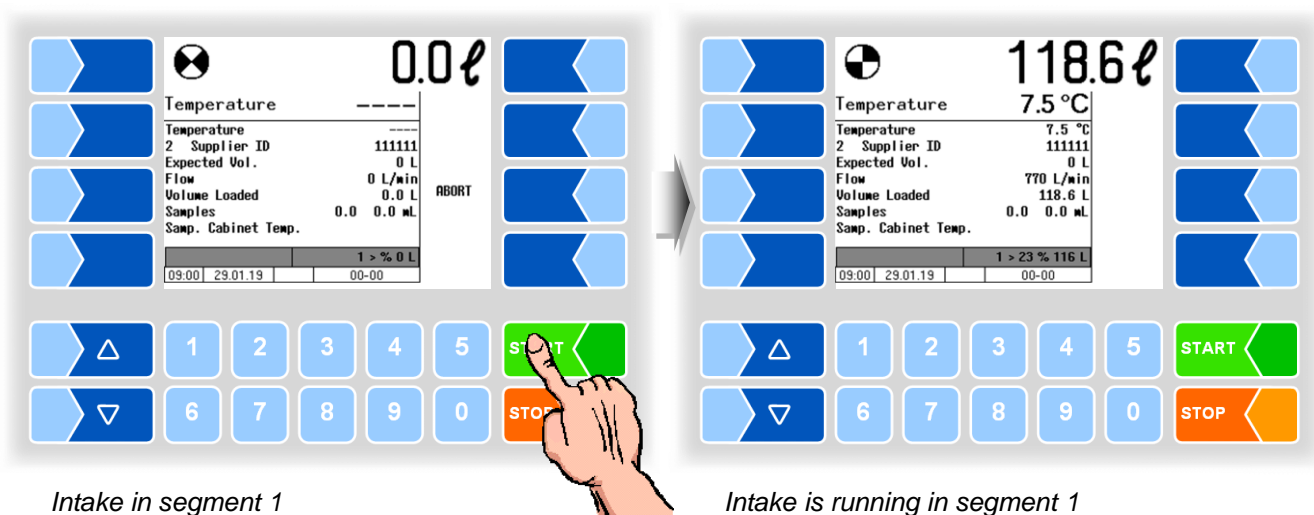
If a segment sequence is defined in the configuration, you can only fill the segments in this sequence.

An arrow above the segment number indicates which segment must be opened.

- Open the displayed segment.
The open segment is marked by a cross below the level indicator.



- Confirm the open segment with the soft key .
Then the intake is started.

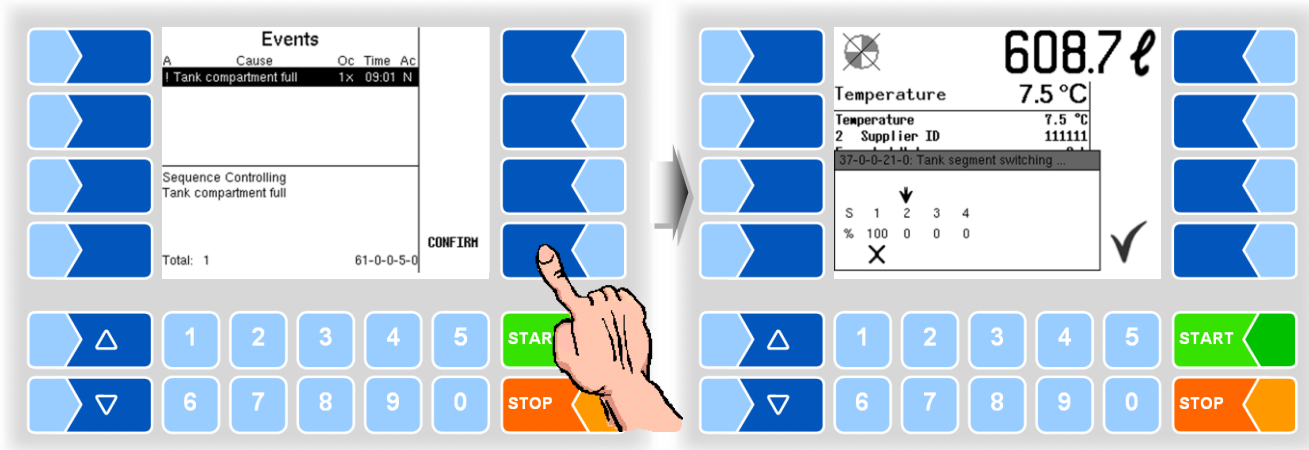


When the configured segment capacity is reached, a message is output and the intake is interrupted.

If an overfill quantity is configured, you can continue to fill the segment after each confirmation of the message until the configured overfill quantity is reached.

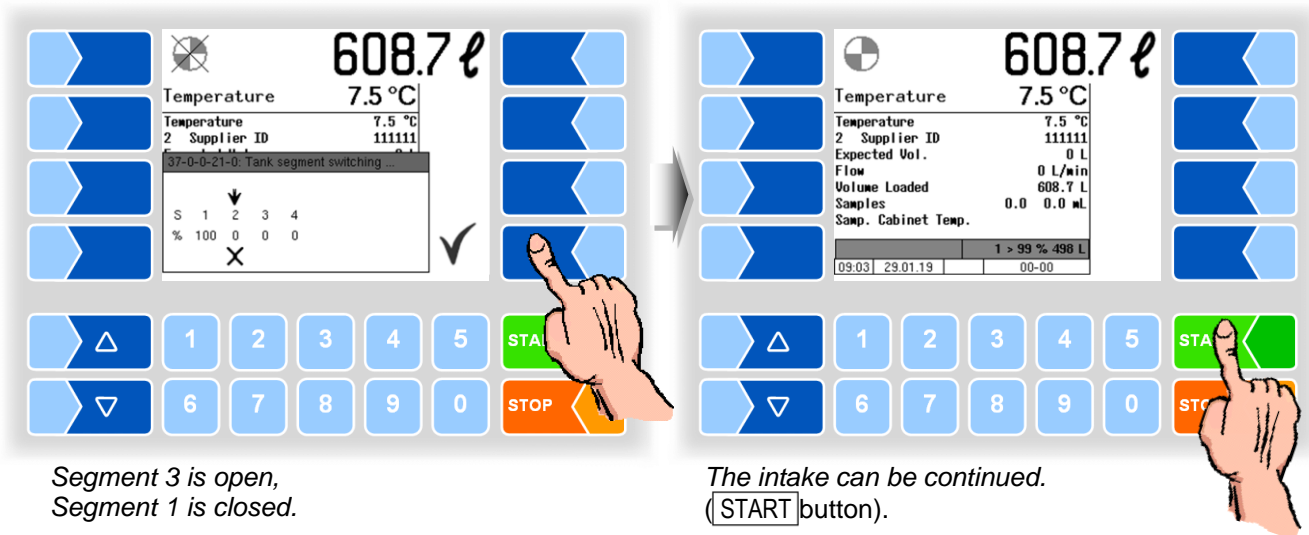
Afterwards, the intake can only take place in another segment.

- Confirm the message.
The next segment to be opened is marked with an arrow.



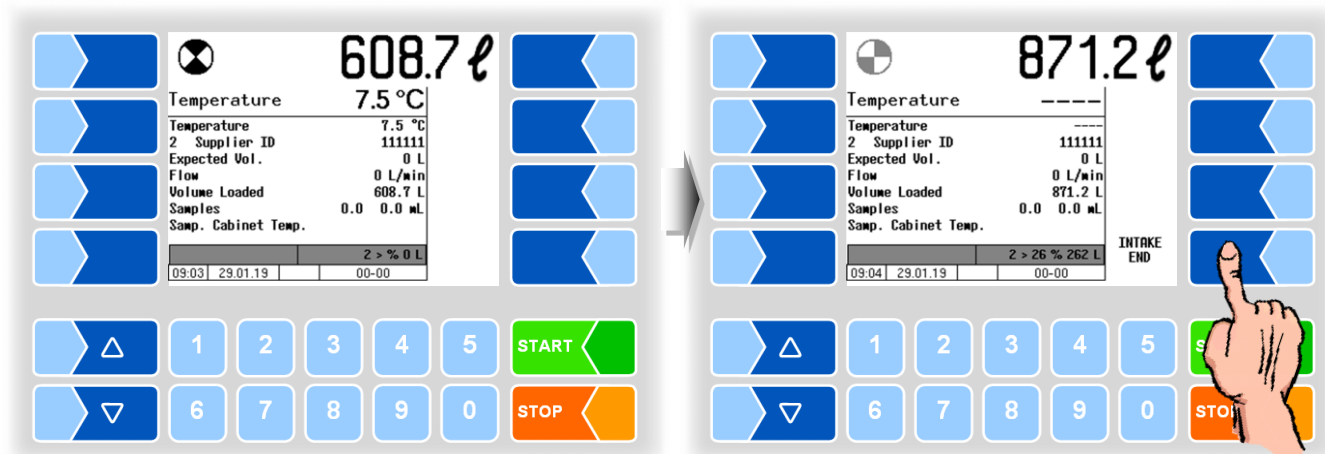
Segment 1 is full.

Segment 3 is to be opened,
Segment 1 is still open.



Segment 3 is open,
Segment 1 is closed.

The intake can be continued.
(START button).



The intake is running in Segment 2.

The intake is finished and can be completed.



If the configuration does not specify a sequence for the segments, you can fill them in any sequence.

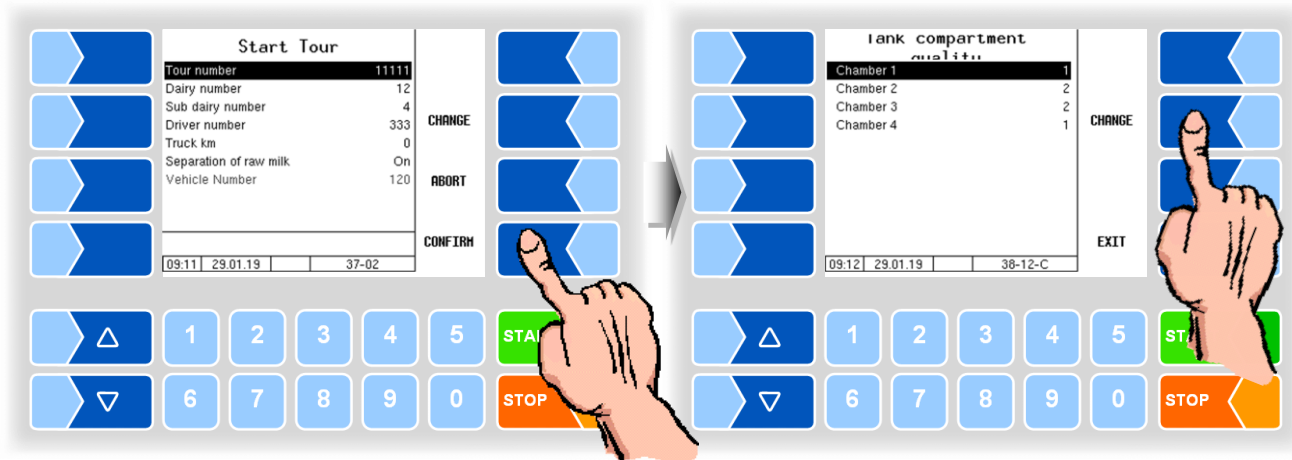
You can check the fill level of the tank segments outside an intake via the tour menu (see section 12.13) or with the numeric shortcut key **[5]** (see section 13.2).

10 Raw milk separation

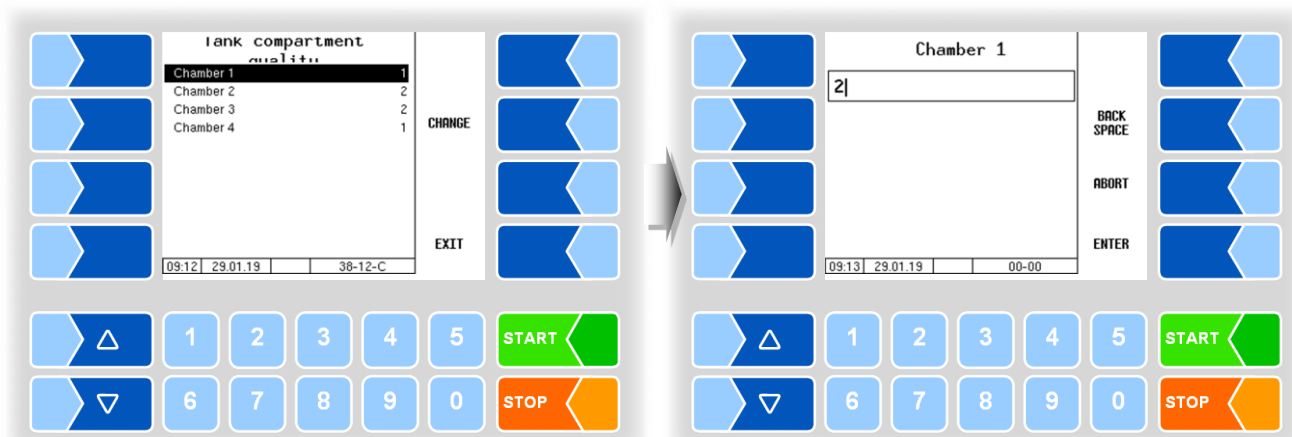
During intake, the milk can be filled into separate tank segments according to its quality. Qualities from 1 (good) to 8 (bad) are possible. The quality level of the milk is taken either from the quantity memory, transferred with the default data or the driver must manually enter the quality level on the basis of the available supplier data.

Depending on the configuration, you can confirm the configured assignment of the qualities to the tank segments when the tour starts with an empty vehicle, or change it for the duration of the current tour.

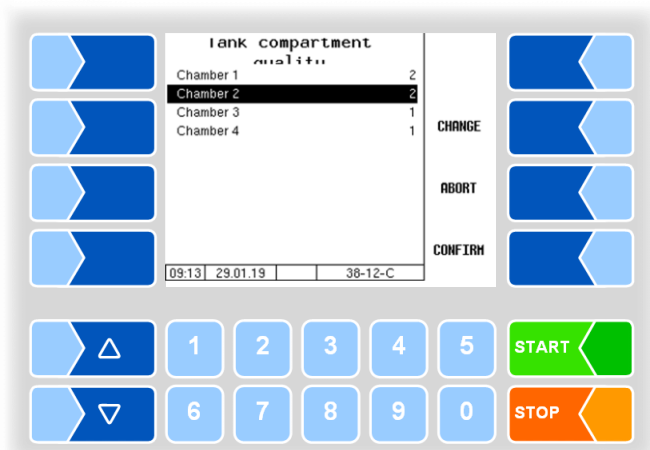
If raw milk separation is activated, the current quality assignment of the segments is displayed after confirmation of the tour data.



If you want to change the current quality assignment, touch the soft key **CHANGE**. You can then change the quality levels of the segments.



You can also edit the quality assignment of the tank segments in the tour menu (see chapter 12, section 12.14).



Confirm the assignment of the tank segment qualities with **CONFIRM**.

If no quality is applied by default or from the quantity memory, the quality of the milk to be collected must be entered.



If **automatic compartment selection** is configured, the tank segment configured for this quality is automatically selected after the quality has been entered. If the configuration is set to **manual compartment selection**, a segment is proposed according to the quality entered. You can select another segment instead of the proposed one.

The intake of milk into a segment whose quality differs from the quality of the current intake leads to a corresponding downgrading if this segment already contains milk.

Milk quality worse than the quality level of the segment ⇒

the quality level of the **segment is downgraded.**

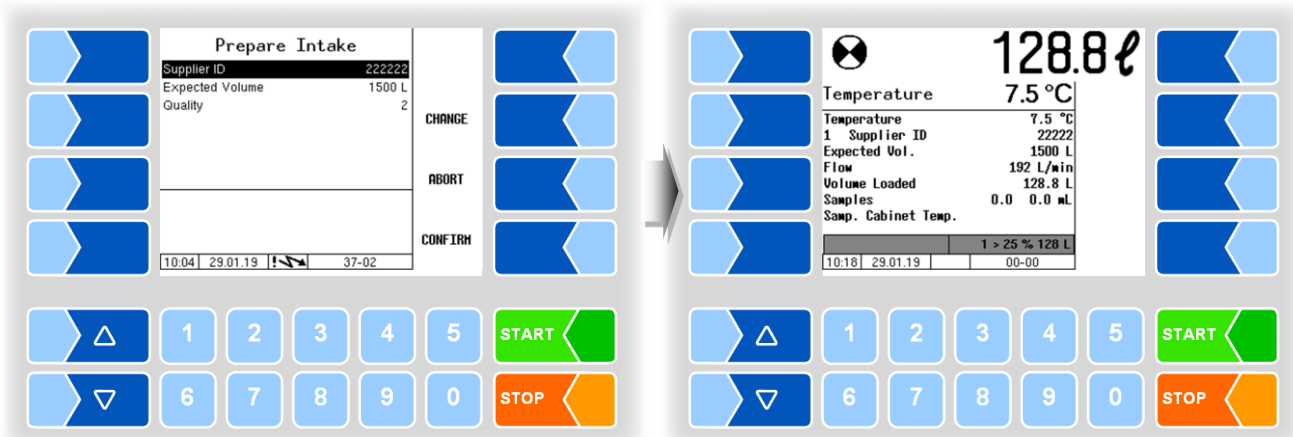
Milk quality better than the quality level of the segment ⇒

the quality of the collected **milk is downgraded.**

Depending on the quality level of the selected segment, a message is displayed indicating the upgrading or downgrading of the quality level of the segment or of the milk to be collected (see section 48).

If the selected segment is empty, its quality level is set to the quality of the milk to be collected.

- Confirm the intake data, intake is started.

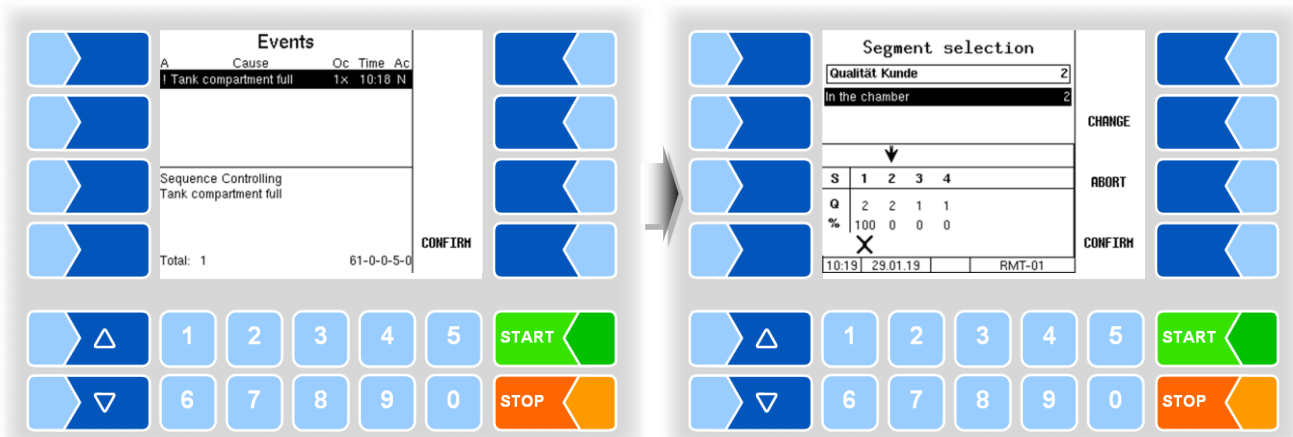


Quality change

At the start of intake, the system always switches to the last selected segment. If milk is collected which has a different quality than that previously collected, the system automatically switches to the new segment after reaching the configured changeover quantity without stopping the pump.

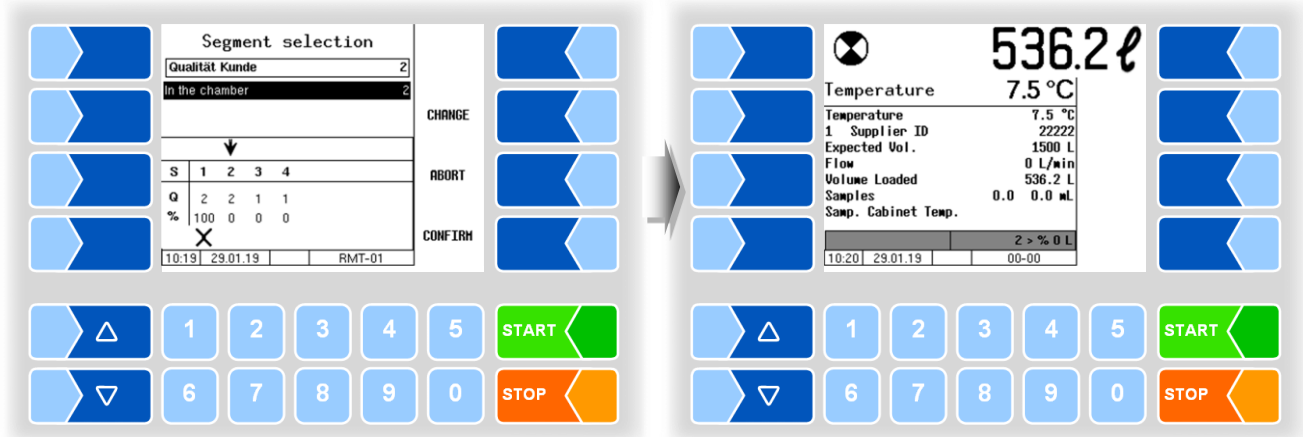
Segment full

If the capacity of a segment is exhausted, the intake is interrupted and a message is output. Confirm receipt of this message. The segments are then displayed with quality level and filling level in %.



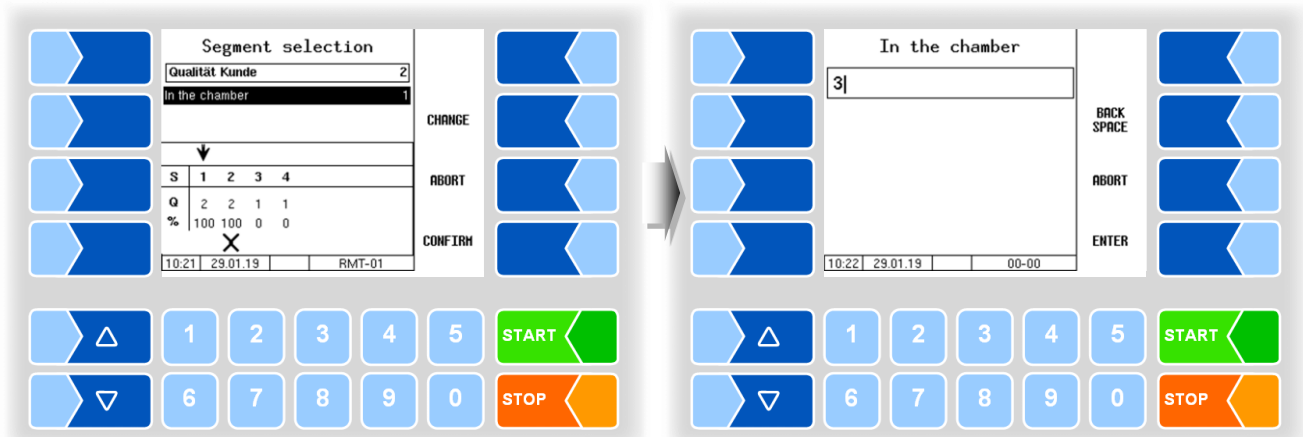
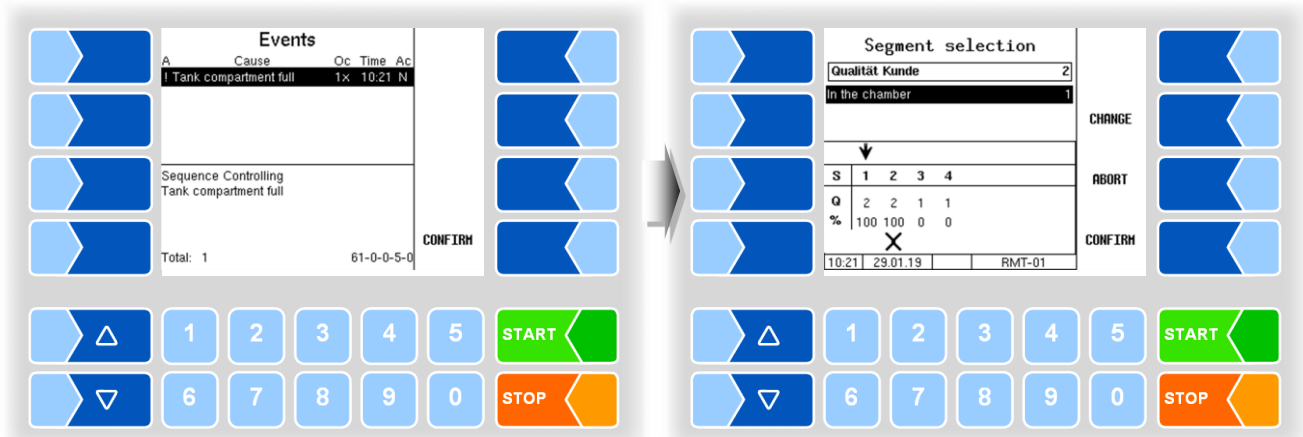
If free segments of the required quality exist, the next free segment of this quality is proposed.

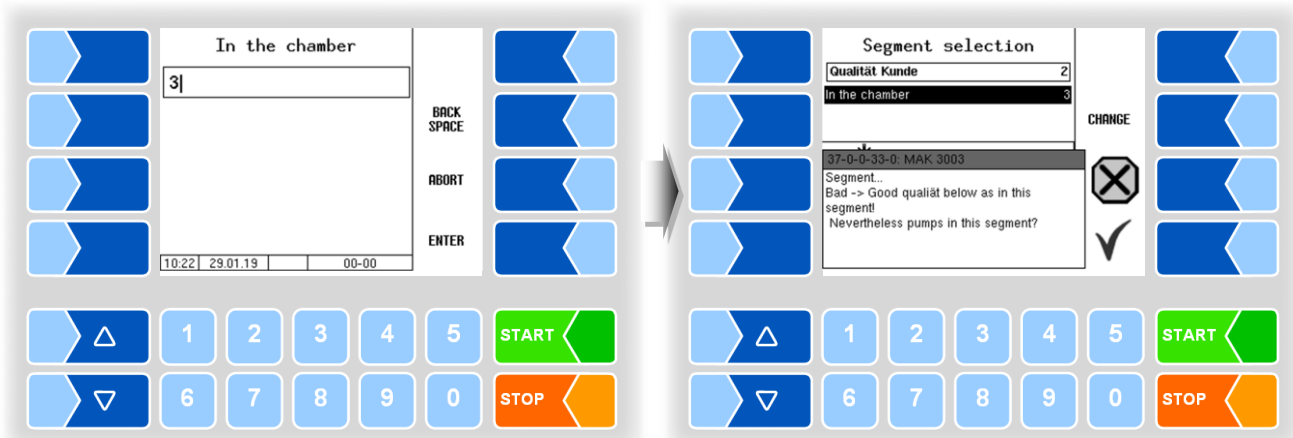
- Confirm the segment selection, intake will be continued.



No segment is available with the required quality

If no free tank segment is available for the quality of the milk currently to be collected, you have the option of selecting another segment.





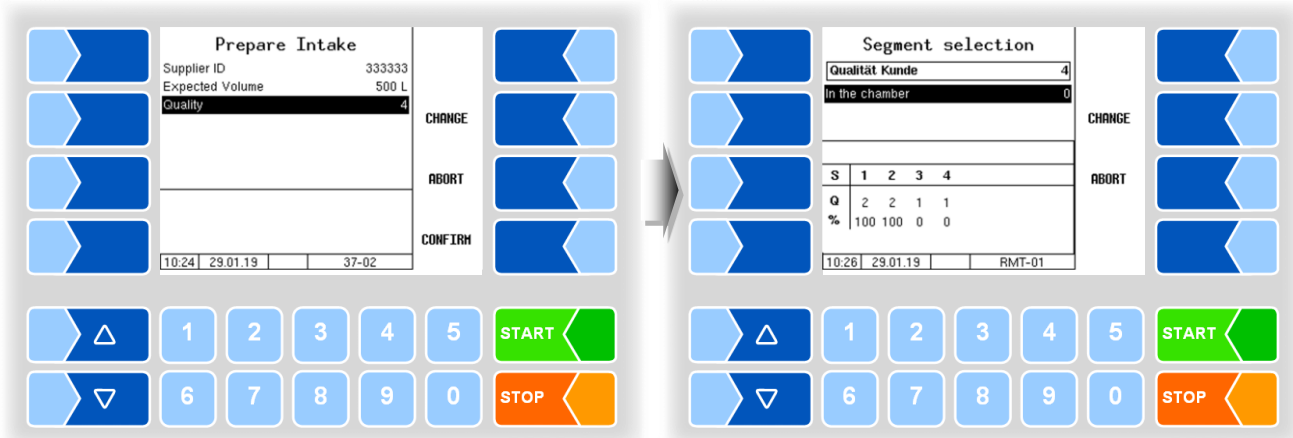
In the example, milk of quality 2 is to be accepted into segment 3. This will downgrade the quality level of segment 3 from 1 to 2.

Milk quality is not configured

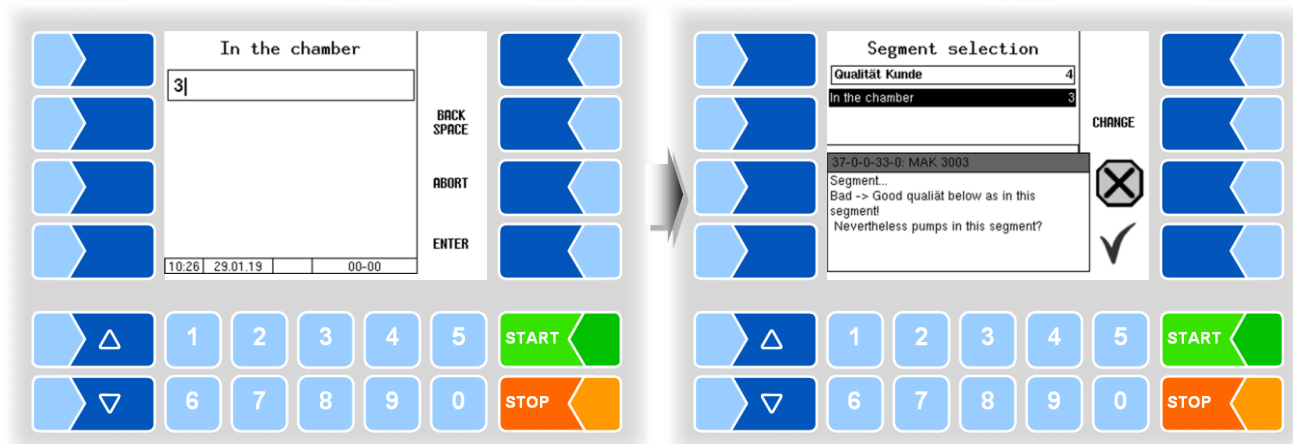
If you want to collect milk whose quality is not configured, you can select any segment for the intake. If the selected segment is empty, it receives the quality level of the milk to be collected. If the segment already contains milk, either the quality level of the segment or the quality of the milk to be collected is downgraded to the lower quality.

Example

Milk of quality 4 is to be collected, but only quality levels 1 and 2 are available in segments 1 to 4.



Segment 3 is selected for the intake. When the intake occurs, the quality level of the segment is downgraded from 2 to 4.



Reserve capacity If an intake is interrupted shortly before its end because the segment is full, you can keep the previously active segment. A reserve capacity of 100l is released for the full segment and the intake can be completed.




The release of 100l each is also possible when the reserve capacity is exhausted. Note the danger of segment overflow!




You can change the milk quality after the pump stops due to the high or low limit values for temperature or pH value being exceeded.

Possible messages for raw milk separation

Segment selection	
Qualität Kunde	1
In the chamber	1
CHANGE	
37-0-0-34-0: MAK 3003	
Segment..	
Good -> Bad quality better than in this segment!	
Nevertheless pumps in this segment?	







The quality of the milk to be collected is better than the quality level of the selected segment.

If the segment is empty, the quality level is upgraded to the quality of the milk to be collected.

If milk is already in the segment, the milk to be collected is downgraded to the quality level of the segment.


Segment selection	
Qualität Kunde	4
In the chamber	3
CHANGE	
37-0-0-33-0: MAK 3003	
Segment..	
Bad -> Good qualität below as in this segment!	
Nevertheless pumps in this segment?	





A segment was selected with a quality better than the quality of milk of the current intake. The milk intake leads to the downgrading of the quality level of the segment to the quality of the current intake for the remaining duration of the tour.

Segment selection	
Qualität Kunde	2
In the chamber	3
CHANGE	
37-0-0-35-0: MAK 3003	
Segment..	
This segment is not allowed!	
Select another segment?	



It is not possible to intake milk into the selected segment, the attempted change of the preset quality level is not released by the configuration.

Events			
A	Cause	Oc	Time Ac
!	Tank compartment full	1x	10:30 N
Sequence Controlling			
Tank compartment full			
CONFIRM			
Total: 1		61-0-0-5-0	

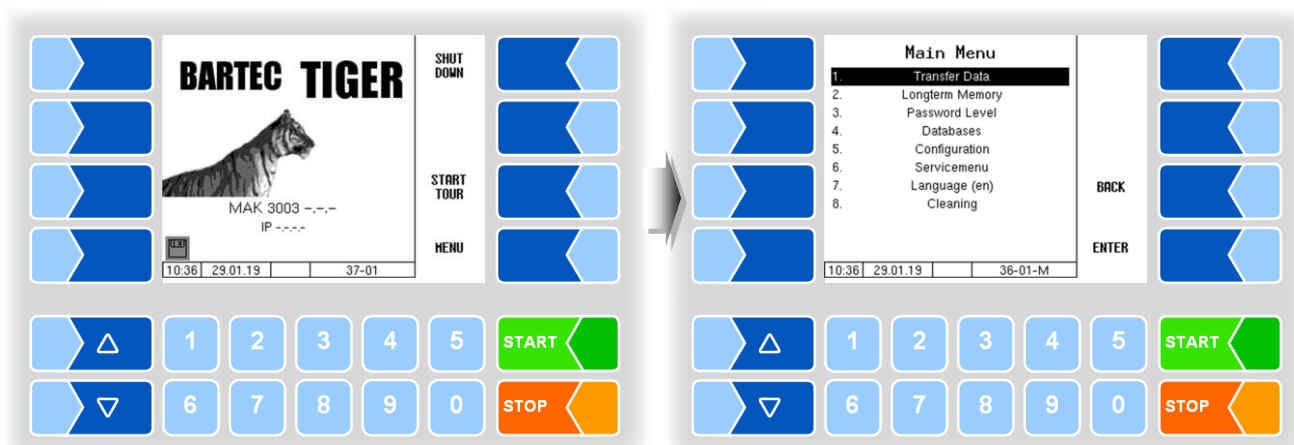
The currently selected tank segment is full. Select a different tank segment (see page 44).

11 Data transfer to the office

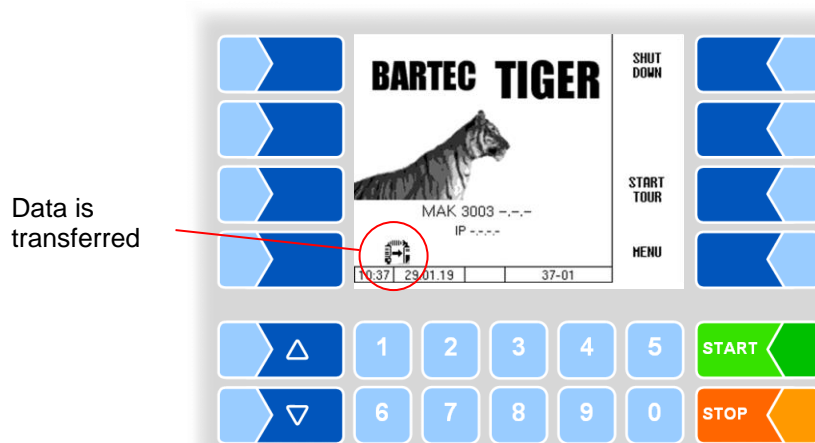
The recorded data are transferred via an internet connection using the configured FTP server.

You can start the data transfer in the main menu (see also section 14.1). The disk symbol at the bottom left of the display indicates that the vehicle has data to send.

- Touch the soft key **[MENU]**. The submenus of the main menu are displayed.
- Confirm the menu item "Transfer Data".



A symbol on the display indicates that the data are being transferred. All as yet not transferred tour data are transferred to the designated server. The data are processed there in the format specified for the dairy and made available for the dairy to collect.



The flashing disk symbol in the bottom left corner of the display disappears when the data have been transferred.

12 Tour menu

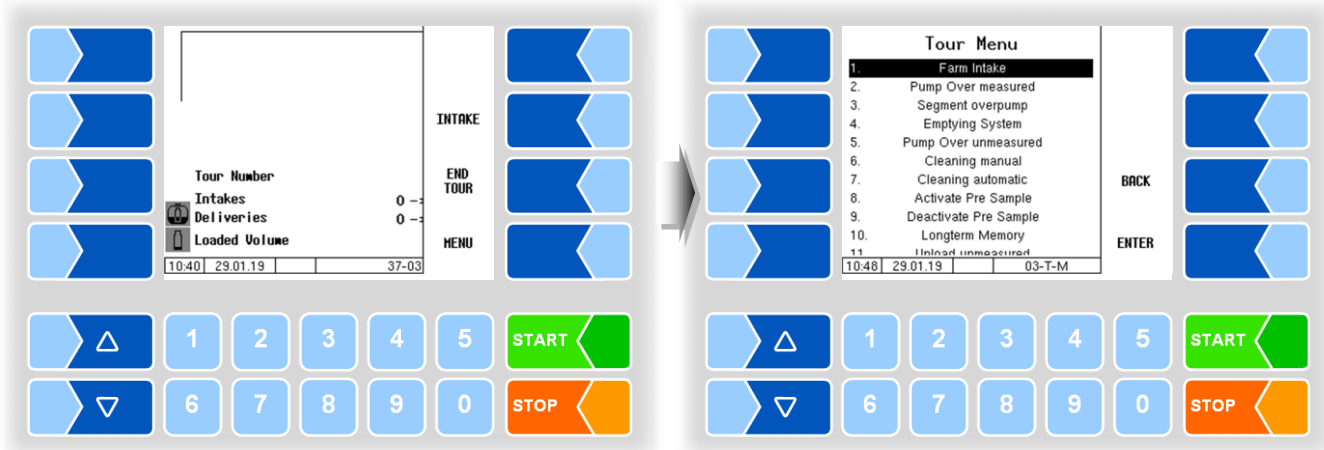
During the tour you can use the soft key **MENU** to access a number of special functions.

Which functions are available via this soft key depends on the current operating status, the type of collection truck and the configuration of the system.

The following special functions may be available:

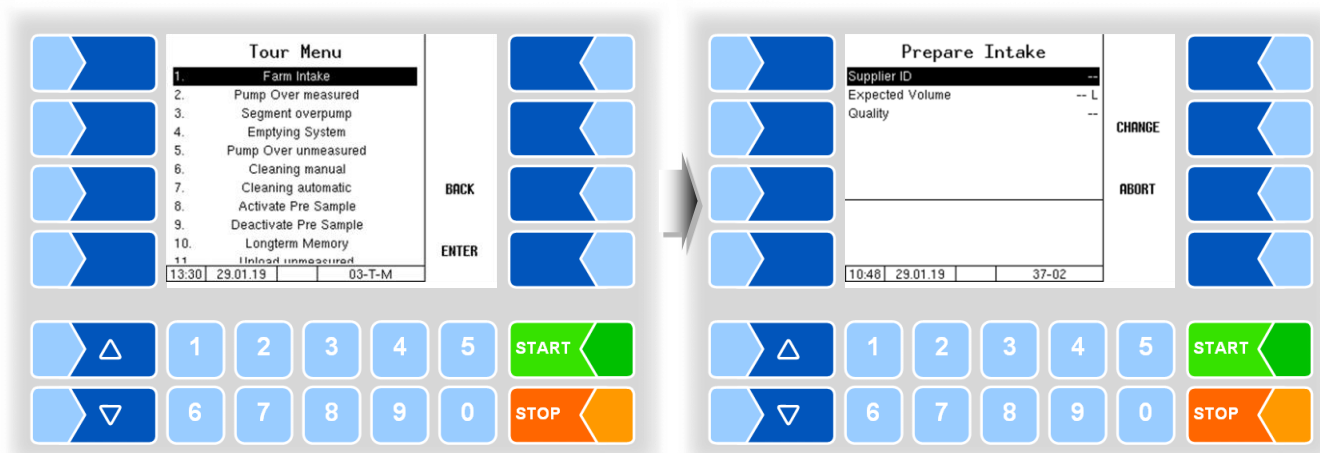
Function	Section
Intake	12.1
Pump over measured	12.2
Pump over segment	12.3
Drain the measuring system	12.4
Pump over unmeasured	12.5
Manual cleaning	12.6
Automatic cleaning	12.7
Activate pre-sample	12.8
Pre-sample switched off	12.9
Long-term memory	12.10
Unloading unmeasured	12.11
Driver number input	12.12
Tank segment levels	12.13
Tank segment quality	12.14

After starting the tour, you can call up the tour menu with the soft key **MENU**.



12.1 Intake

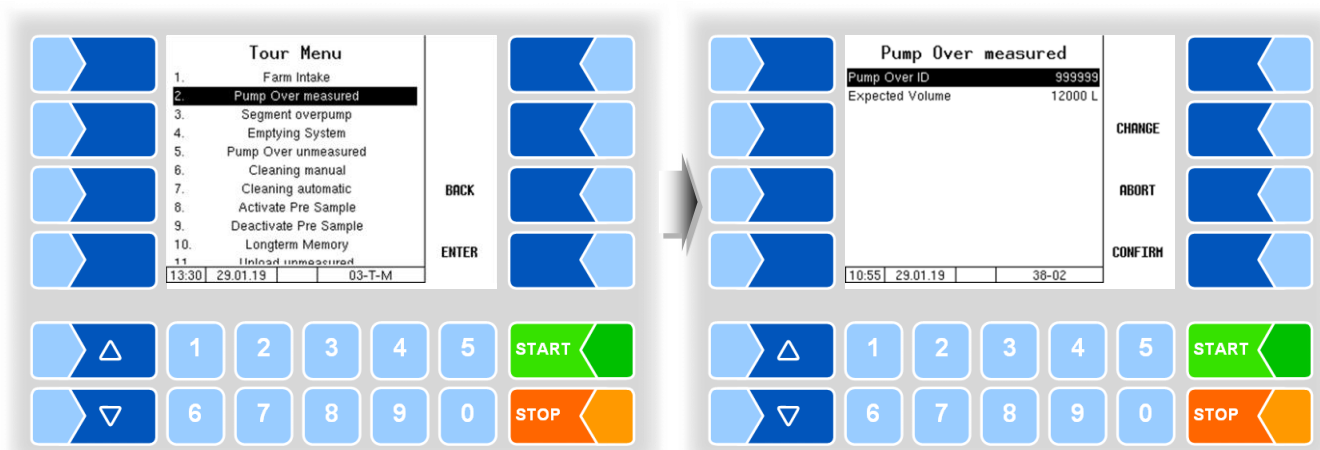
To change intake data, you can call up the intake dialogue manually.



12.2 Pump over measured

During the tour it may be necessary to pump milk, e.g., over to a trailer to get free tank capacity for further intakes. The pumping over can be measured or unmeasured (see section 12.5).

If you want to record the quantity pumped over, select "Pump over measured" in the tour menu.



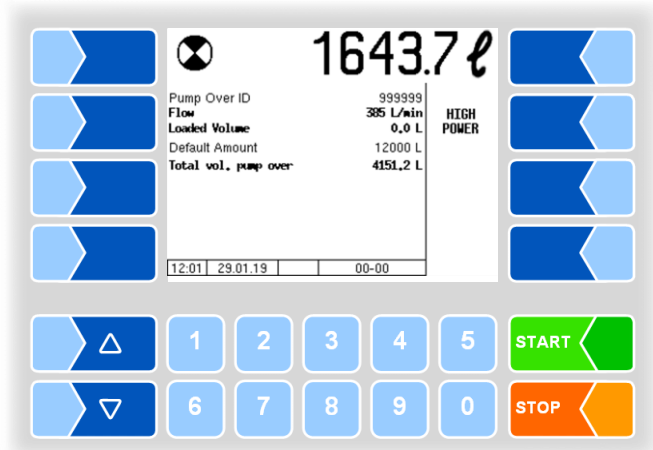
- If required, you can enter a pump-over ID; you can specify the pump-over volume as a preset quantity.

For pumping over, fixed pump-over IDs can also be stored in the configuration. This allows the same pump-over ID to be transferred at different pump-over locations.

- Start the pump-over by confirming the entries with the soft key **CONFIRM**.

You can stop and resume pumping over using the buttons **STOP** and **START** on the controller or with the remote control.

During the pump-over you can adjust the pump-over power to various configurable flow rates using the soft key **LOW POWER** or **HIGH POWER**. This may be necessary, for example, to fill a tank to its capacity limit or to reduce foam formation.

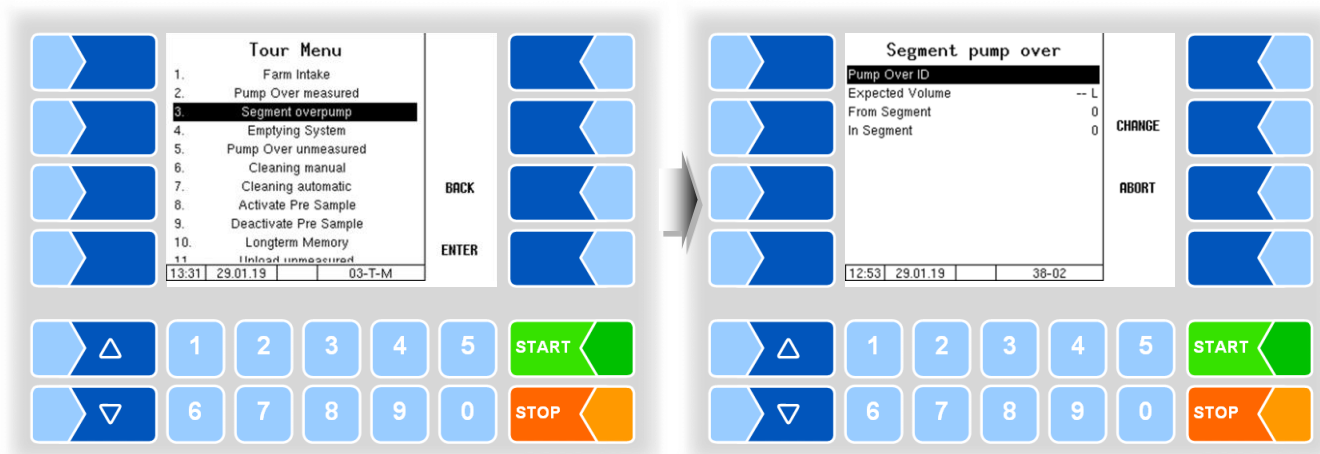


12.3 Pump over segment

The contents of a tank segment can be pumped over if necessary. Logic output 16 must be configured for this.

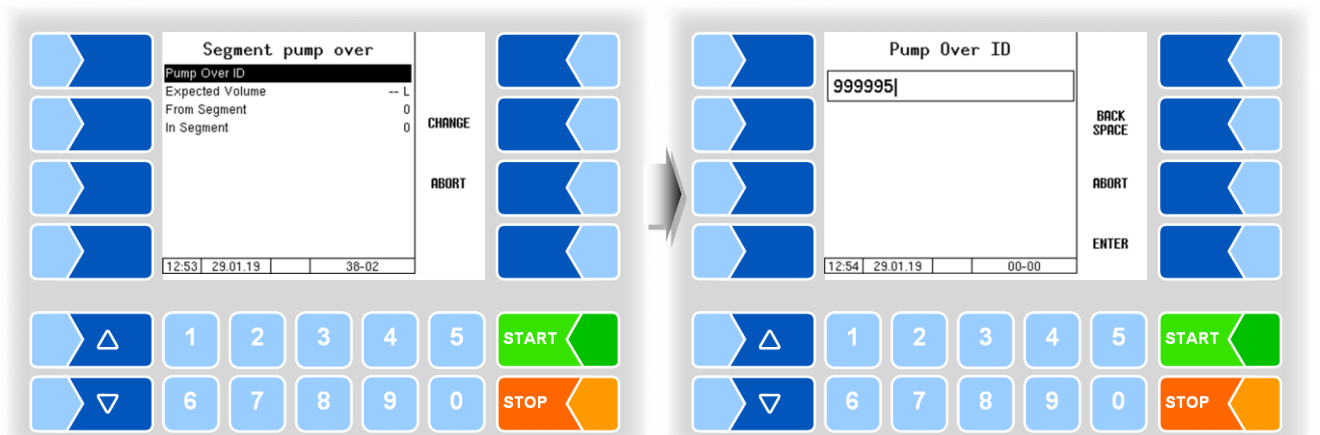
The menu item "Segment overpump" is displayed in the tour menu.

- Select the menu item "Segment overpump".



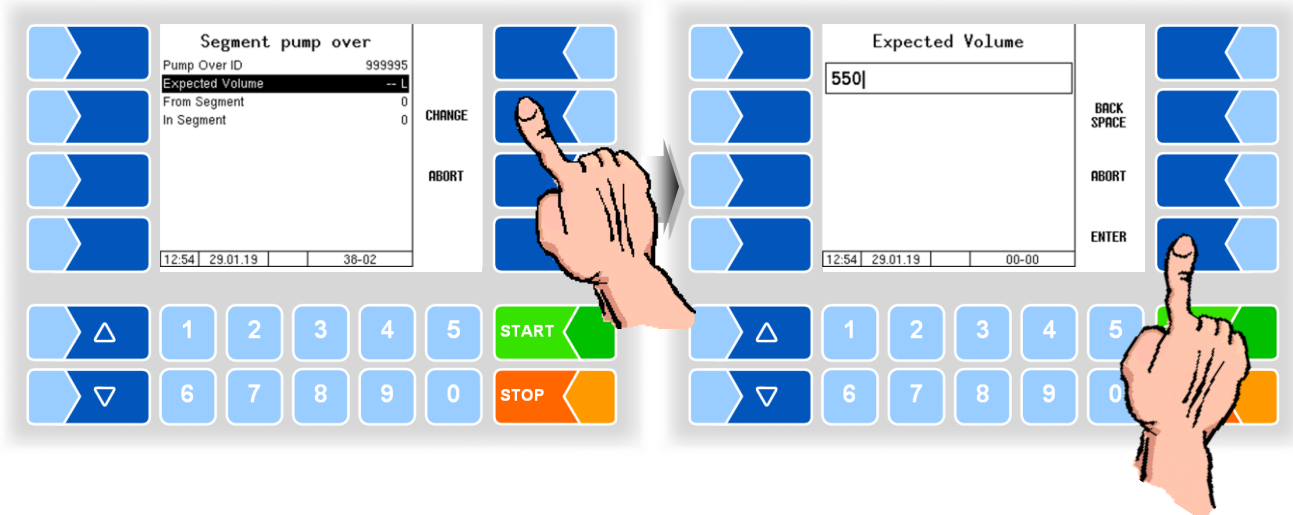
Pump Over ID

- Select the menu item "Pump Over ID" and touch the soft key "CHANGE" if you want to enter a Pump Over ID (depending on configuration, see section 12.2).
- Enter the Pump Over ID and confirm it with **ENTER**.



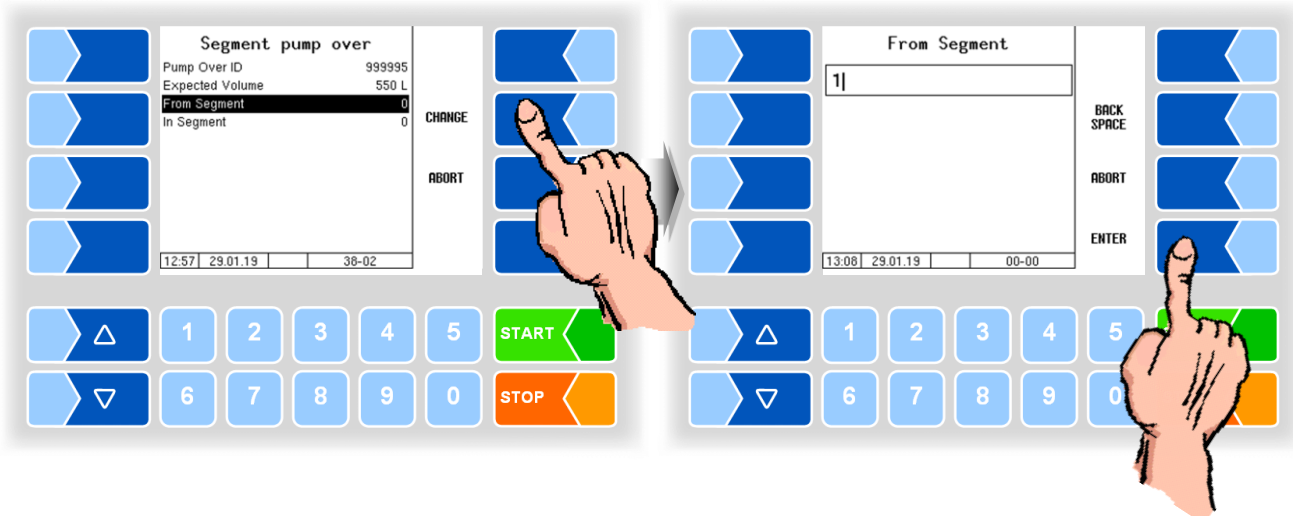
Preset quantity

- Optionally, you can enter a preset quantity at which the pumping over is automatically stopped.



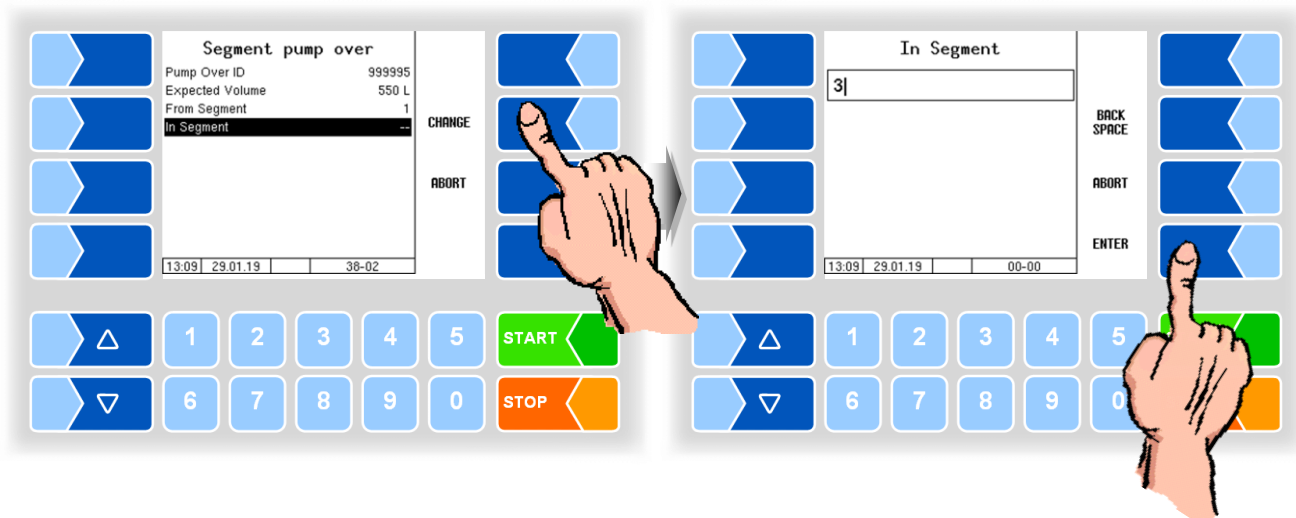
Source segment

- Enter the number of the segment from which the milk is to be pumped.



Target segment

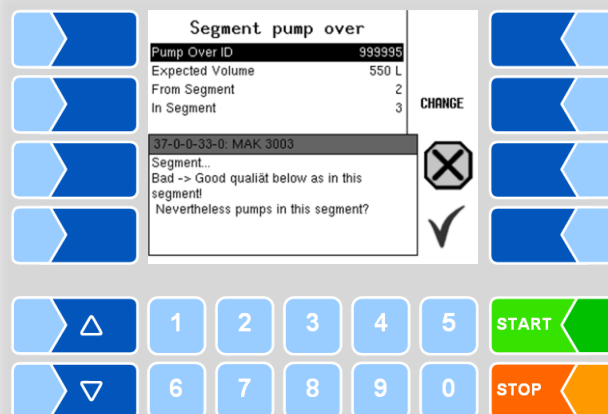
- Enter the number of the target segment into which the milk is to be pumped.



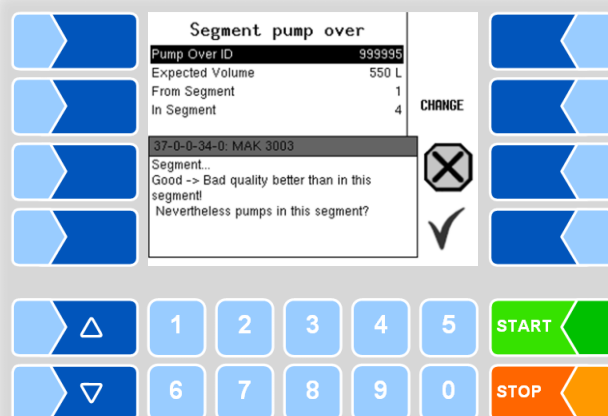
Raw milk separation

If raw milk separation is active, the system checks whether the quality level of the milk in the target segment matches the quality level in the source segment. If this is not the case, the system issues a corresponding message. Repeat the segment selection if necessary.

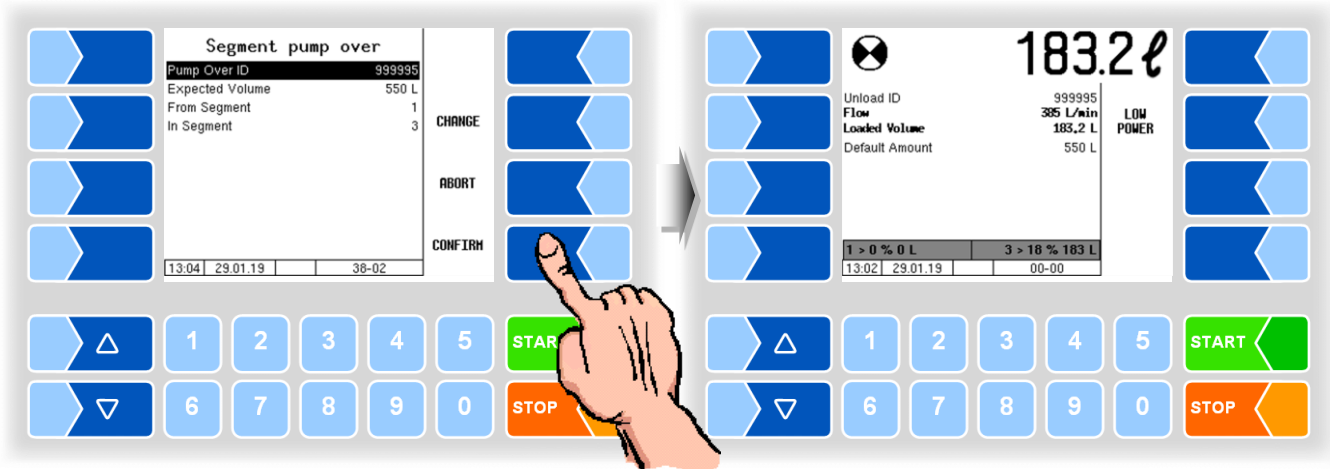
The target segment is intended for milk of a higher quality than the milk from the source segment. The pump-over leads to a downgrading of the quality level of the target segment.



The target segment is intended for milk of a lower quality than the milk from the source segment. In this case, the pumped-over milk is downgraded to the quality of the target segment.



The pumping-over process starts when the entries have been confirmed. The pumped quantity is measured and the process is recorded.

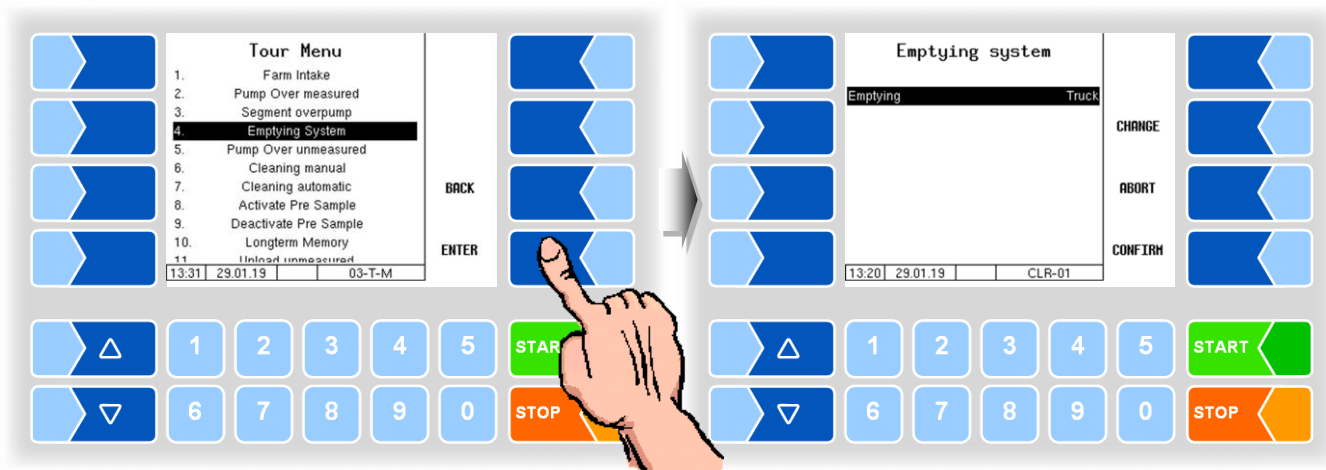


12.4 Drain the measuring system

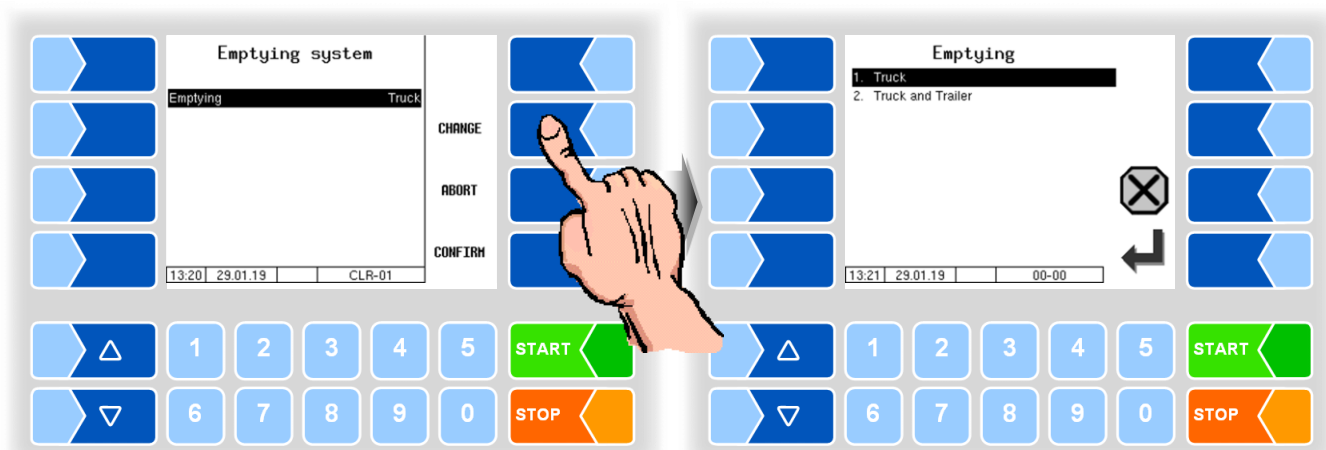
When this menu item is confirmed, the milk in the measuring system is forced into the tank with compressed air.

This may be necessary, e.g., before unloading to ensure that no milk remains in the measuring system.

Vehicles with trailers can be configured so that the driver can choose whether only the line to the tank in the towing vehicle is emptied or also the line to the tank in the trailer.



- Touch the soft key **CHANGE** to select the draining option.

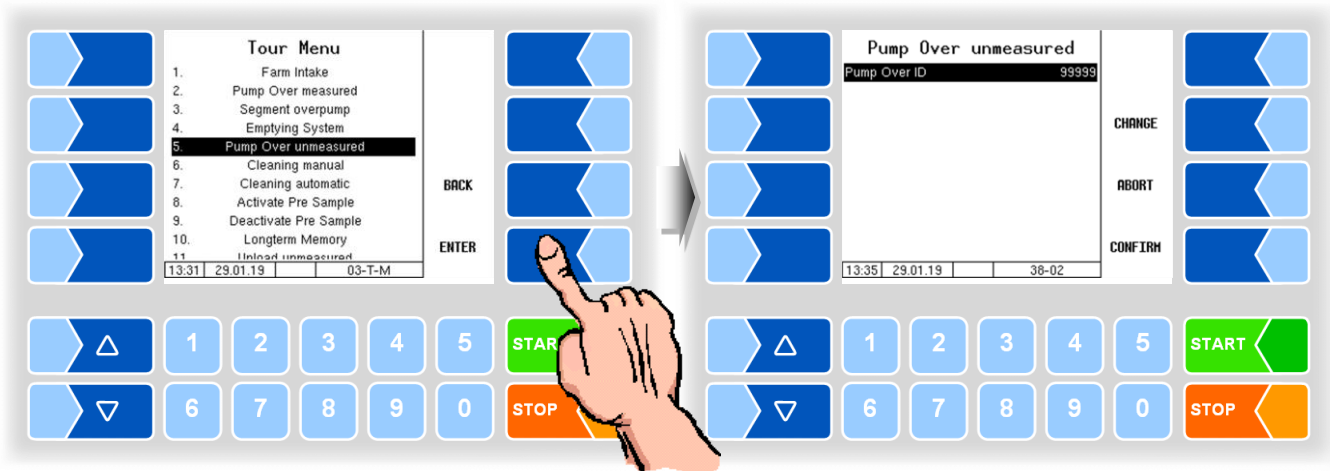


- | | |
|--|---|
| <ol style="list-style-type: none"> 1. Truck: 2. Truck and Trailer: | <p>Only the line to the tank in the towing vehicle is emptied.</p> <p>The line to the tank in the towing vehicle is emptied and then the line to the trailer.</p> |
|--|---|

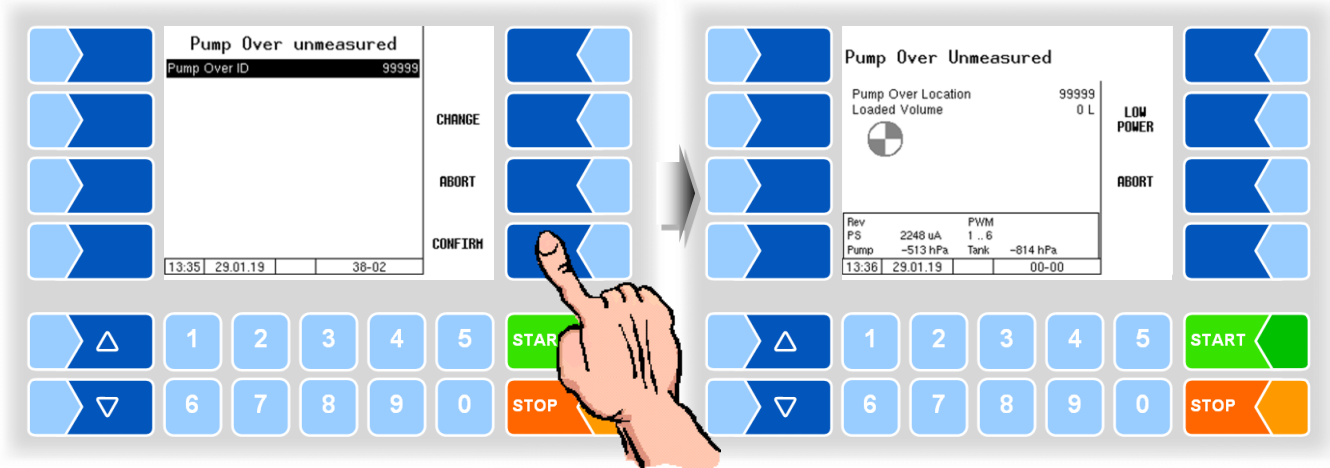
12.5 Pump over unmeasured

Pump over unmeasured is only possible if additional piping with valve 13 (see technical description TIGER 3003) is available and logic output 13 is configured.

If you do not want the quantity to be recorded during the pump-over, select "Pump over unmeasured" from the tour menu.

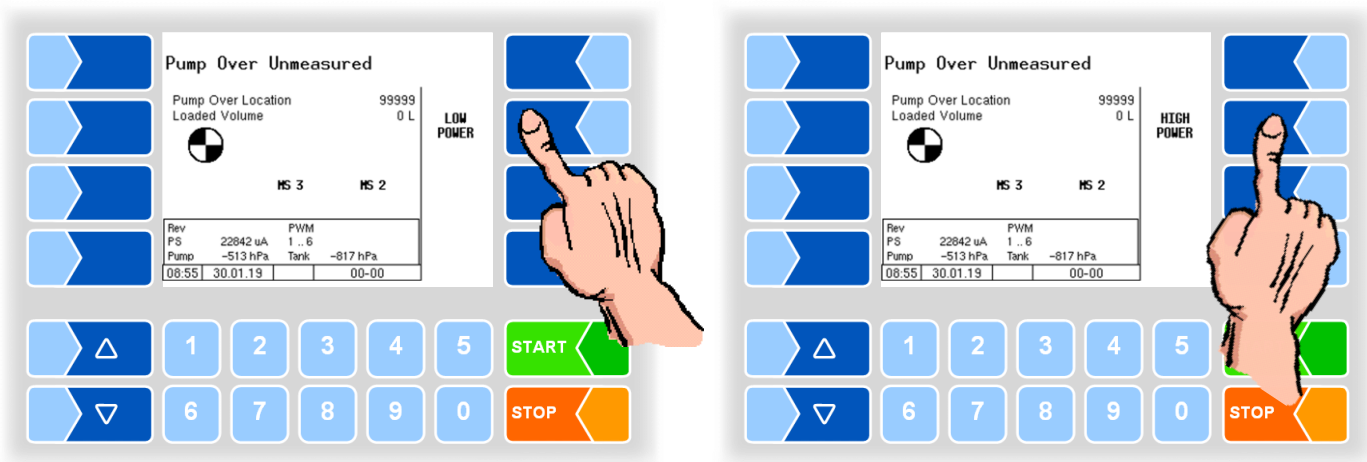


- Enter the Pump Over ID (configuration-dependent).
- Start the pump-over by confirming the entries with the soft key **CONFIRM**.



You can stop and resume the pumping over using the buttons **STOP** and **START** on the controller or with the remote control.

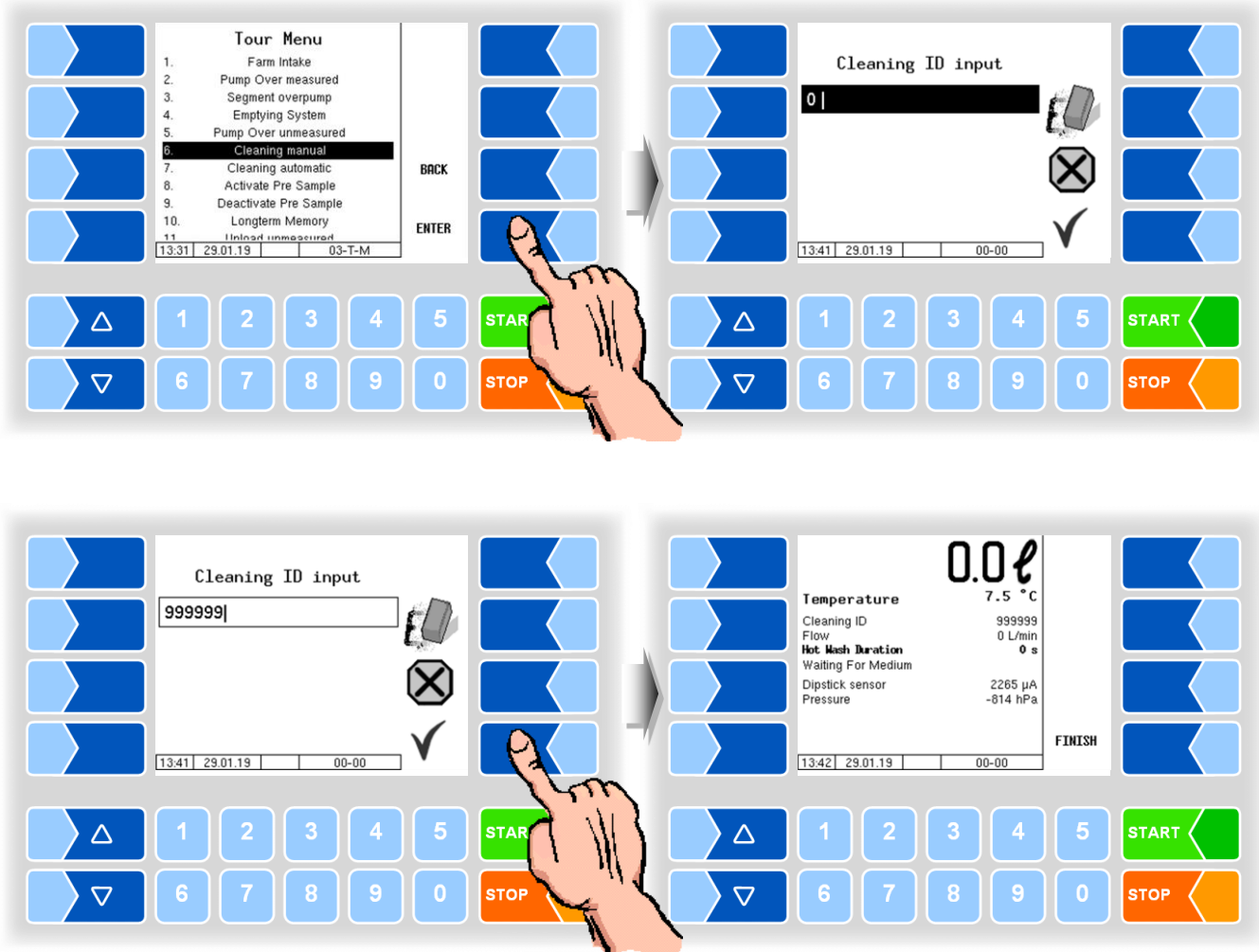
During the pump-over you can adjust the pump-over power to various configurable flow rates using the soft key **LOW POWER** or **HIGH POWER**. This may be necessary, for example, to fill a tank to its capacity limit or to reduce foam formation.



12.6 Manual cleaning

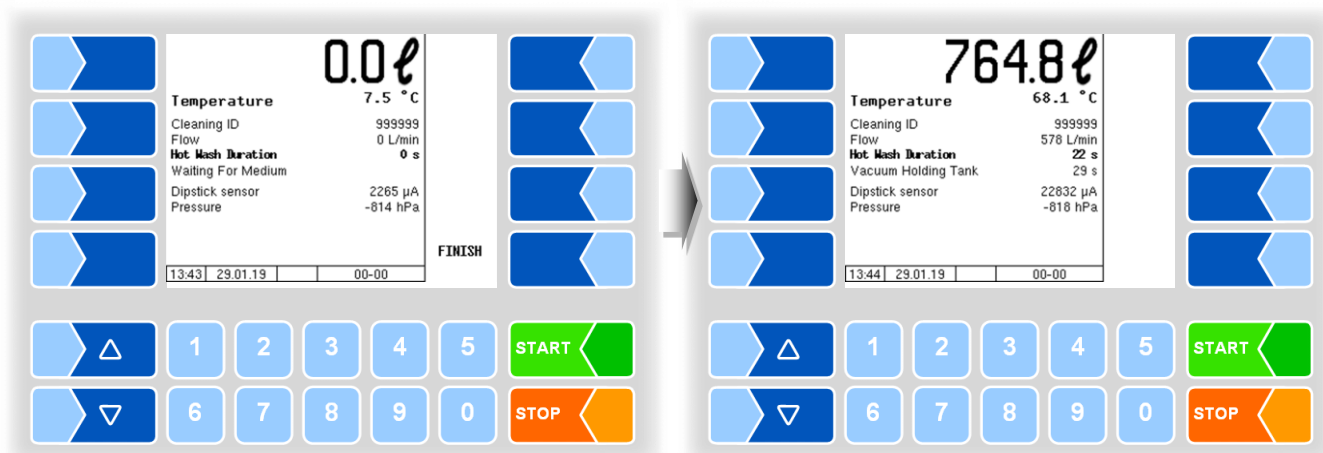
The collection truck must be cleaned at the end of the tour in accordance with the operating instructions in force at the respective dairy plant.

If no cleaning ID is entered in the configuration, you must enter the cleaning ID.



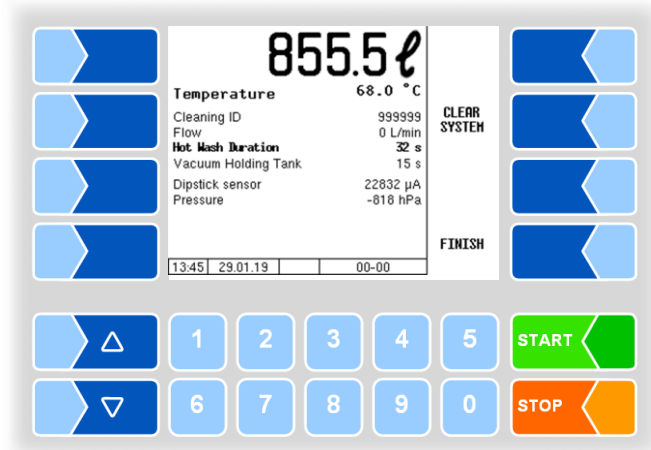
The cleaning ID does not need to be entered if it is specified in the configuration.

- The cleaning process starts and the cleaning data appear on the display.

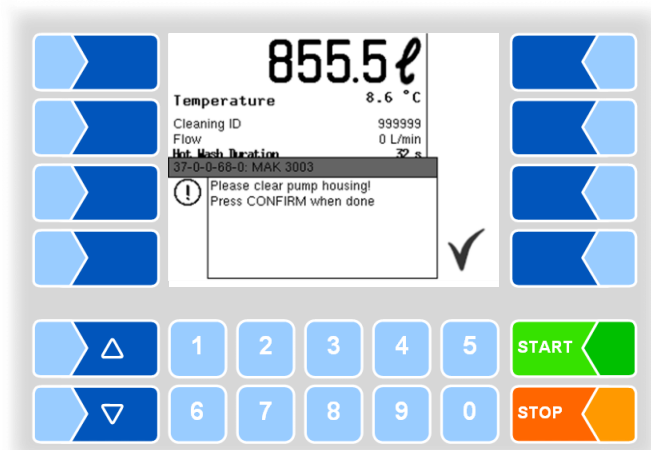


As soon as the flow rate reaches 0 L/min., the soft key **CLEAR SYSTEM** is displayed.

Depending on the regulations applicable to the dairy, you can now empty the air separator when changing the cleaning medium. To do this, touch this soft key.



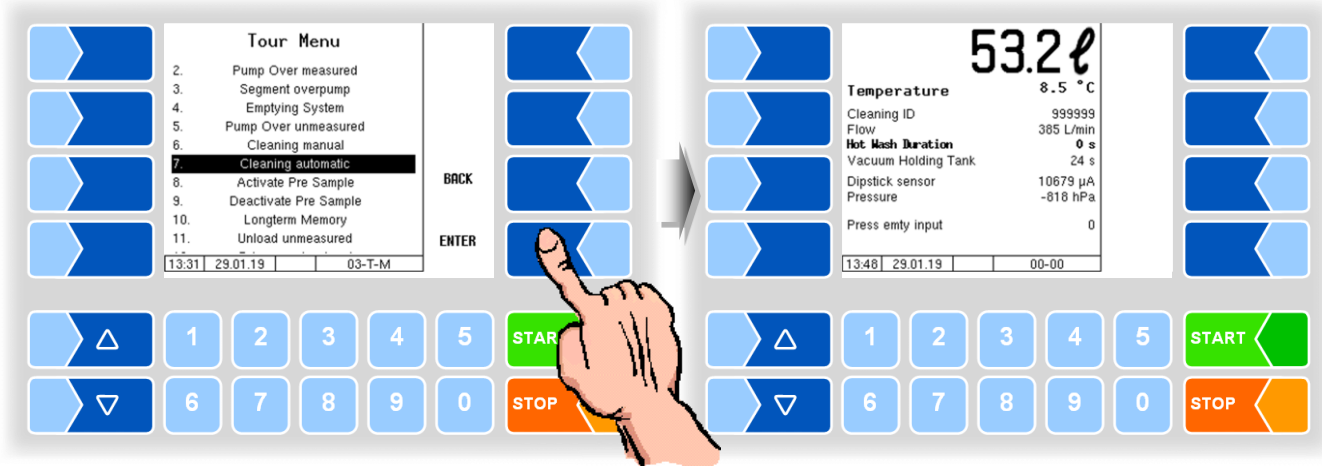
After the air separator is emptied at the end of the cleaning process, a prompt to empty the pump housing is displayed.



- Open the pump housing and empty the remaining liquid completely.
- Then confirm emptying of the pump housing with the soft key .

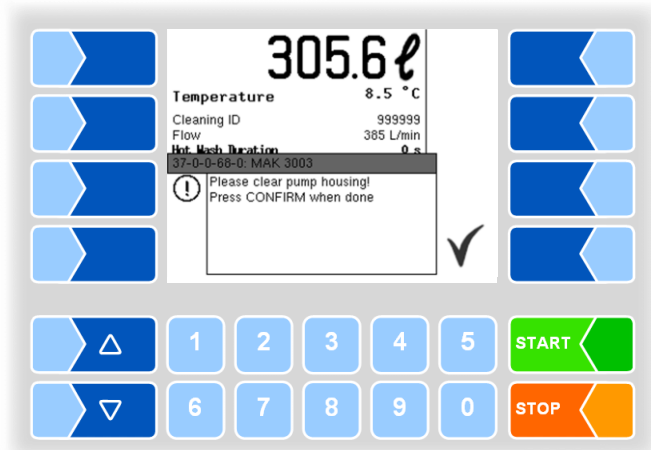
12.7 Automatic cleaning

Automatic cleaning is started in the same way as manual cleaning (see section 12.6).



The system is automatically emptied (e.g., triggered by a compressed air signal from the dairy).

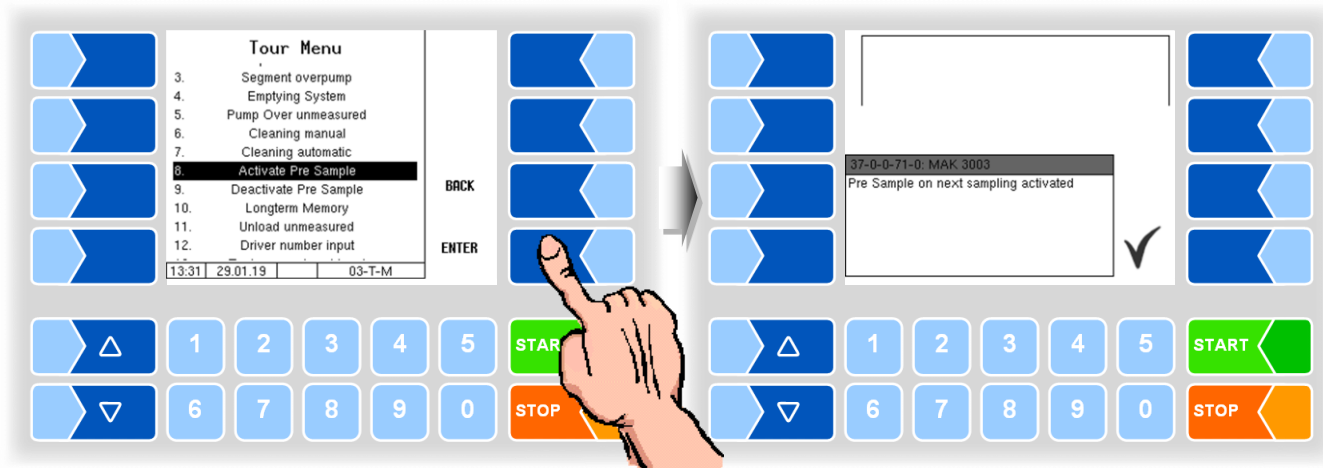
After the air separator is emptied at the end of the cleaning process, a prompt to empty the pump housing is displayed.



- Open the pump housing and empty the remaining liquid completely.
- Then confirm emptying of the pump housing with the soft key .

12.8 Activate pre-sample

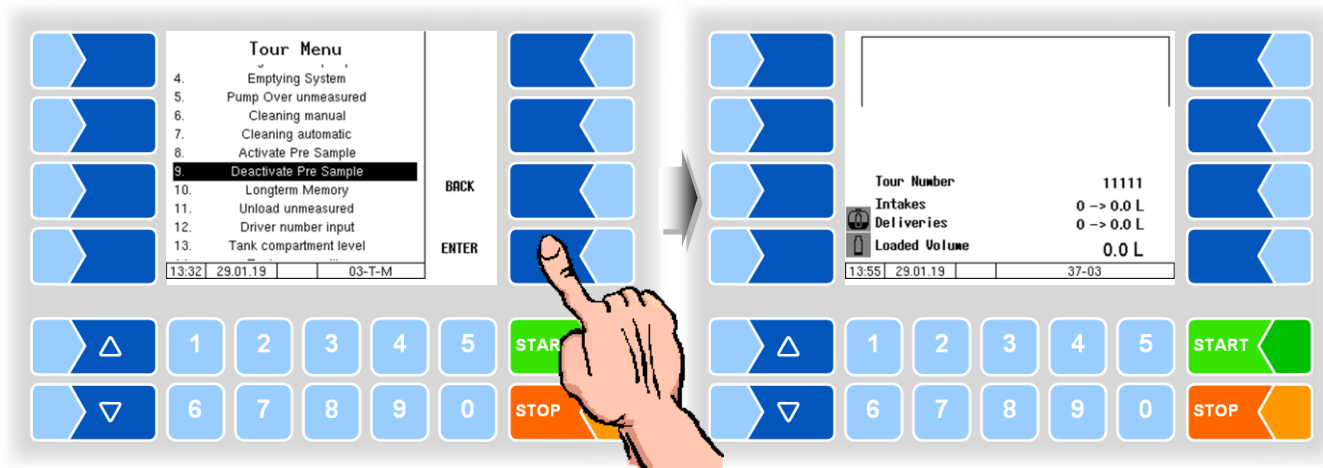
If "Presample" is configured, you can manually activate or deactivate the pre-sample (see section 12.9).



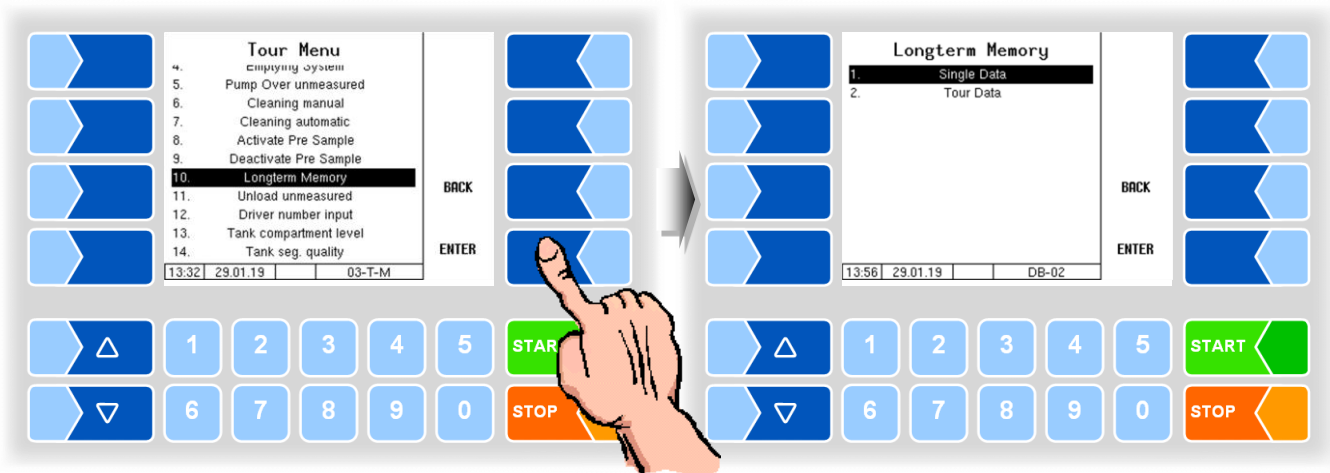
The configured number of additional pre-samples is taken before the next intake with sampling.

12.9 Pre-sample switched off

If "Presample" is configured, you can manually deactivate or activate the pre-sample (see section 12.8).



12.10 Long-term memory

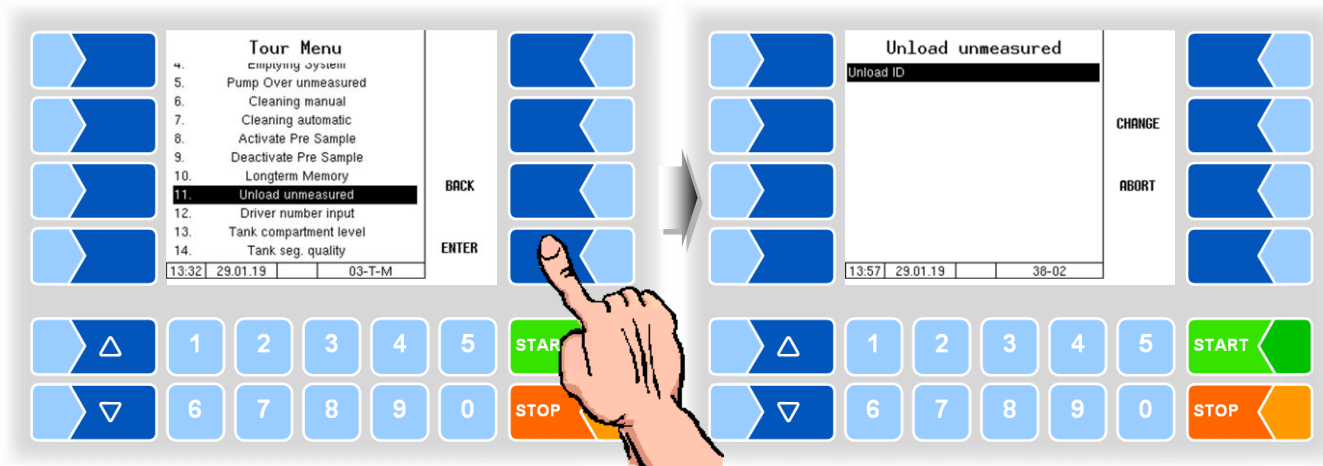


Collection and tour data from the past three months are stored in the long-term memory. You can view both tour data and single data.

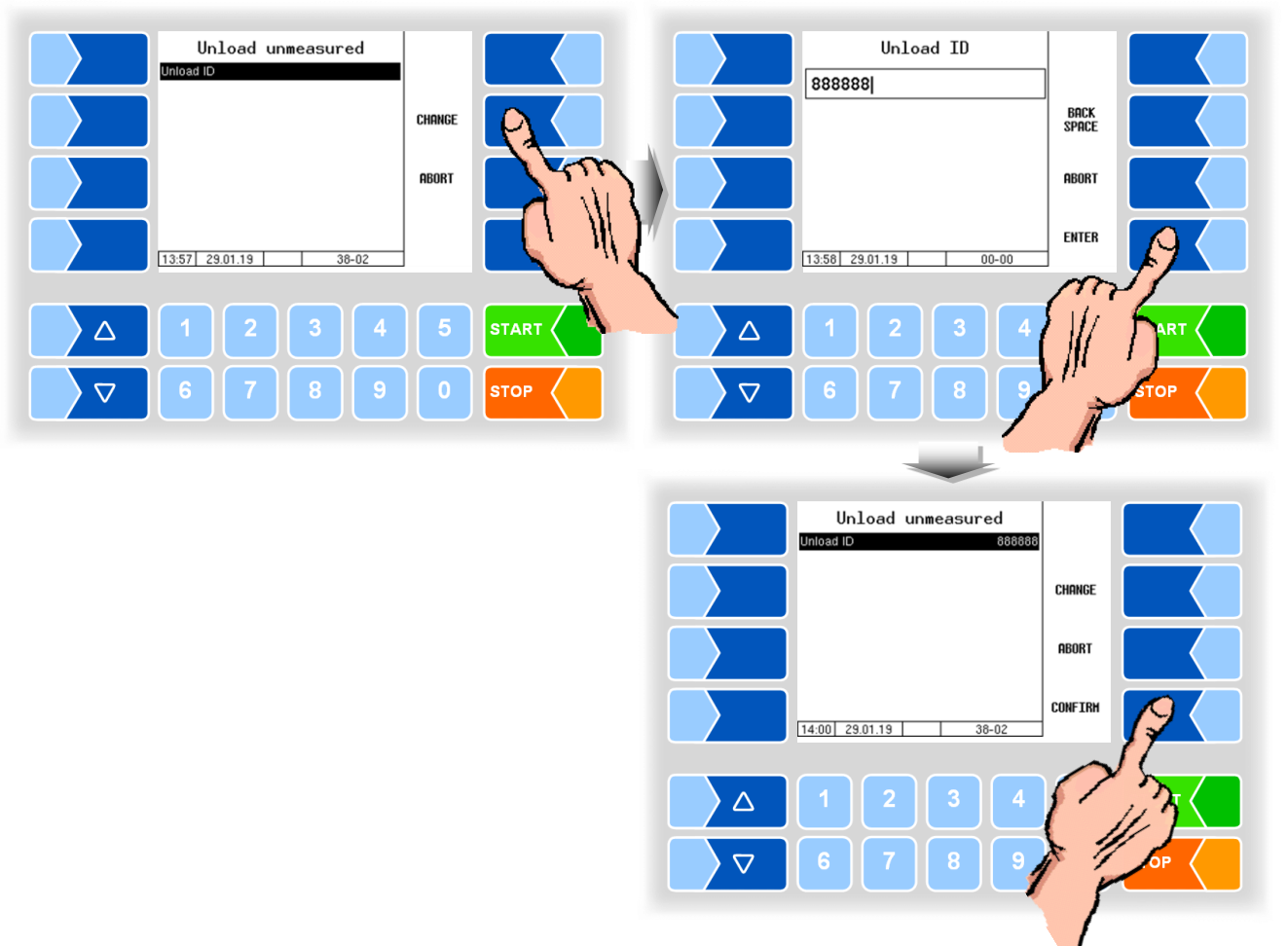
The long-term memory can also be viewed in the main menu (see section 14.2).

12.11 Unloading unmeasured

To carry out unloading in a dairy during the tour, select "Unload unmeasured" in the tour menu.



- Enter the unloading ID (configuration-dependent).

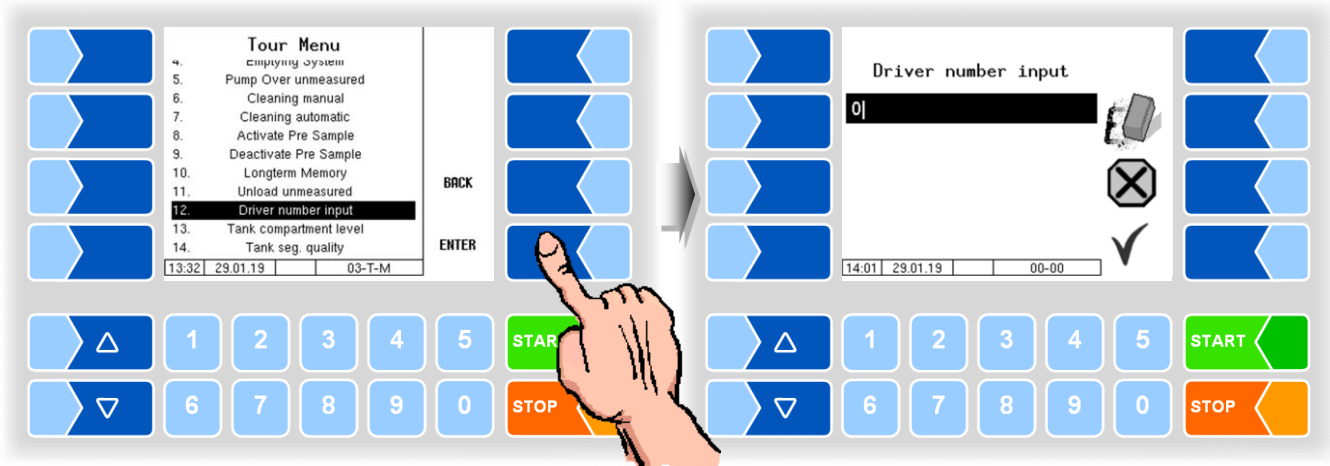


- Start the unloading by confirming the Unload ID with **CONFIRM**.

12.12 Driver number input

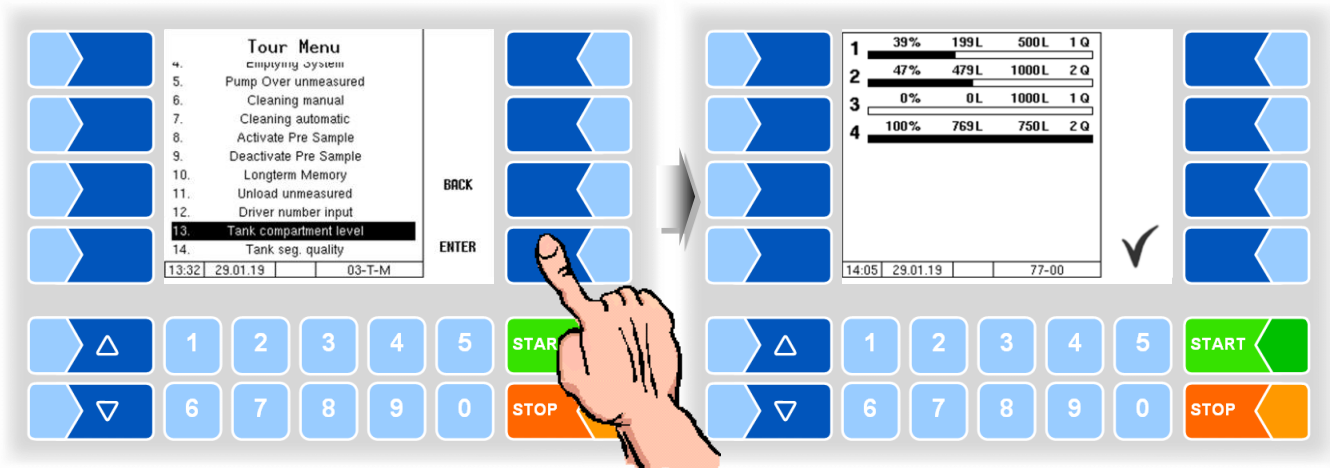
If there is a change in driver during the tour, the new driver number must be entered.

The change in driver is logged in the database.



12.13 Tank segment levels

You can check the fill level of the tank segments outside the intake.



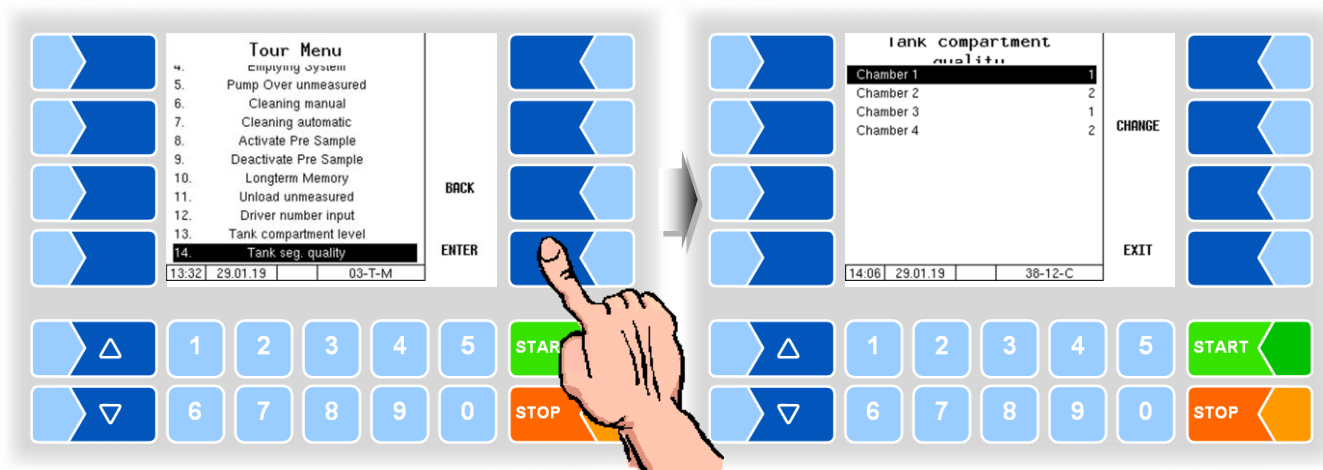
Touch the soft key to exit the segment status display.

With the numeric key you can call up the display of the tank segment levels directly (see section 13.2).

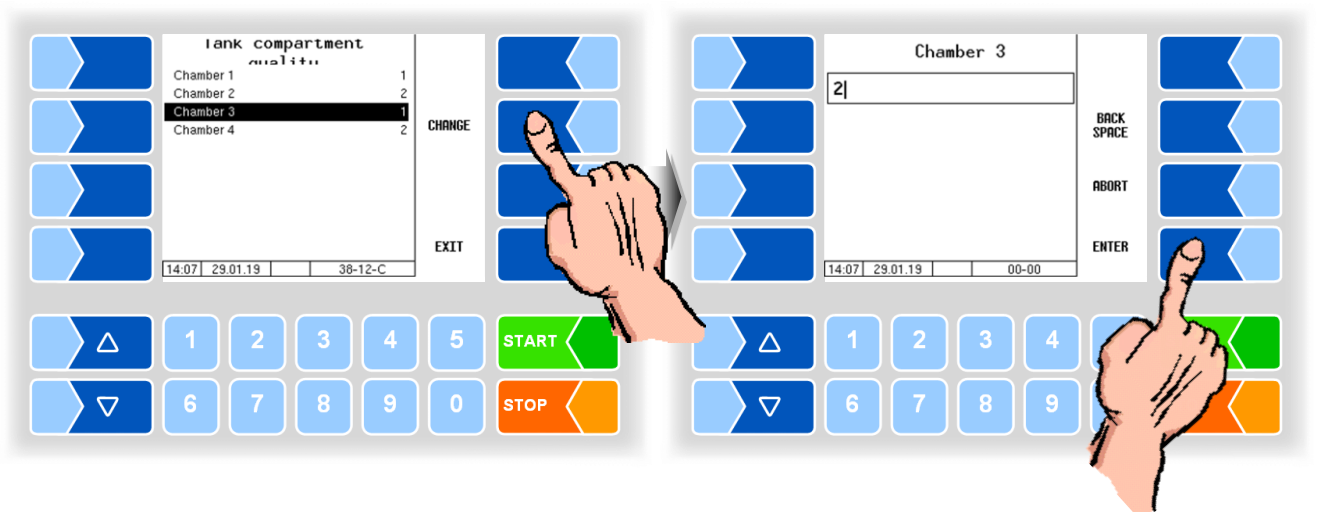
12.14 Tank segment quality

During intake, the milk can be filled into separate tank segments according to its quality. Qualities from 1 (good) to 8 (bad) are possible.

If you want to change the current quality assignment, select the "Tank seg. quality" item from the tour menu.



Select a compartment and touch the soft key **CHANGE**. You can then change the quality level of the selected compartment (segment).



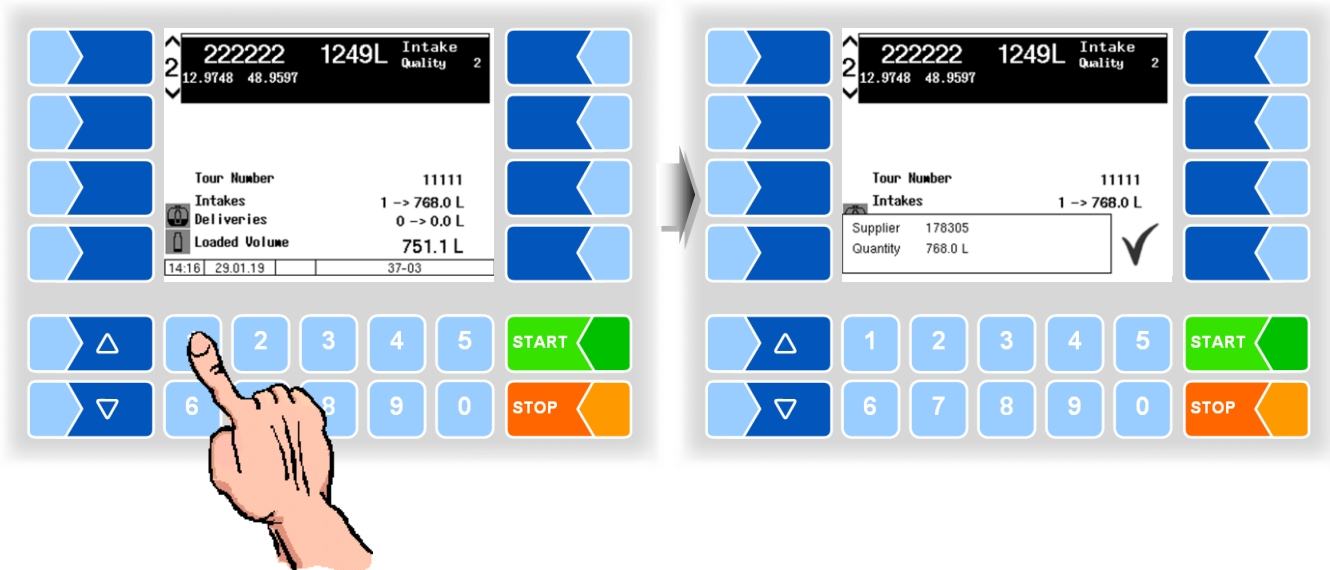
Further information on the quality assignment of the tank segments and the milk intakes can be found in chapter 10 Raw milk separation.

13 Shortcut keys

During the tour, you can call up various displays directly using the numeric keys.

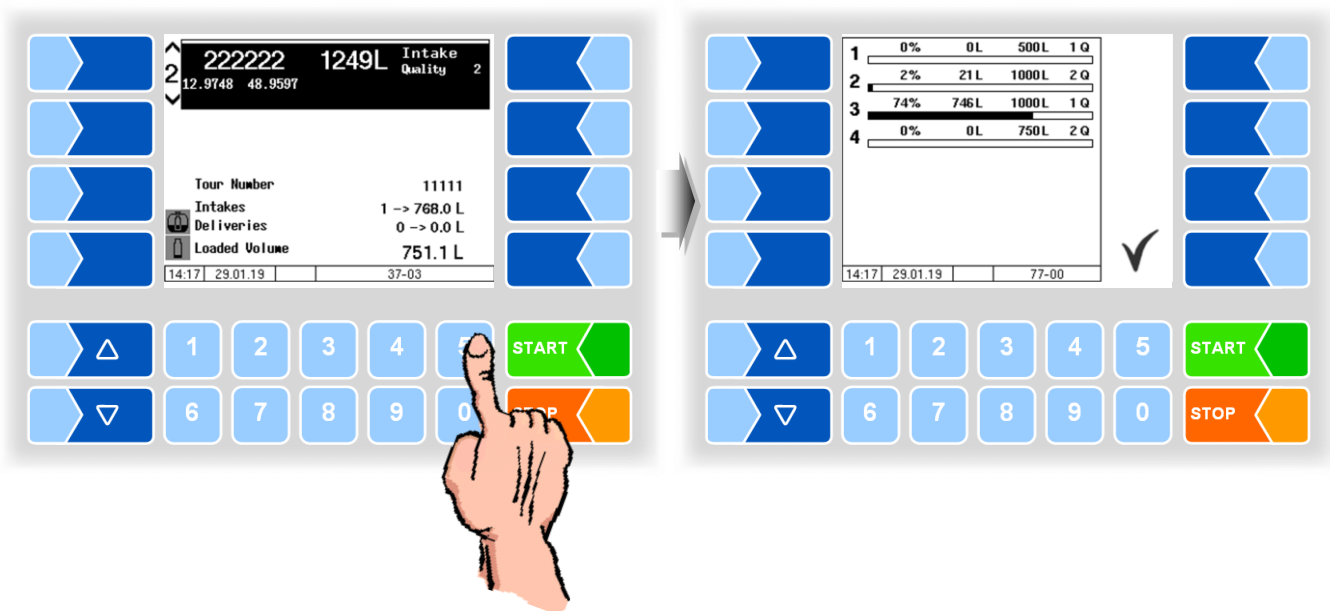
13.1 Intake data of the last supplier

Key 1



13.2 Tank segment levels

Key 5



14 Main Menu

When the home screen is displayed, you can use the soft key **MENU** to call up the main menu. It contains submenus which are used to configure the equipment and to access various functions.

The configuration menus and service menu are write-protected by password.

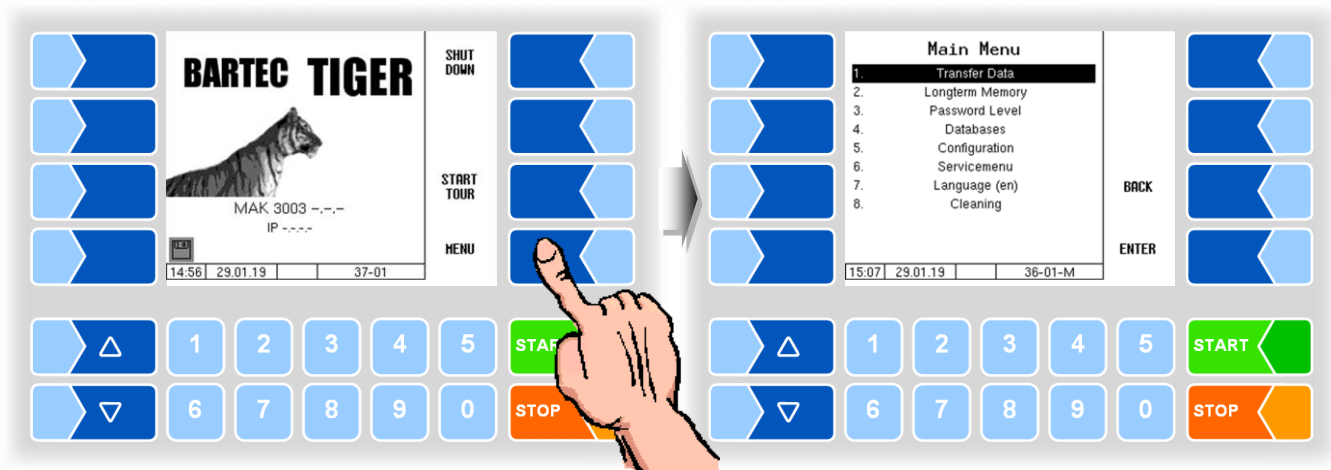


Only the menus and functions to which you have access without entering a password or after entering the driver password are described here.

You can open the submenus in the "Configuration" menu without entering a password, but you cannot make any changes.

Calling up the main menu

- Touch the soft key **MENU**. The submenus of the main menu are displayed.



Open menu

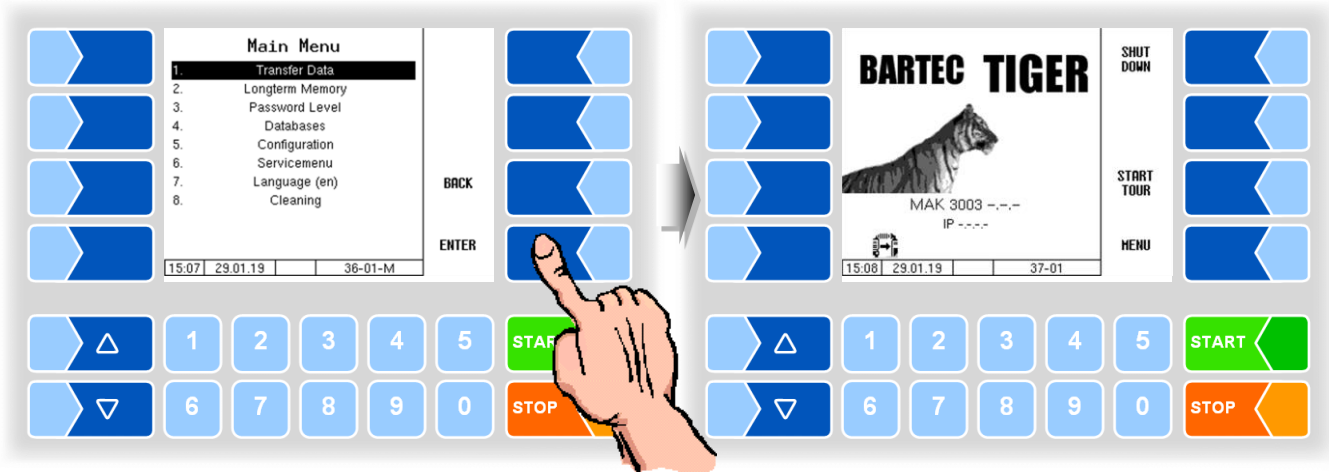
1. Using the selector keys **▽** and **△**, select the submenu that you want to open. The submenu selected is highlighted by a black bar.
2. Touch the soft key **MENU**. The menu opens.

You can also open the menu you require simply by keying in the number of the menu.

If the submenu also contains submenus, proceed in the same way to open the submenu you require.

14.1 Data transfer

Data transfer to the dairy is launched in this menu.



All as yet not transferred tour data are transferred to the designated server. The data are processed there in the format specified for the dairy and made available for the dairy to collect.

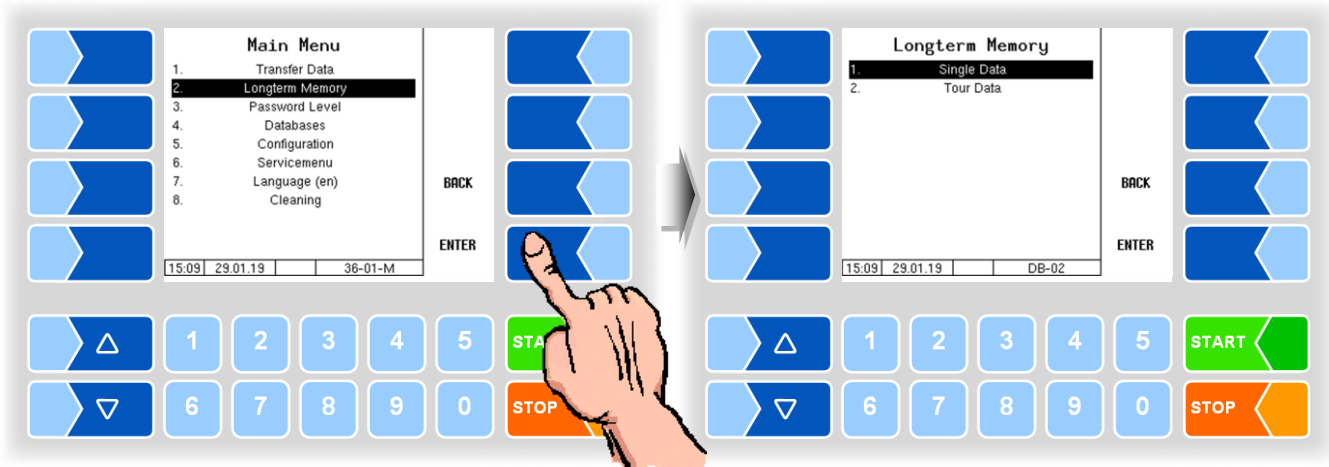
The flashing disk symbol in the bottom left corner of the display will disappear when the data have been transferred.

The data transfer is automatically started at the end of the tour, provided this is configured accordingly.

14.2 Long-term memory

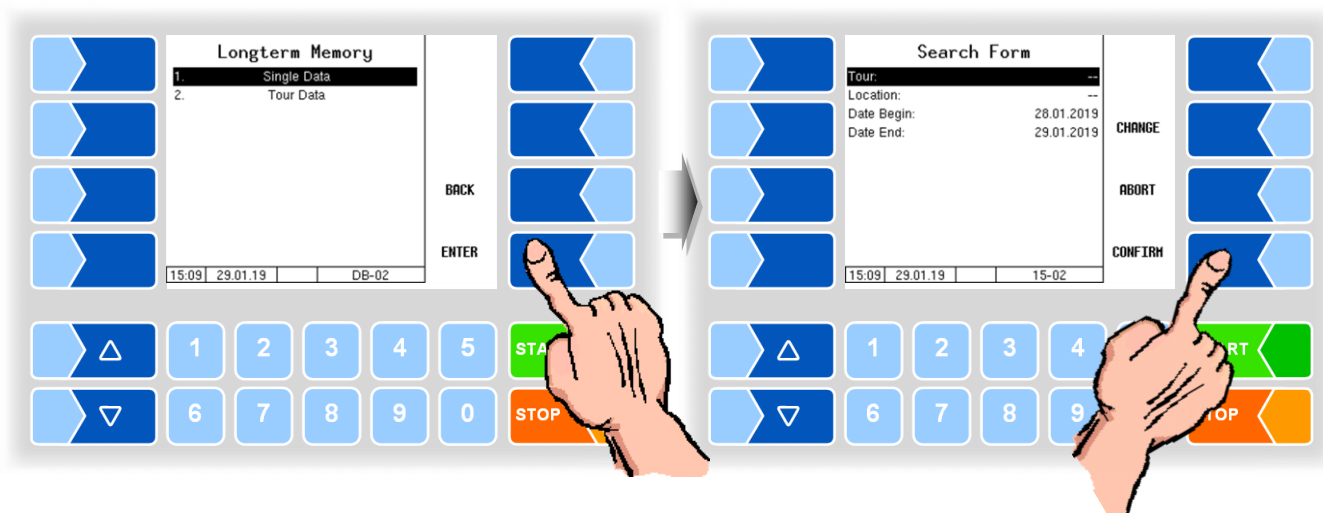
Collection and tour data from the past three months are stored in the long-term memory. You can view both tour data and single data.

You can also view the long-term memory in the tour menu (see section 12.10).

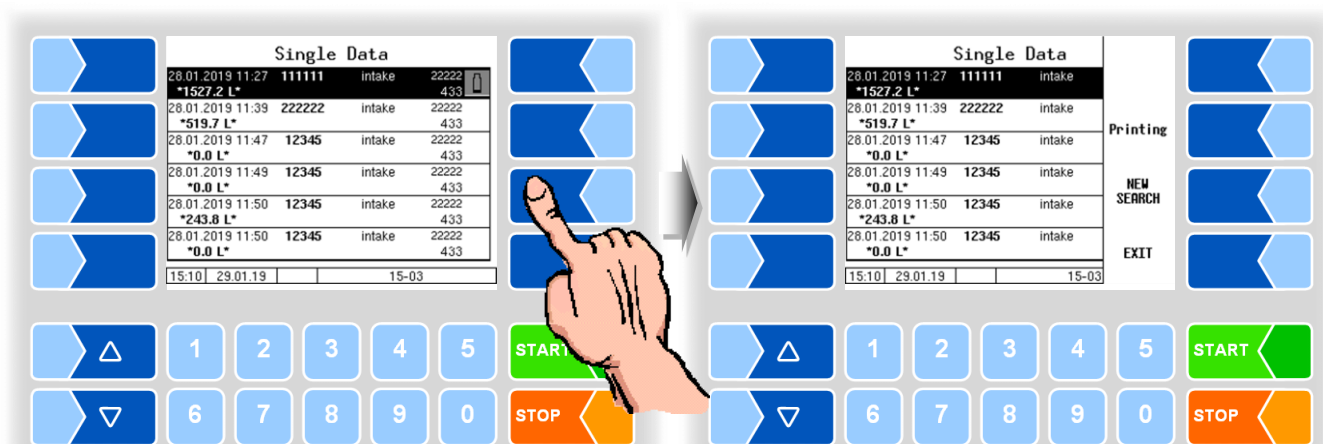


Single data

Enter the desired search criteria in the search form. Touch **CONFIRM** to start the search.

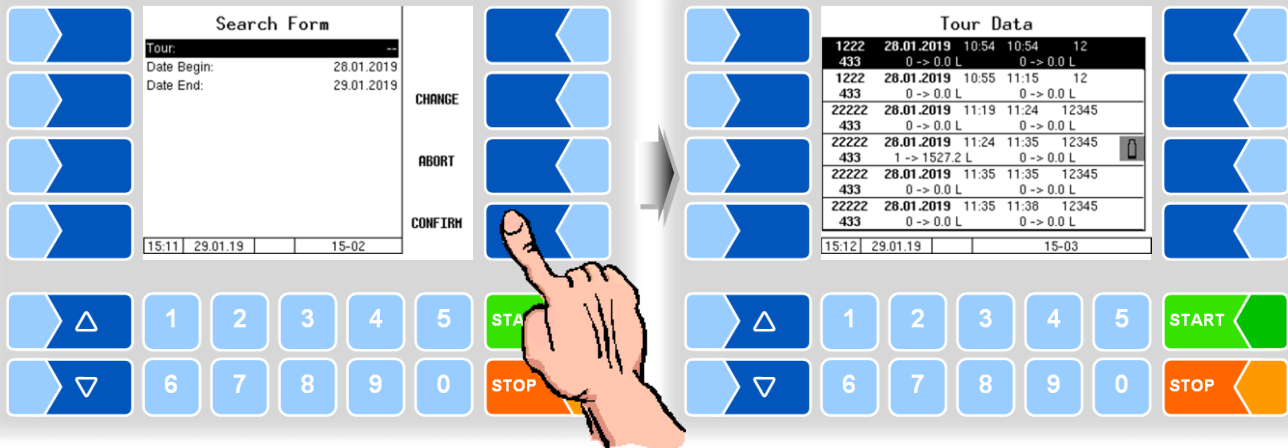
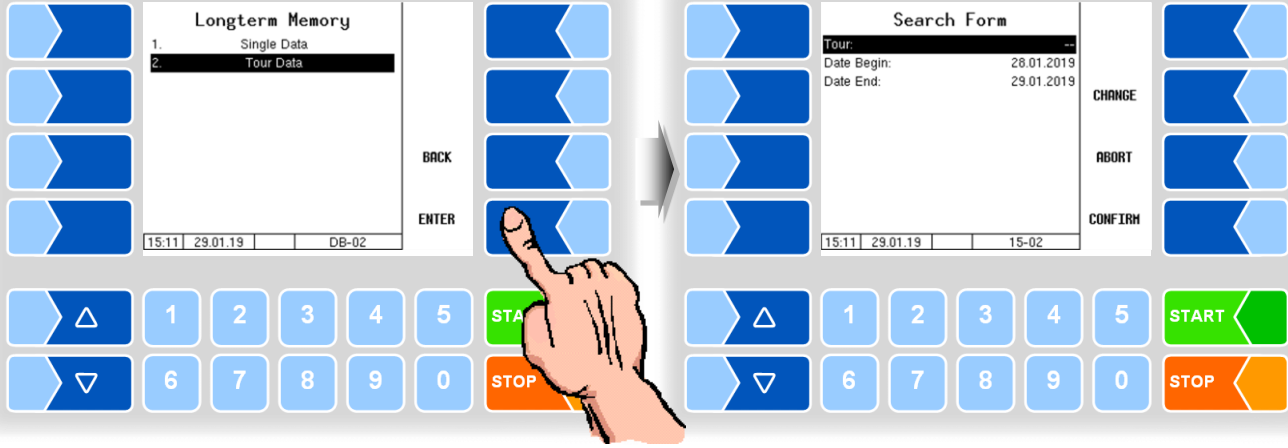


If you touch a soft key next to the display, additional functions are displayed. You can print the located data, start a new search or exit the screen.

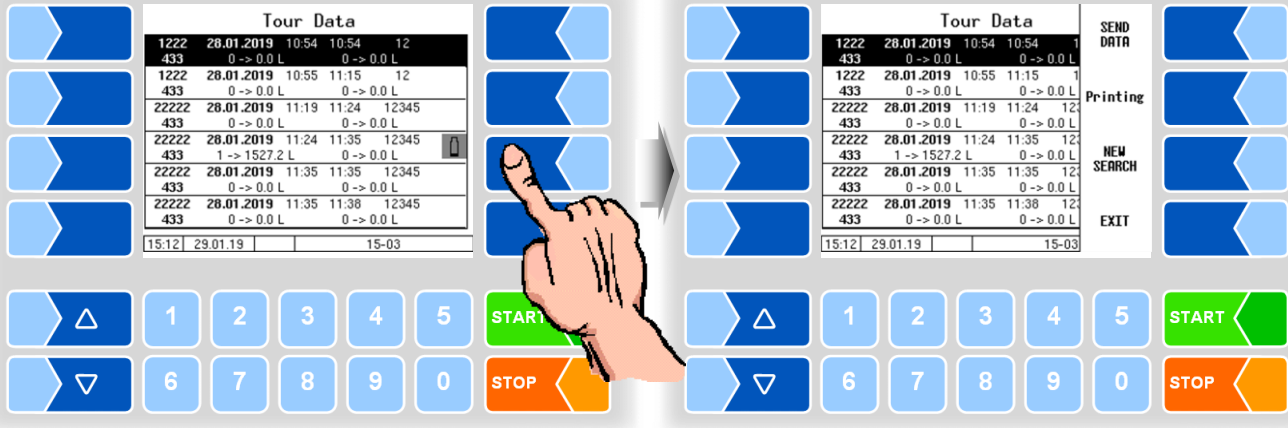


Tour data

To view tour data, proceed as for displaying single data. Only the supplier number is omitted from the search box.



If you touch a soft key next to the display, additional functions are displayed. You can send the tour data, print the located data, start a new search or exit the screen.



14.3 Password level

The software configuration is protected by passwords which allow access to various configuration options.

You can access the configuration menus without a password but you cannot make any changes.

After entering the driver password, you can change the time in the controller display. It is possible to change the language without entering a password.

Entering the driver password

The driver password is the sum of the day, month and hour (as shown on the display).

Driver password = day + month + hour

Example

Date: 31. 03. 2019, 07:28 am

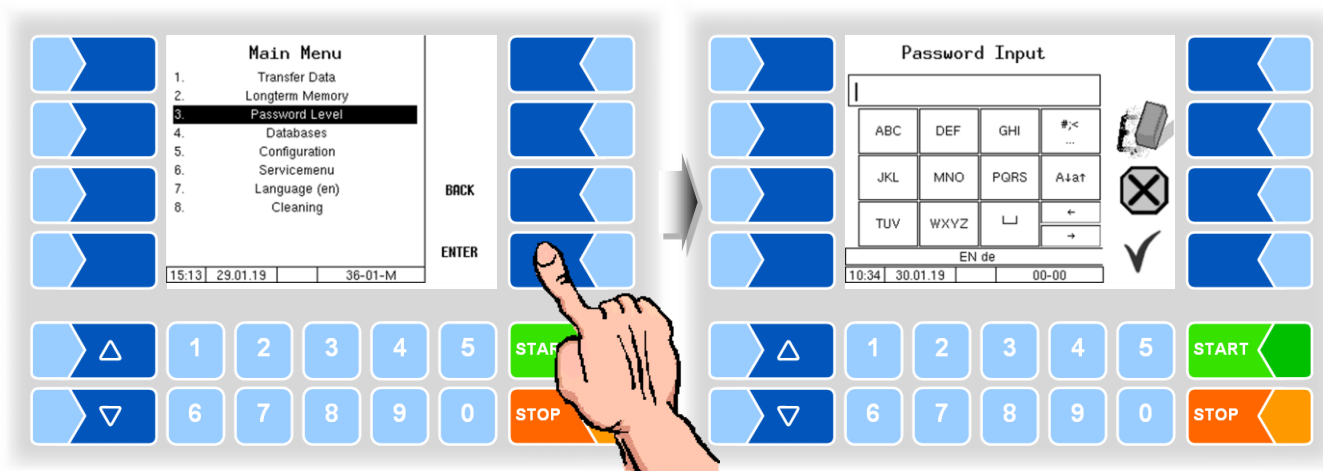
Driver password = 31 + 3 + 7 = 41

- In the main menu, select the menu item "Password Level".

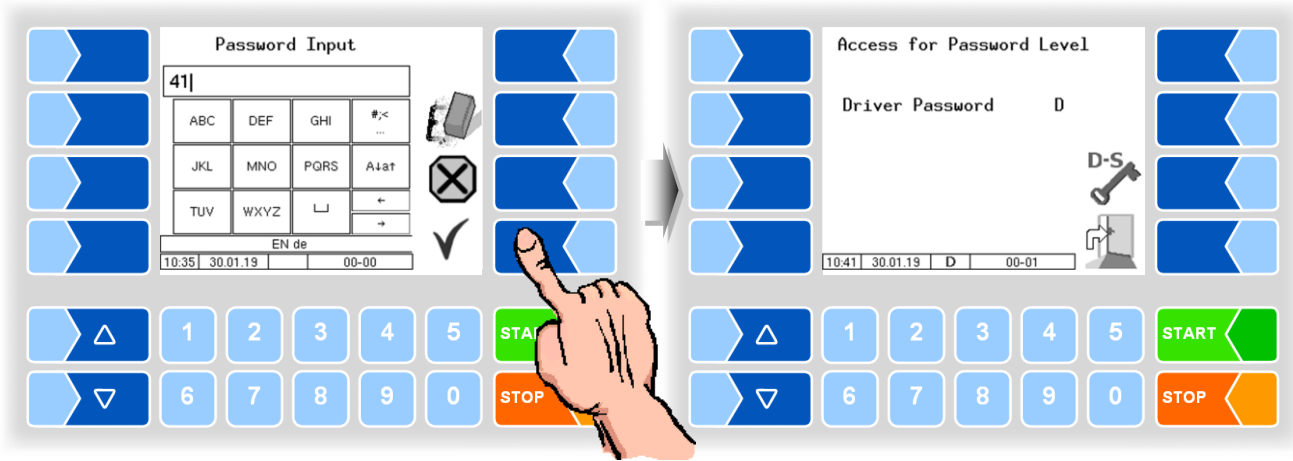
You can enter the password in the next window.


Numbers can be entered using the keys below the display.


The soft key with the eraser symbol is available for corrections. If you touch this soft key, the character to the left of the cursor will be deleted.

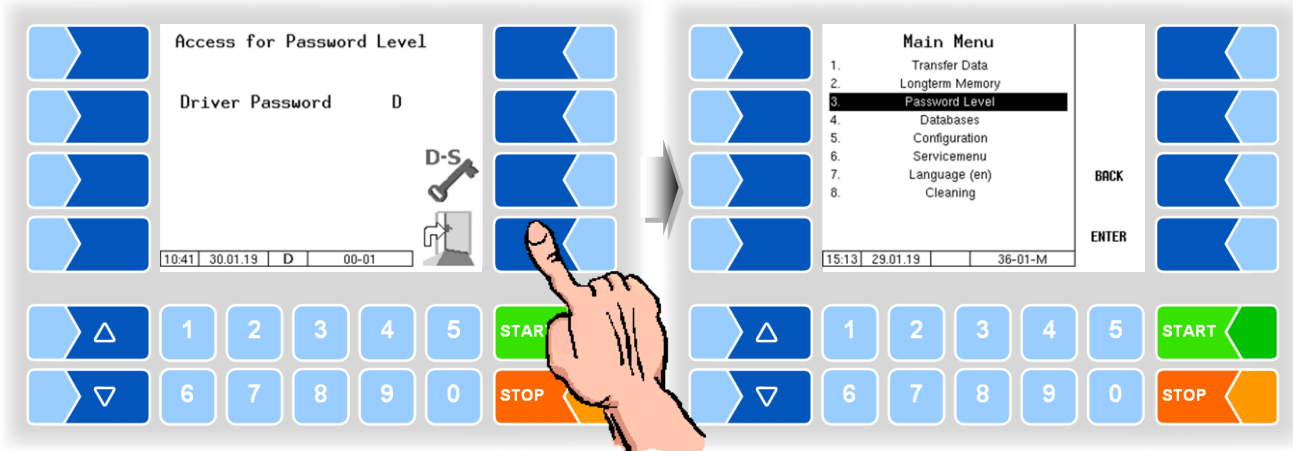


- Once you have finished entering the password, touch the " ✓ " soft key.
The password level (D) is then displayed, to which access is possible.

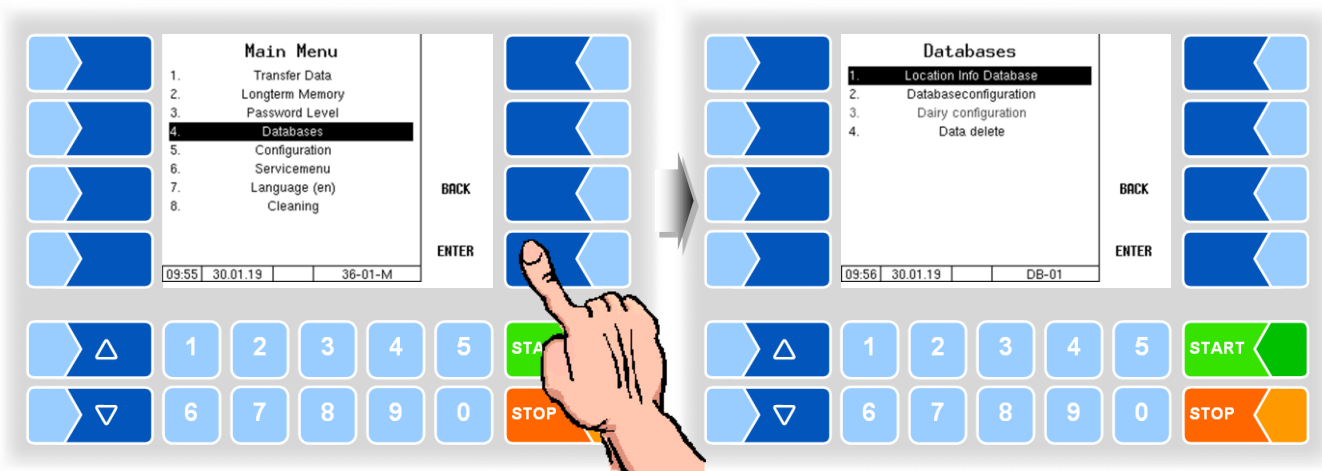


You can use the soft key  to reopen the window to enter the password (driver, user or service password).

- Touch the soft key  to return to the menu selection.

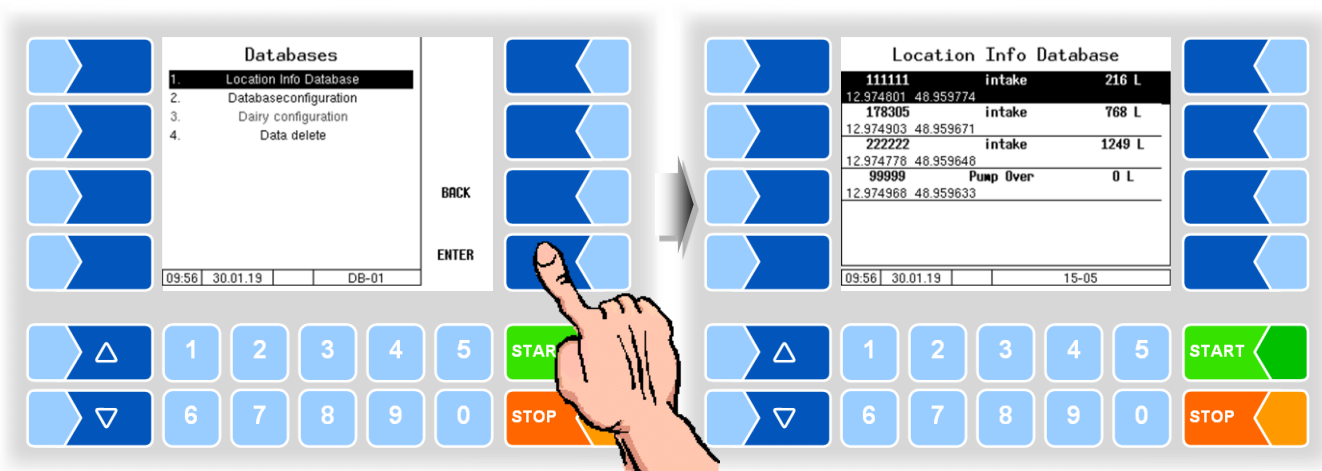


14.4 Databases



Location info database

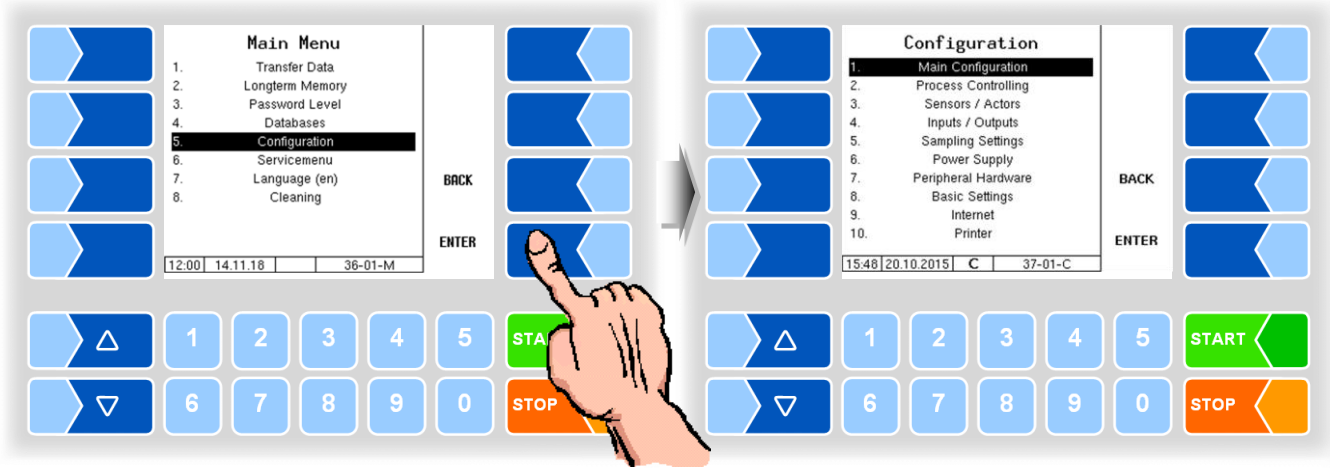
The GPS positions of the various suppliers are recorded in the location info database. Here the supplier ID, type (intake, cleaning, pump over), average amount, GPS position "long" and "lat" and quality are displayed.



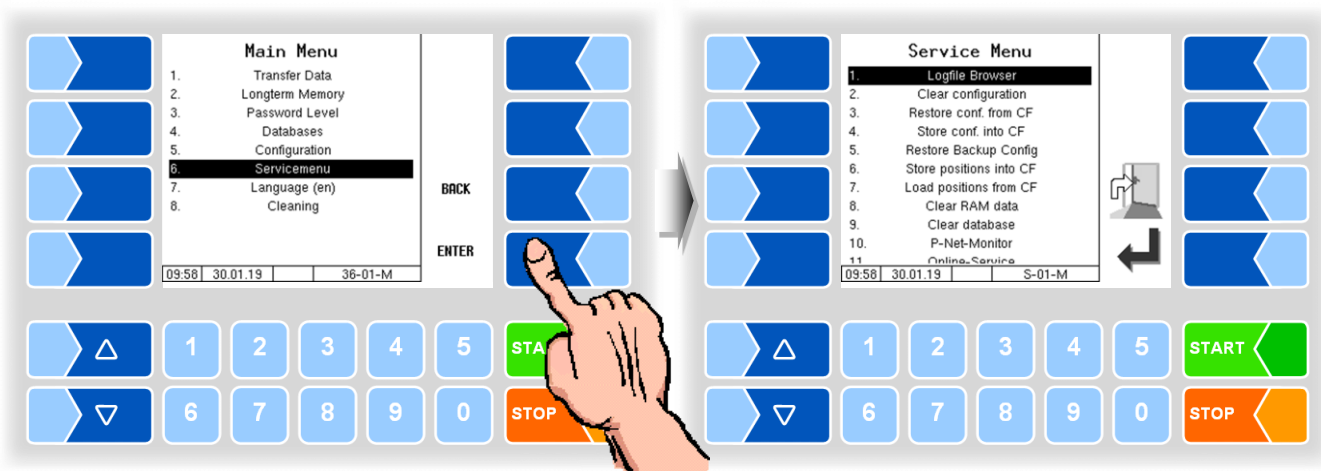
Access to other functions in the Databases menu is not possible at the driver password level.

14.5 Configuration

You can open the submenus in the "Configuration" menu without entering a password, but you cannot make any changes. The configuration is described in the configuration manual ("*MAK 3003 Measuring system TIGER, Configuration*").

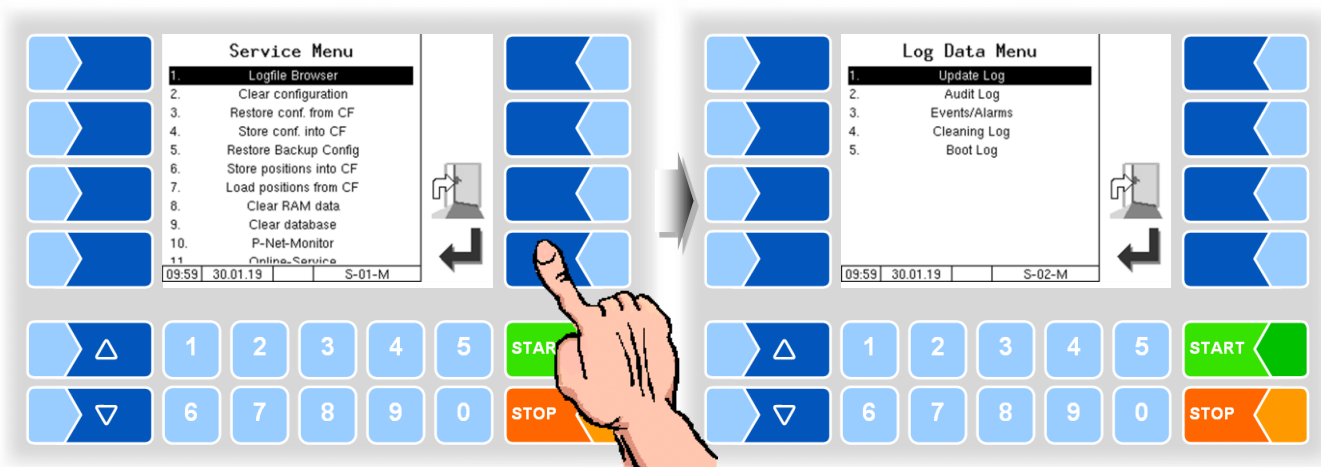


14.6 Service menu

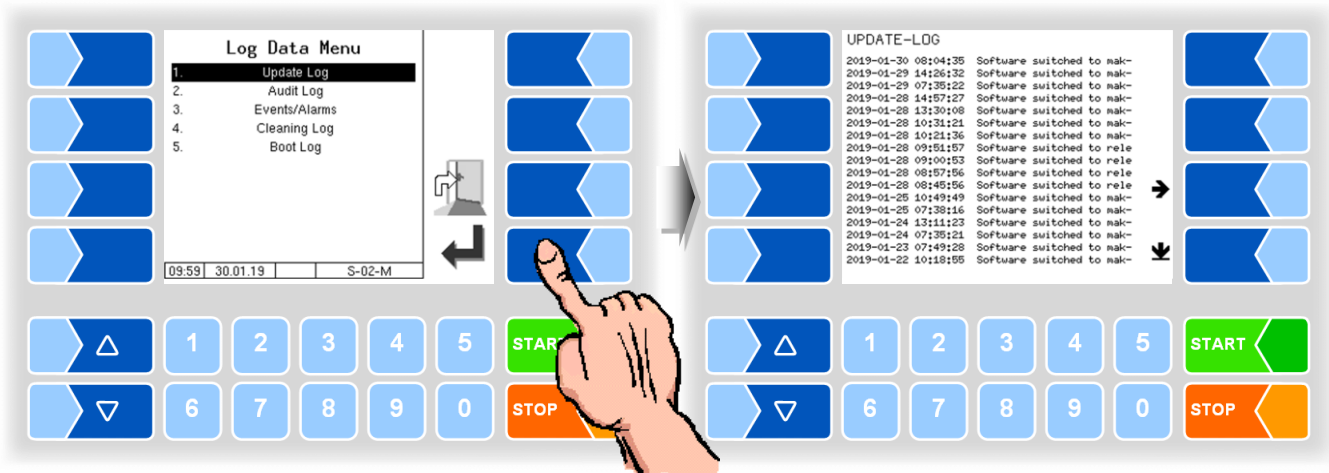


14.6.1 Logfile Browser

The logfile browser allows you to view all saved log entries. The information about the various operations is displayed in text format and can be read directly on the screen.



Update Log:	Log entries about updates and update attempts
Audit Log:	Log entries about all parameter changes
Events/Alarms:	Log entries about all faults
Cleaning Log	Log entries about cleaning
Boot Log:	Boot reports, boot scripts

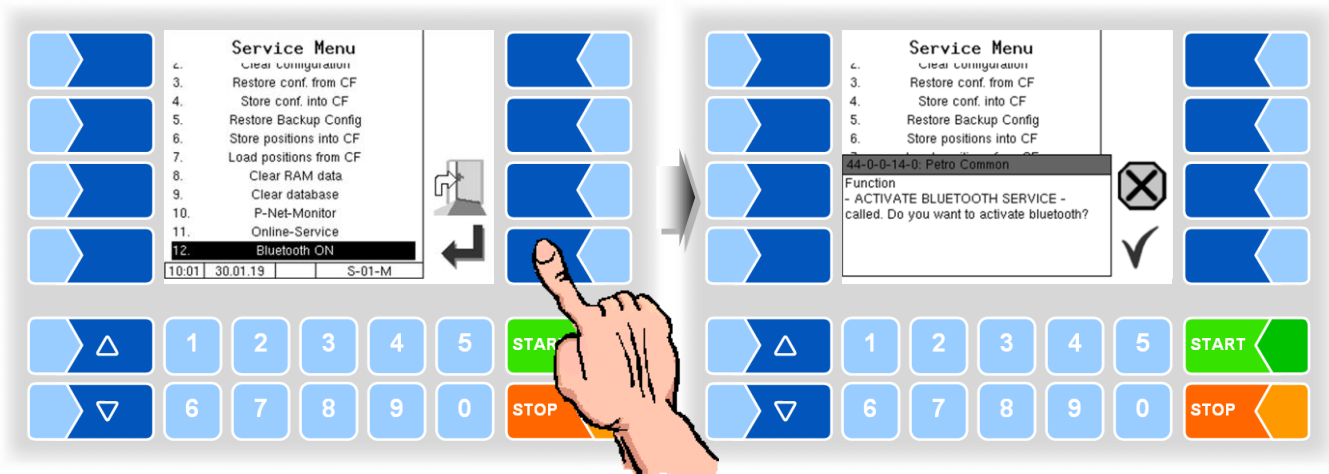


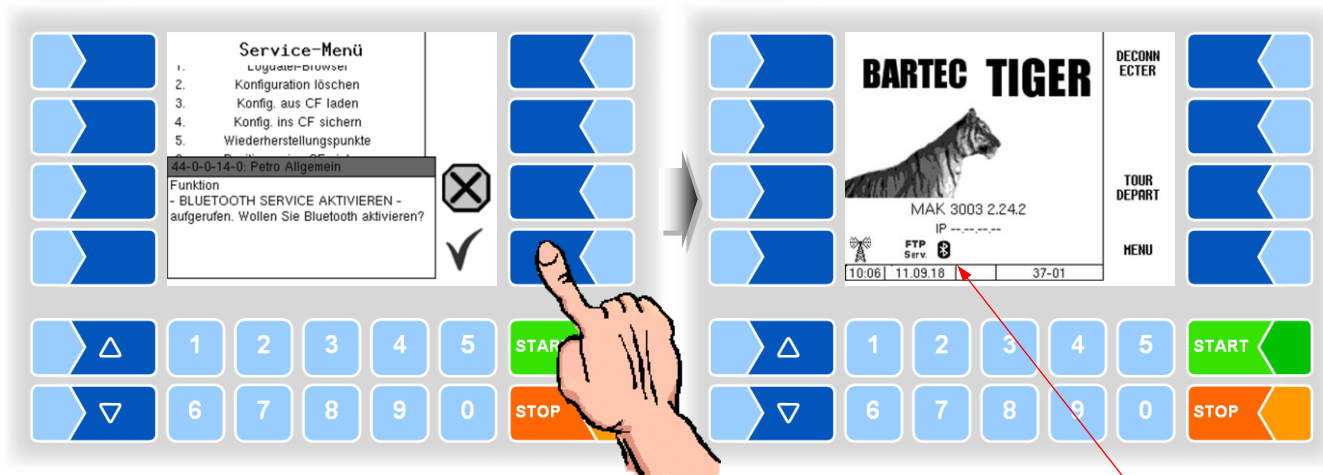
Within the log window, you can move the displayed content to the left, right, up or down using the arrow softkeys.

You close the log window with the **STOP** key.

14.6.2 Activate Bluetooth

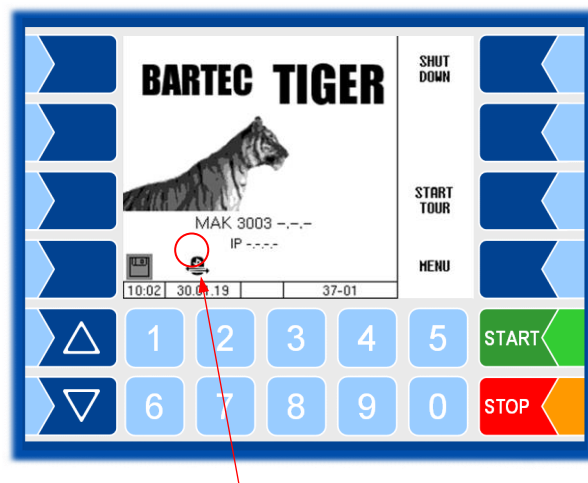
If a Bluetooth receiver is configured, you can activate the Bluetooth interface here after entering the driver password to allow service personnel access to the software.





If the Bluetooth interface is activated, this is indicated by a symbol.

With the BARTEC Service Tool, a Bluetooth connection can be established and the software can be accessed.

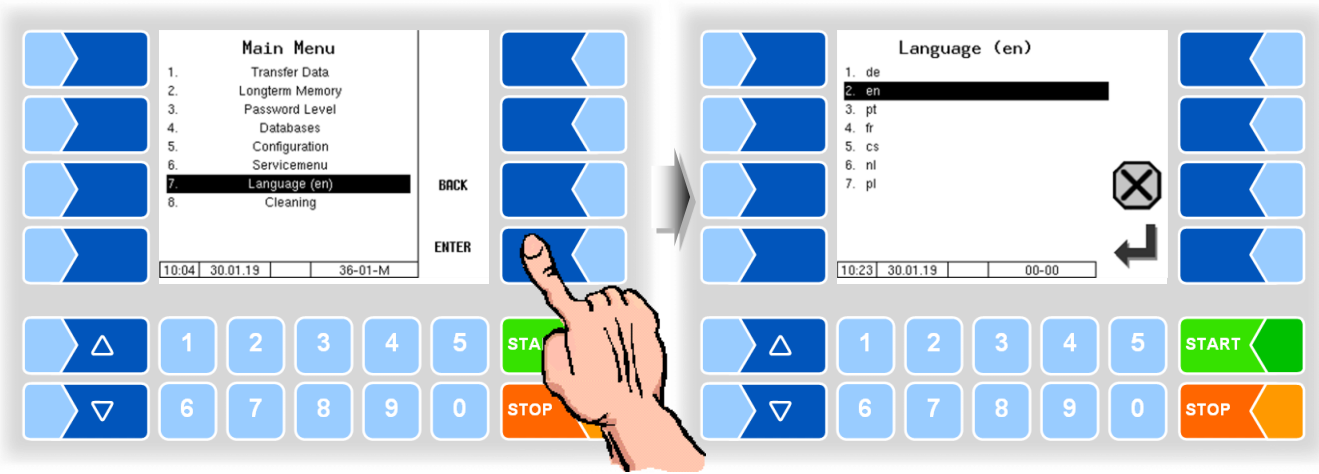


Once the connection is established, this symbol is displayed.

Access to other functions of the service menu is not possible at the driver password level.

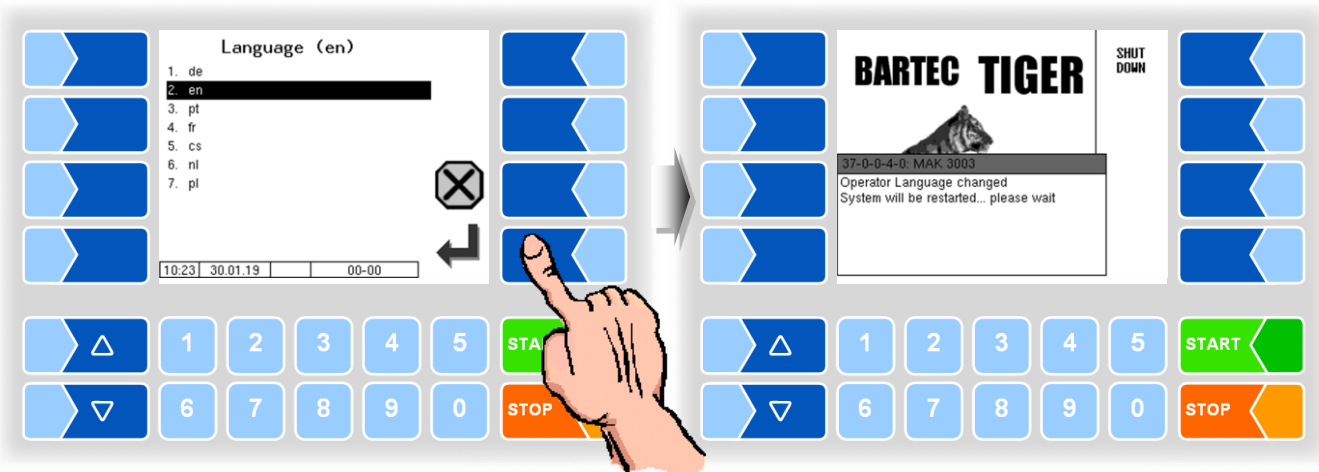
14.7 Language

You can change the language setting without entering a password.



Language	
Select language for the display screens	de (German) en (English) pt (Portuguese) fr (French) cs (Czech) nl (Dutch) pl (Polish)

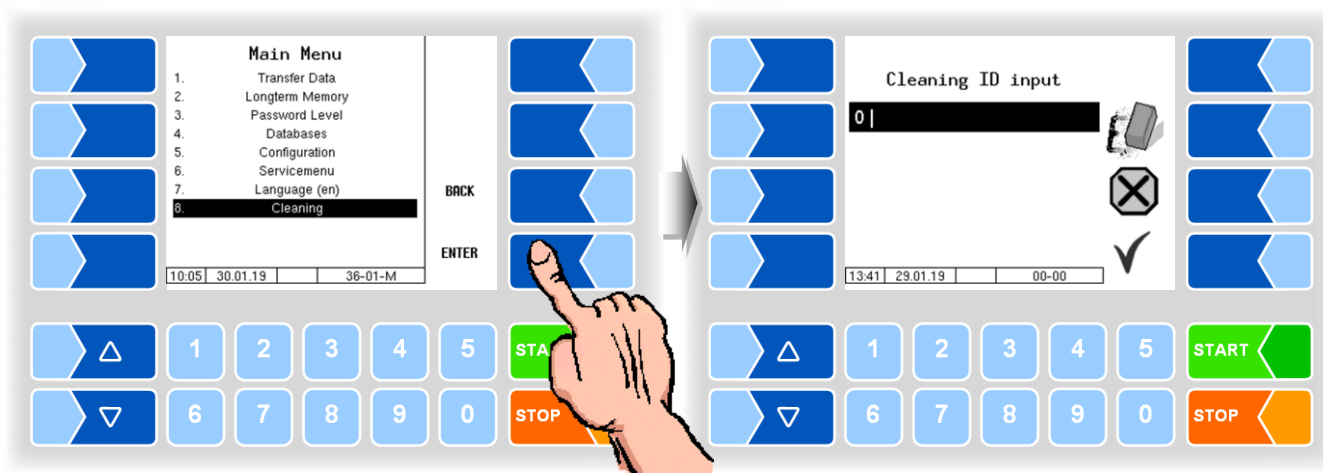
If you change the language setting, the system will automatically be rebooted.



14.8 Cleaning

For the vehicle types "LYNX", "LYNX Digital", "TIGER", "E-TIGER" and "V 3003", the cleaning functions are also available outside of a tour.

Manual cleaning ("cleaning") or automatic cleaning ("cleaning automatic") can be selected depending on the configuration.

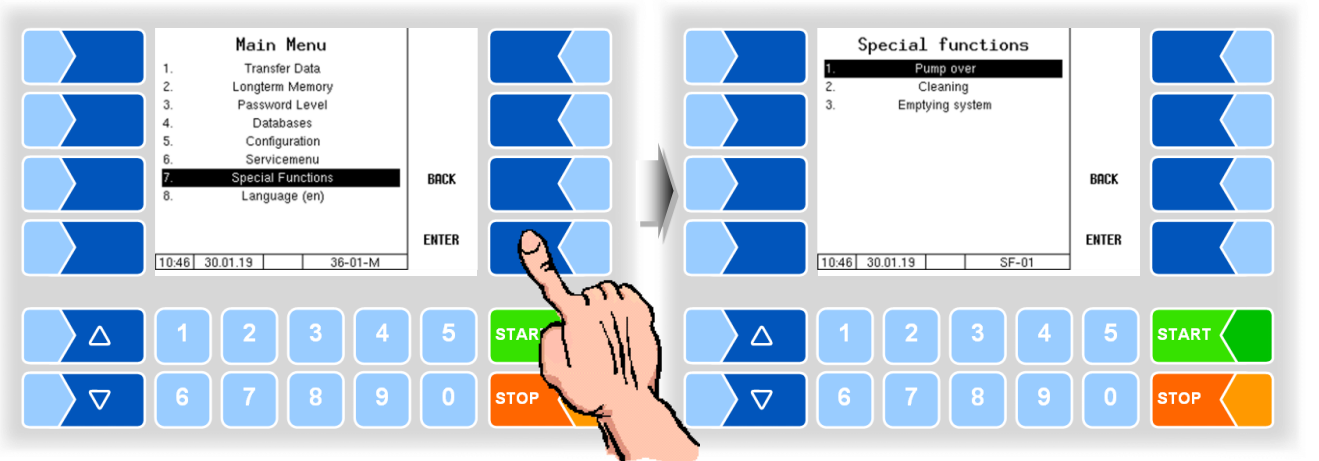
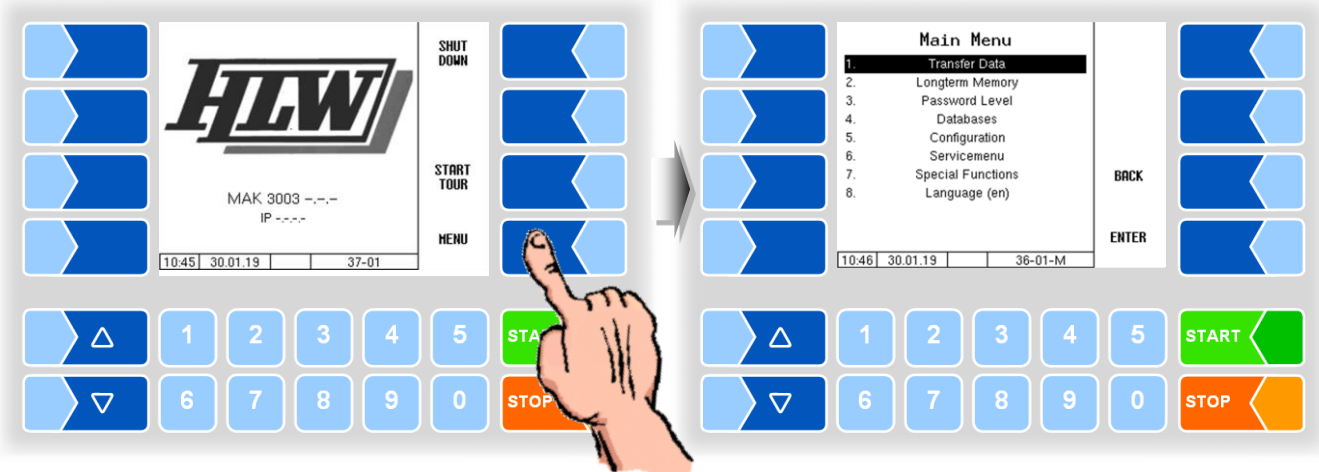


These functions are operated as described in the Tour menu; see sections 12.6 Manual cleaning and 12.7 Automatic cleaning.

Special feature: No cleaning data is recorded when cleaning outside the tour.

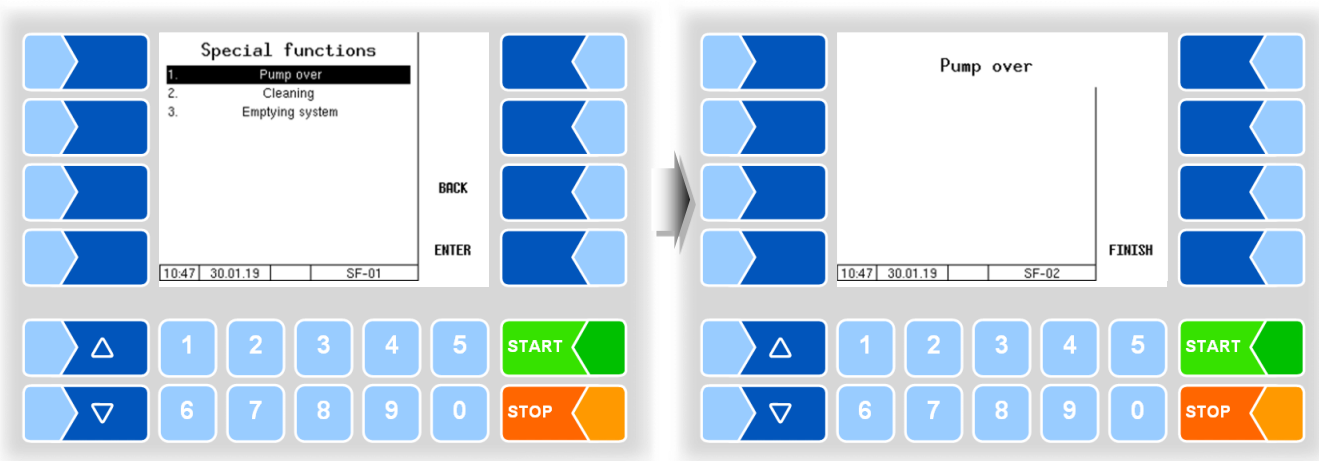
14.9 Special functions HLW

The main menu contains additional functions to activate outputs for the "HLW" measuring system type.



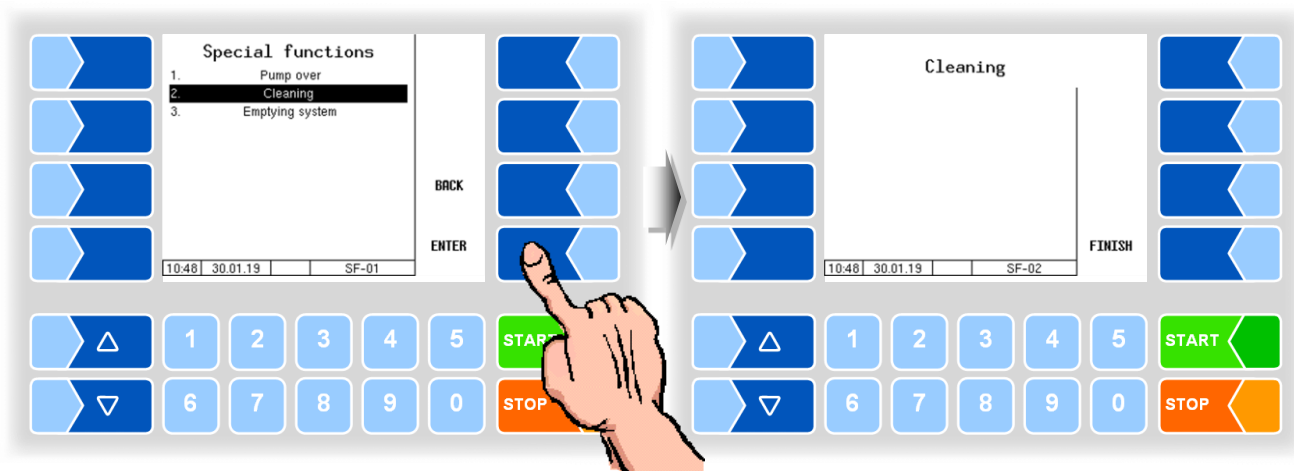
14.9.1 Pump over

The controller activates the pump-over output.



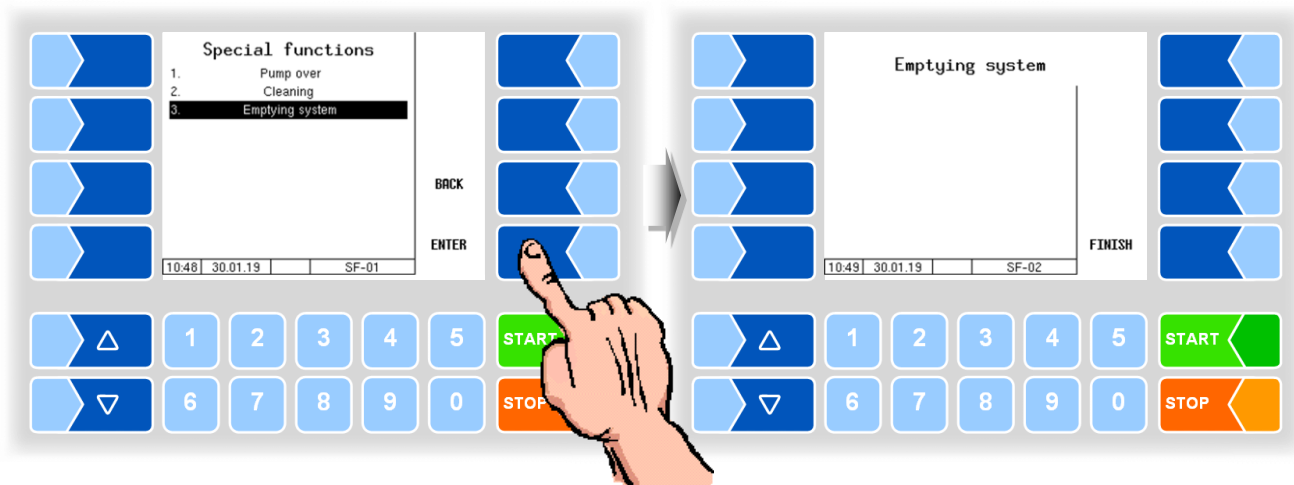
14.9.2 Cleaning

The controller activates the cleaning output.



14.9.3 Emptying system

The controller activates the output for purging the air separator.
Control is carried out by HLW.



The outputs are deactivated when closing the screens.
