USER MANUAL

MU 7034 EN O

CMA TRONIQUE

Document applicable for software from version 4053+v1.7.x and 446v1.1.x

O	2022/10/31	This version requires the installation of the resident v5.0 which causes a reset of the settings and recordings.	TABTI-BENHARI	NC
N	2021/12/22	Evolution of the measuring system menu. Control of a reel. Blocking contamination and DSPGI. Viscosity correction %. Import ICOM settings onto SD card. Number of additive injectors in metrological mode. RCT5 remote control.	DSM	FDS
Issue	Date	Nature of modifications	Written by	Approved by

CONTENTS

1 GENERAL PRESENTATION AND DESCRIPTION

The CMA-TRONIQUE is a measuring system that must be fitted on road tankers. It measures liquids such as fuel, diesel, off-road diesel (GNR), ethanol ad-blue and biofuels. It is designed to operate without any gas elimination device.

The system is based on a single calculator-indicator MICROCOMPT+ MONO or DUAL and can manage one or two measuring systems.

When the system manages a single CMA-TRONIQUE, it is called EmA or EmB.

DUAL When the system manages two CMA-TRONIQUE, they are called EmA and EmB.

NOTE: Both EMA and EMB are French acronyms that stand for measuring system A (EmA) and measuring system B (EmB).

The equipment depends on the number of the CMA-TRONIQUE:

	1 CMA-TRONIQUE EMA or EMB	DUAL **2 CMA-TRONIQUE EMA and EMB**
MICROCOMPT+ electronic calculator-indicator	1	1
Turbine meter	1	2
Pump (rotary vane pump for example)	1	2
Relative pressure sensor with its associated hydraulic shock absorber	1	2
Sight glass just downstream the meter	1	2
Printer	1	1
Temperature probe, option	1	2
A set of delivery hose(s) that depends on the measuring system	1	2
Pneumatic valve in case of double delivery	1	2
If required, overfill probes	*Depending on the truck*	*Depending on the truck*

The CMA-TRONIQUE enables:

- ⇨ To measure products when they are delivered to the station, with or without volume preset,
- ⇨ to split compartments,
- ⇨ to control the product movements (transfer, loading, return, and purge).

Depending on the hydraulic configuration, the system can manage one or two distribution ways:

- ⇨ On EmA: One distribution way full hose or empty hose or two distribution ways: hose 1 and 2
- ⇨ On EmB: One distribution way full hose or empty hose

If the feature is enabled a delivery channel is available for pumped not counted distribution.

According to hardware configuration, it controls up to nine compartments. You can configure 16 different products.

It can be connected to DSPGI anti-contamination systems. DSPGI devices provide product identification for each compartment and update the MICROCOMPT+. This eliminates any mixture of product. Each compartment is equipped with a DSPGI.

The system can control one or two additive injection devices.

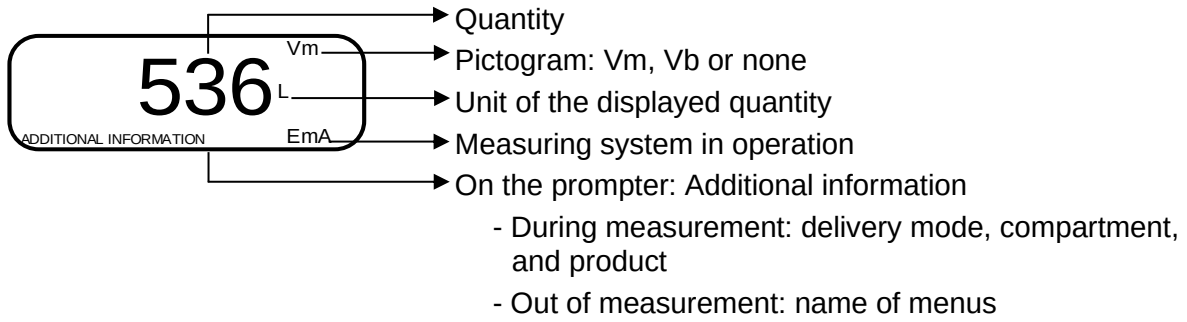
In option, the system controls the product temperature.

In addition, it may be connected to a printer for delivery tickets, internal totalisers, parameters or diary printings.

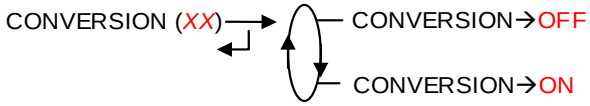
NOTE: The information printed has no metrological value. Only the indications displayed by the indicator can be used as proof.

The displayed quantity depends on the system configuration. The user is informed by a pictogram at the top-right of the display according to the conventions below:

- ⇨ Volume in metering conditions: pictogram Vm (volume aux conditions de mesurage in french)
- ⇨ Volume converted to the reference temperature: pictogram Vb (volume brut in french)
- ⇨ Mass: no pictogram



Configured data are pre-visualized thanks to menus. In the example above, XX corresponds to the value given to the conversion, either OFF or ON.



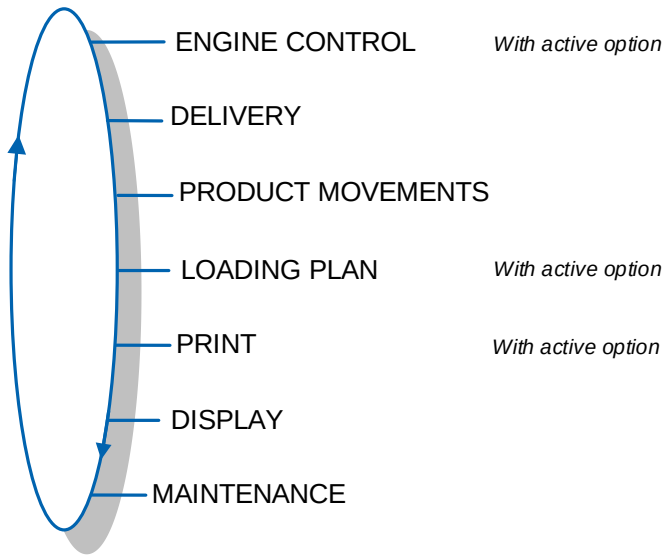
The MICROCOMPT+ has three pushbuttons:

	Increment a blinking figure or letter Come back to the previous step Stop the measurement Specific case: automatic scheduling (see §5.2)
	Select a figure, a letter or a menu Specific case: automatic scheduling (see §5.2)
	Validate the data Specific case: automatic scheduling (see §5.2)

Use the RFID keys:

	Blue key: Level-User This key is associated to a single MICROCOMPT+. It is used to switch into SUPERVISOR mode.
	Green key: Level-Manager This key is associated to a single or several MICROCOMPT+. It is used to switch into SUPERVISOR mode.

2 USE THE CMA TRONIQUE



The use of the CMA TRONIQUE depends on:

- ⇨ the hardware configuration of the truck,
- ⇨ the installed features,
- ⇨ and the configuration of the equipment carried out during commissioning.

Therefore, the user menu depends on several items:

- ⇨ The instrumentation of the power take off,
- ⇨ the number of measuring systems (one or two),
- ⇨ the number of distribution ways (one or two),
- ⇨ the remote control,
- ⇨ the number of compartments,
- ⇨ the control of the compartments flaps,
- ⇨ the control of the return product system (SRP),
- ⇨ the distribution mode (pumped counted, pumped not counted),
- ⇨ the temperature control,
- ⇨ the volume conversion.

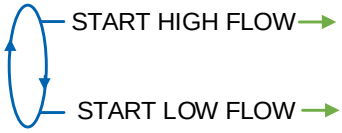
2.1 Menu DELIVERY

At rest, the MICROCOMPT displays a flashing number and the product label corresponding to the last quantity delivered.

There are several distribution modes:

- ⇨ **PRESET**: It allows to deliver a quantity of product previously entered. The delivery is stopped automatically.
- ⇨ **PRESET+PURGE**: It allows to deliver a quantity of product previously entered and the purging of the hose. The delivery is stopped automatically.
- ⇨ **FREE**: It allows to deliver a quantity of product in low or high flow. A user action is required to stop the delivery.

Delivery can be performed in high or low flow. This choice is made for pumped deliveries at the display of the message START HIGH FLOW. The blue MENU BUTTON switches on the display START LOW FLOW. The choice is made by pressing the green OK BUTTON. Switching is possible during the delivery by pressing the blue MENU BUTTON.

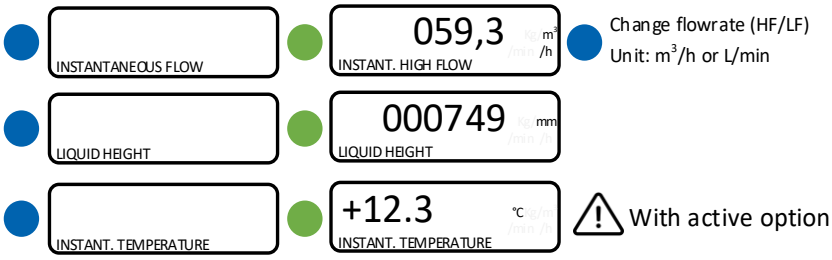


NOTE: In the event of a delivery interruption, improper handling of the pushbuttons may enter the menu DISPLAY (totalisers, memory). Simply press the red button to display DISPLAY and then the blue button to return to DELIVERY STOP. Confirm with the green button to select the next step

During measurement, the following information may be displayed:

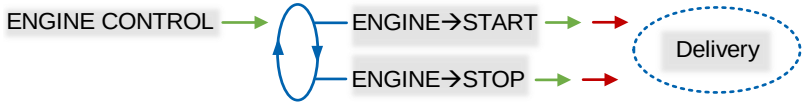
- ⇨ The instantaneous high or low flow rate. The unit depends on settings
- ⇨ The level of liquid in the compartment is use
- ⇨ The temperature (°C), if taken into account.

Simply follow the indications below:

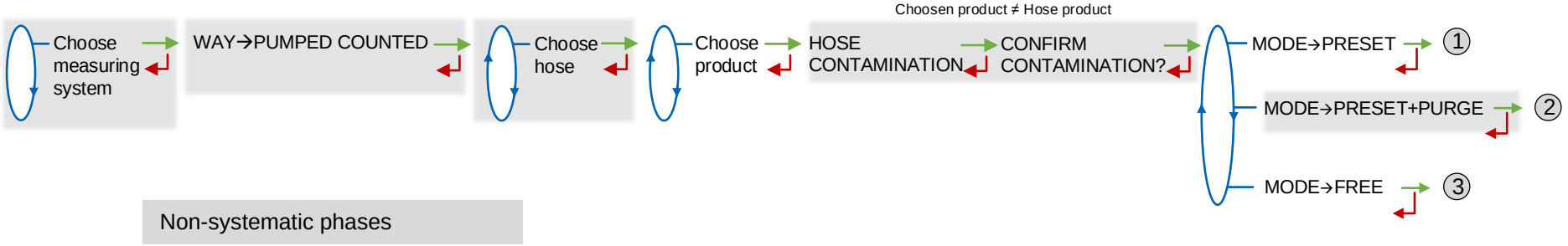


Back to normal display is automatic: DO NOT PRESS RED CLEAR BUTTON TO KEEP FROM INTERRUPTING DELIVERY.

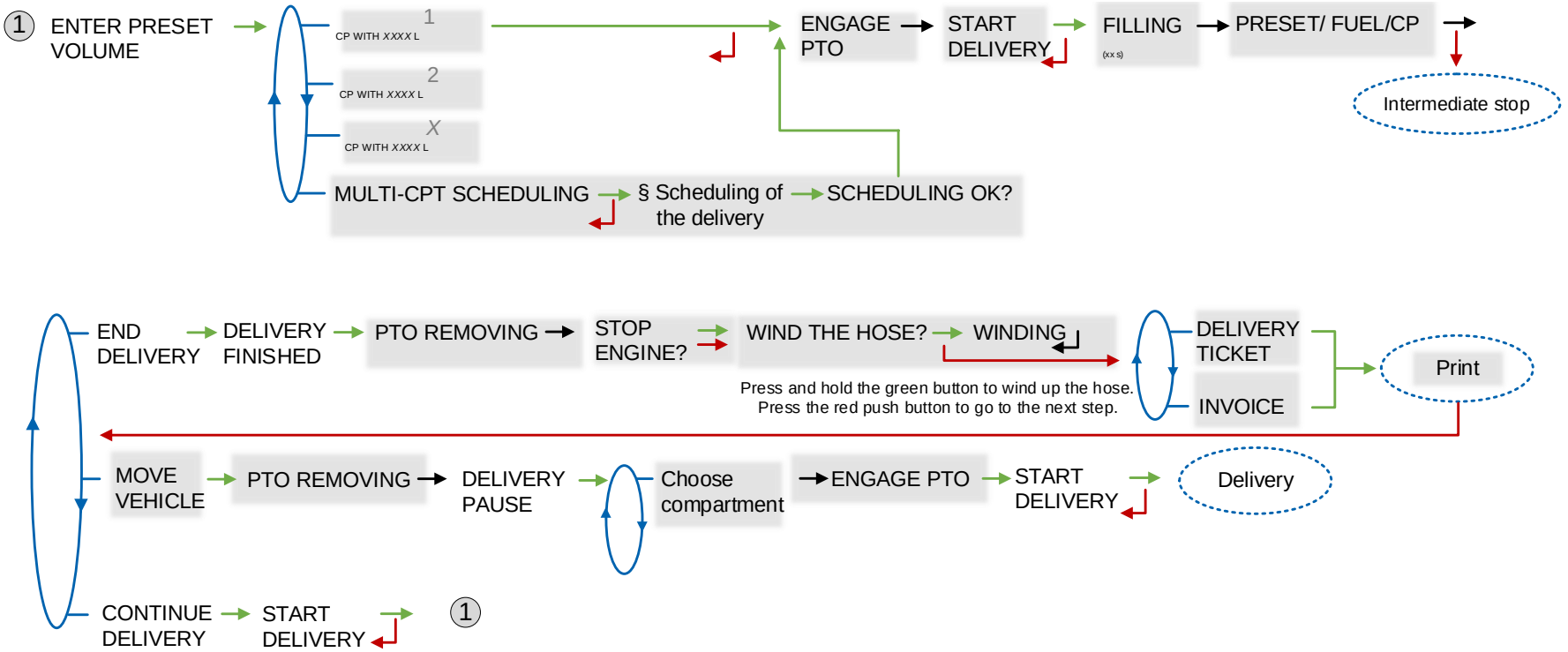
2.1.1 Pumped counted distribution mode



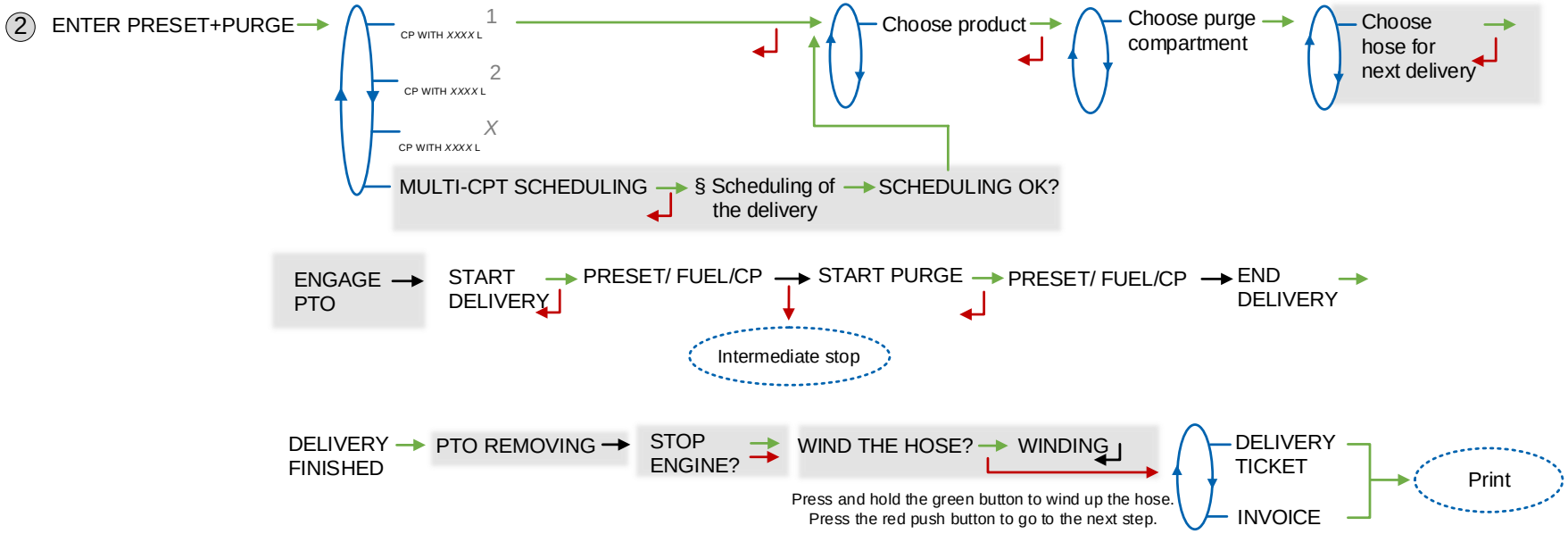
2.1.1.1 Delivery



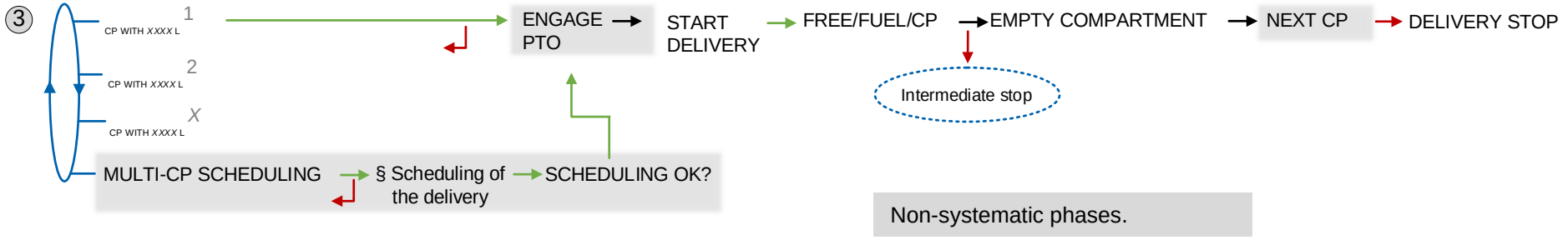
With active option, the commands for the pump clutching/declutching and for the power take-off control are made by the CMA TRONIQUE at the beginning and at the end of distribution.



Non-systematic phases



NOTE : To apply PRESET+PURGE, refer to sub-chapter 3.2.1.1 Two-step purge

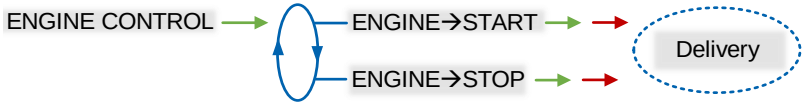


2.1.2 Pumped not counted distribution mode

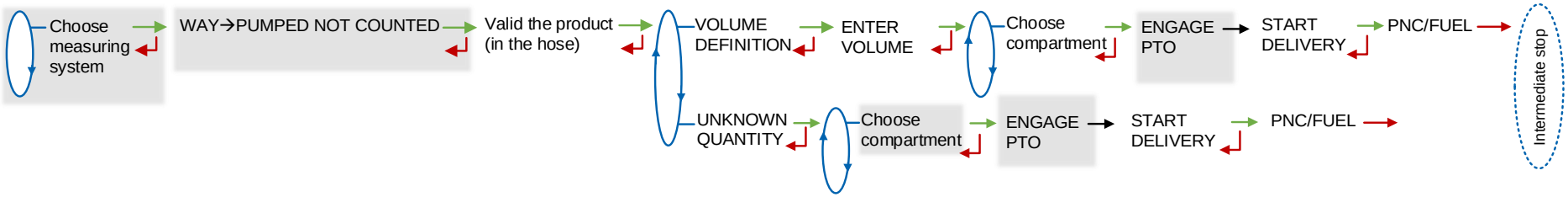
This delivery mode is used with two distribution outlets: upstream and downstream the meter.

⚠ To prevent any contamination, the delivery is made with the product in the line. To use another product, purge the line and repeat the operation.

With active option, the commands for the pump clutching/declutching and for the power take-off control are made by the CMA TRONIQUE at the beginning and at the end of distribution.

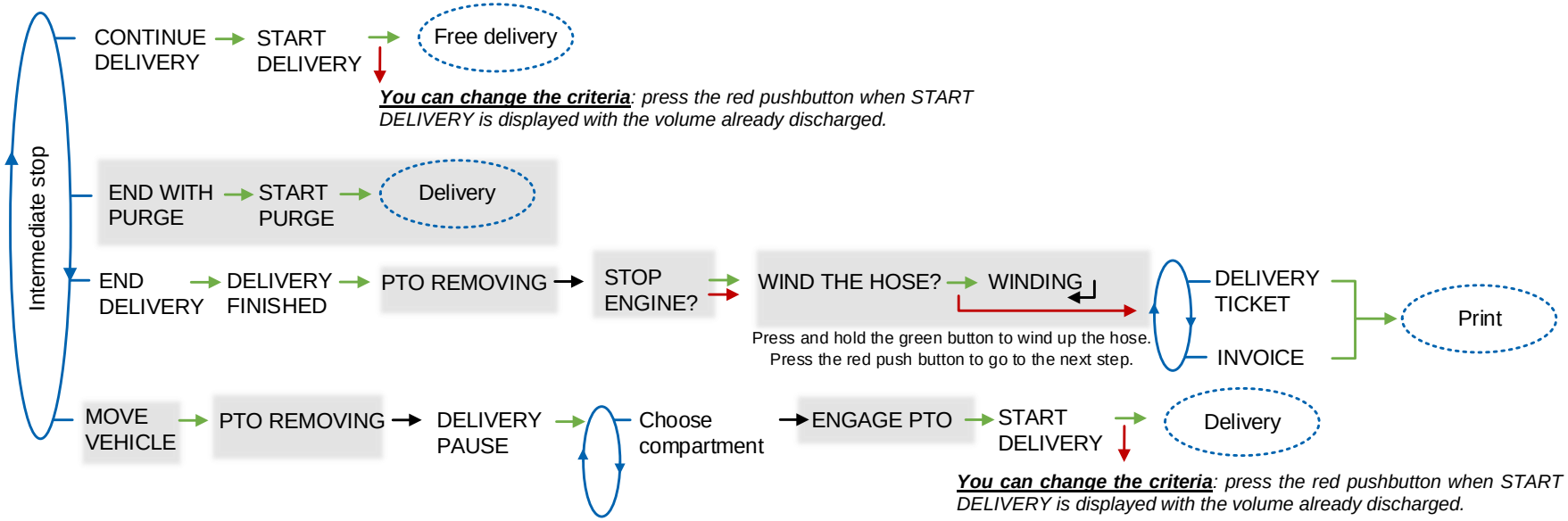


2.1.2.1 Delivery



Non-systematic phases.

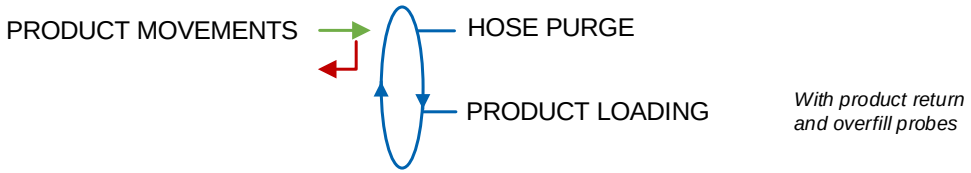
2.1.3 Intermediate stop of the delivery



If it is necessary to move the vehicle, the distribution has to be stopped for a moment, then choose the MOVE VEHICLE item. The CMA TRONIQUE switches off the power take-off, clutches the engine and freezes the MICROCOMPT+ on DELIVERY PAUSE. Press green OK BUTTON to continue distribution.

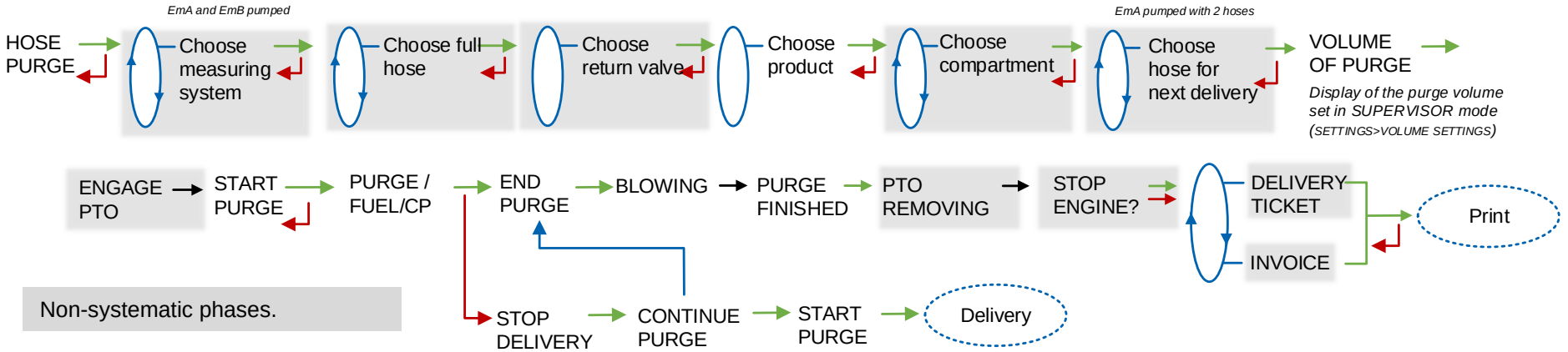
2.2 Menu PRODUCT MOVEMENTS

Product movements HOSE PURGE and PRODUCT TRANSFER are performed in low flow rate.



2.2.1 Sub-menu HOSE PURGE

This menu allows purging the hose in order to change the quality of the product. This operation is permitted with pumped measuring systems only.

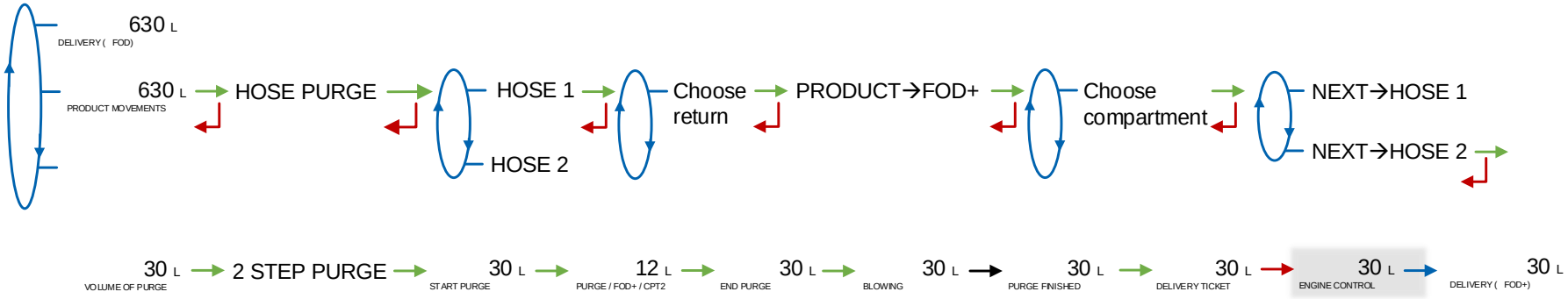


2.2.1.1 Two step Purge

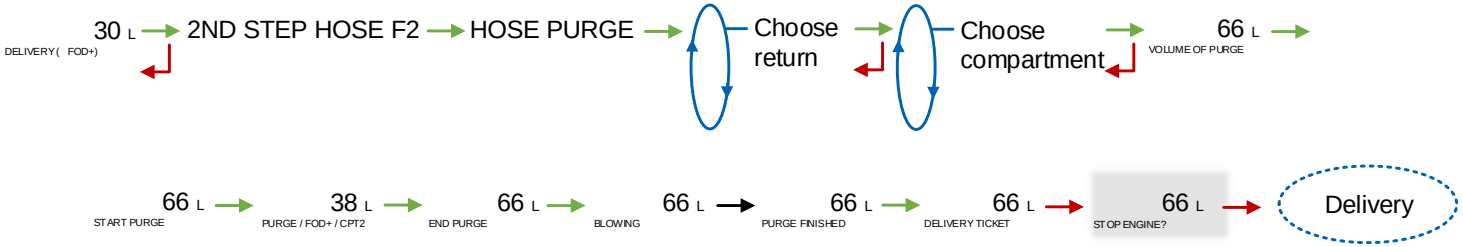
Some delivery scenarios require a two-step purge.

SCENARIO 1: Both hoses and the common pipe are filled with FOD. For the next delivery, we want to deliver FOD+ with hose 2.

First step: Purge hose 1 with menu PRODUCT MOVEMENTS>HOSE PURGE



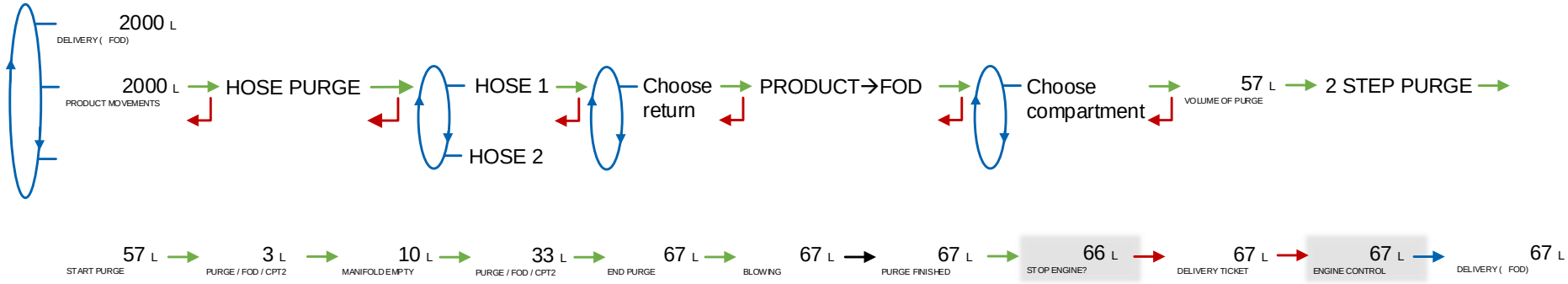
Second step: Purge hose 2 and common pipe with menu DELIVERY



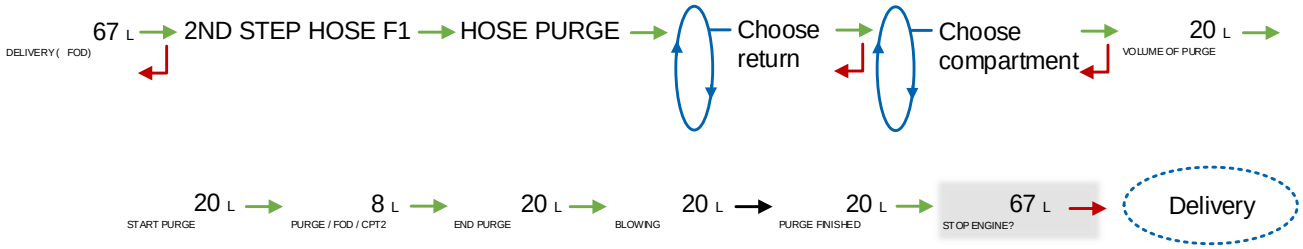
Non-systematic phases

SCENARIO 2: Hose 1 is full of FOD, hose 2 and the common pipe are filled with FOD+. For the next delivery, we want to deliver FOD with hose 1.

First step: Purge common pipe with menu PRODUCT MOVEMENTS>HOSE PURGE



Second step: Purge hose 1 with menu DELIVERY

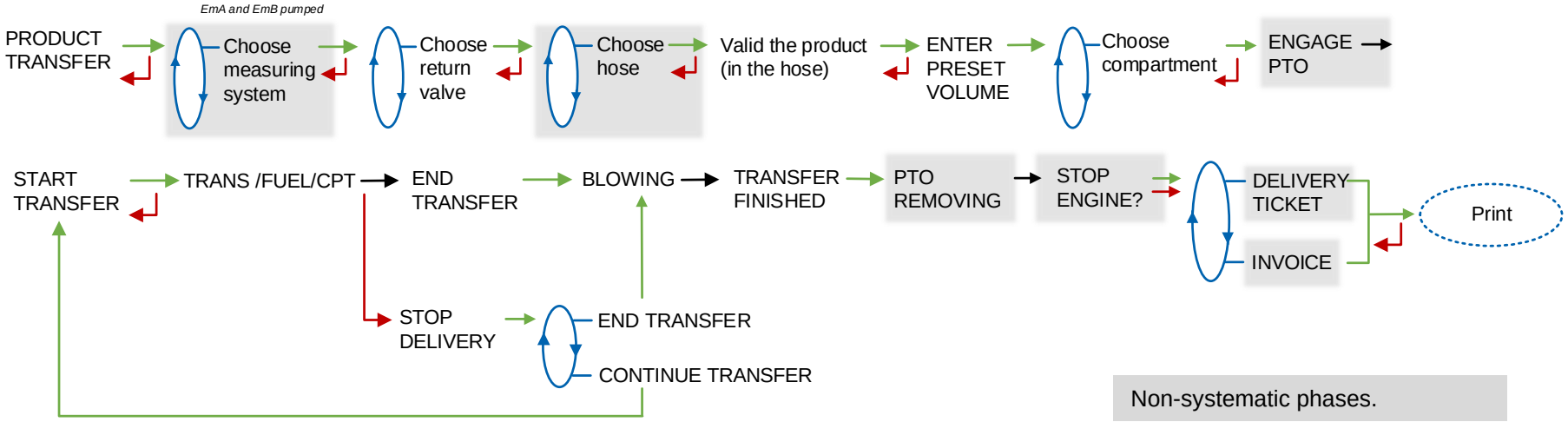


Non-systematic phases

2.2.2 Sub-menu PRODUCT TRANSFER

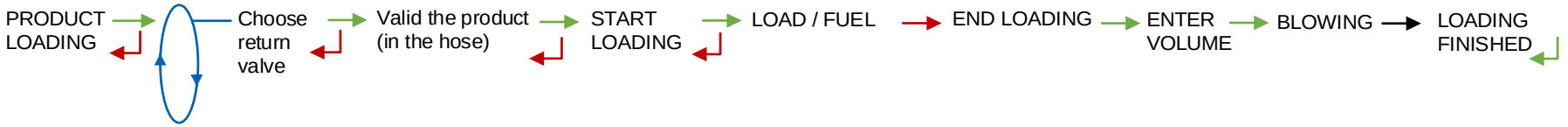
This menu is used to transfer product from one compartment to another; transfer is performed in low flow rate. This operation is permitted with pumped measuring systems only. It is available when at least one line is set with full hose, product return and overfill probe.

⚠ To prevent any contamination, the delivery is made with the product in the line. To use another product, purge the line and repeat the operation



2.2.3 Sub-menu PRODUCT LOADING

This menu is used to do a loading via a product return with the overfill probes set.



2.3 Menu LOADING PLAN (option)

⚠ This menu is not available if the corresponding function has not been activated in SUPERVISOR mode.

The LOADING PLAN menu is used to display the quality and the quantity of the products available in each compartment according to the information received from the embedded computing or entered manually. The volumes per compartment are be updated as the deliveries and product movements continue. They will be displayed at the compartment selection.

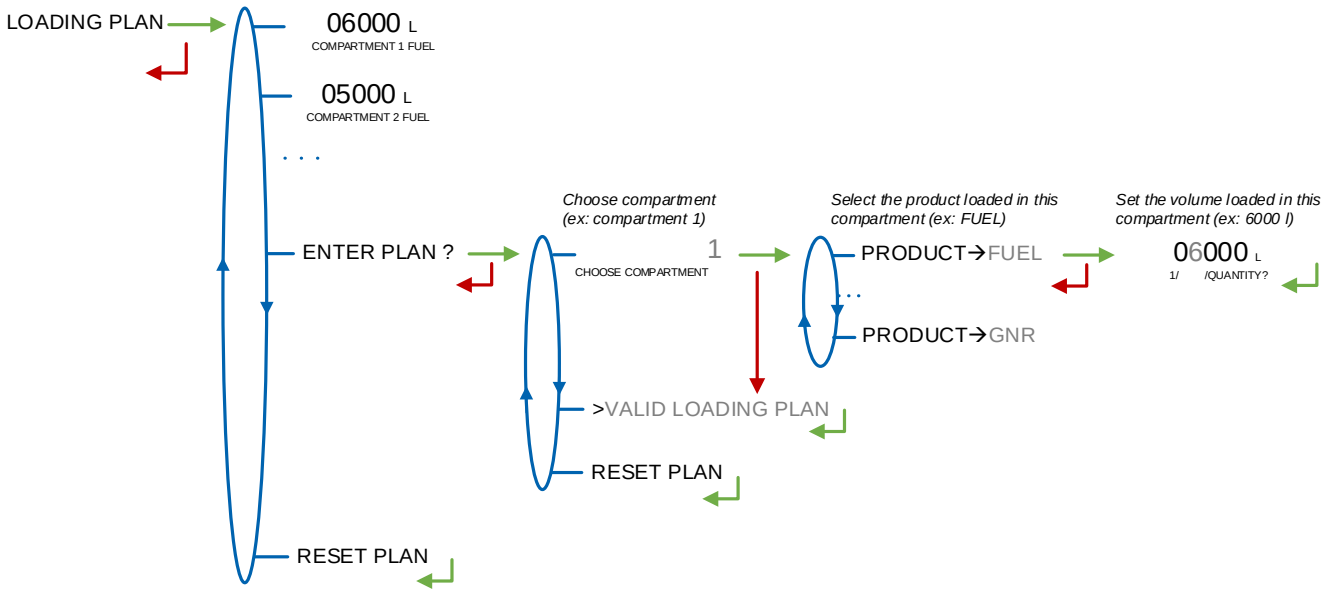
In case of a blocking function, an empty compartment won't be available for a delivery until you enter a new product quality via this menu. A compartment is considered as empty if the end height is reached and if CPT X EMPTY is displayed during the delivery.

The loading plan can be entered manually:

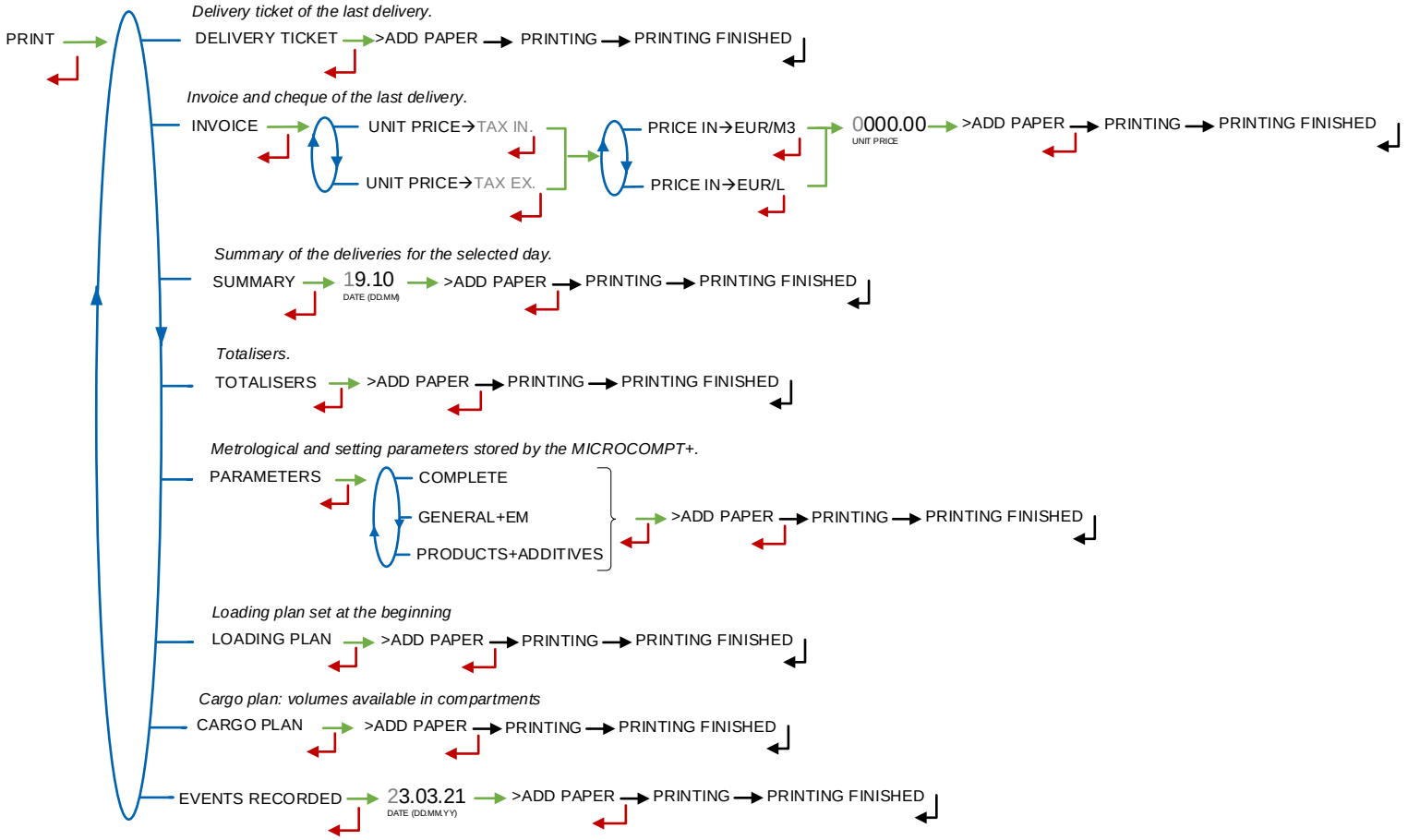
ENTER PLAN: For each compartment, select the product name and set the loaded volume. With DSPGI, the product name is blank. Then you must validate the loaded plan

VALID LOADING PLAN: This step validates the manually entered loading plan.

RESET PLAN: The loading plan can be cancelled by this menu.


LOADING PLAN
06000 L
COMPARTMENT 1 FUEL
05000 L
COMPARTMENT 2 FUEL
. . .
ENTER PLAN ?
Choose compartment (ex: compartment 1)
1
CHOOSE COMPARTMENT
Select the product loaded in this compartment (ex: FUEL)
PRODUCT→FUEL
. . .
PRODUCT→GNR
Set the volume loaded in this compartment (ex: 6000 l)
06000 L
1/ /QUANTITY?
>VALID LOADING PLAN
RESET PLAN
RESET PLAN

2.4 Menu PRINT (option)



According to the needs, the **PARAMETERS** sub-menu prints all or part of the parameters. Choose the menu:

COMPLETE: The general parameters are printed first, then remove the sheet and add another one to print the parameters of the measuring system (EM), and do the same to print the product and additive parameters. See ADDENDUM 1

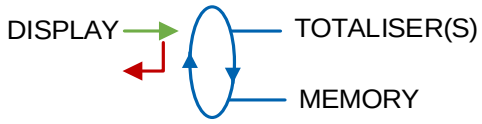
GENERAL+EM: The general parameters are printed first, then remove the sheet and add another one to print the parameters of the measuring system (EM).

PRODUCTS+TOTALISERS: Printing of the product and additive parameters

NOTE: Between each sheet, the message PRINTING FINISHED is displayed.

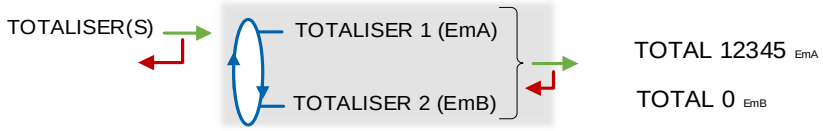
2.5 Menu DISPLAY

This menu is available in stand-by mode or during an intermediate stop. It allows the proofreading of totalisers and measurement results.



2.5.1 Sub-menu TOTALISER(S)

Display the totalisers of the measuring systems.



2.5.2 Sub-menu MEMORY

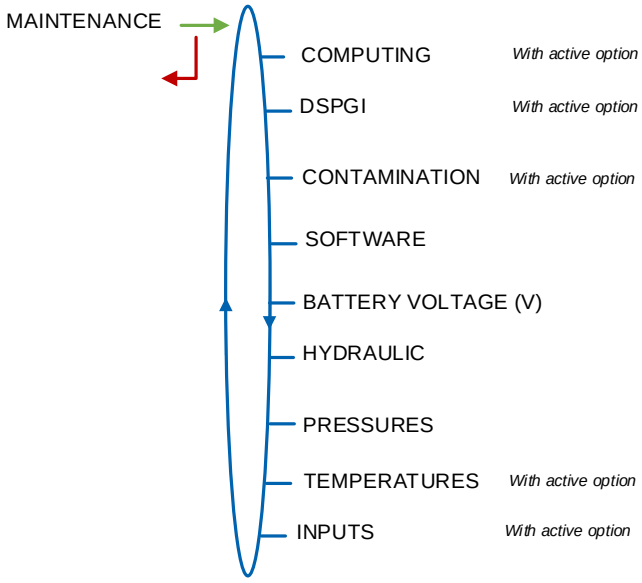
You can read all the measurement results stored by the CMA TRONIQUE. That can be done in two ways:

COMPLETE LIST: Display all the measurement details recorded, from the newest to the oldest, sorted by day then by measurement number.

DAY SELECTION: Display a specific measurement by selecting the day number.

2.6 Menu MAINTENANCE

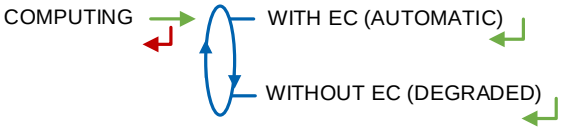
This menu depends on the configuration of the measuring system



2.6.1 Sub-menu COMPUTING (option)

⚠ With active option.

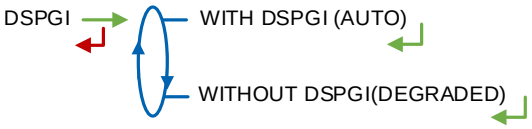
In case of embedded computing failure, choose COMPUTING>WITHOUT EC (DEGRADED) to operate without embedded computing



2.6.2 Sub-menu DSPGI (option)

⚠ With active option.

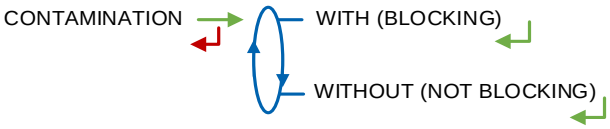
When the DSPGI is faulty, choosing WITHOUT DSPGI (DEGRADED) is used to temporarily force a non-blocking DSPGI operation in order to perform or complete an operation. At the end of this operation, the initial situation is restored.



2.6.3 Sub-menu CONTAMINATION (option)

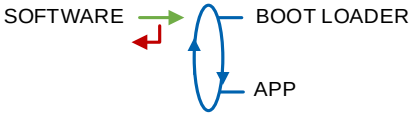
With active option.

In case of a hose contamination, choosing WITHOUT (NOT BLOCKING) is used to temporarily force a non-blocking operation in order to perform or complete an operation. At the end of this operation, the initial situation is restored.



2.6.4 Sub-menu SOFTWARE

Display the software version of the boot loader and the app.

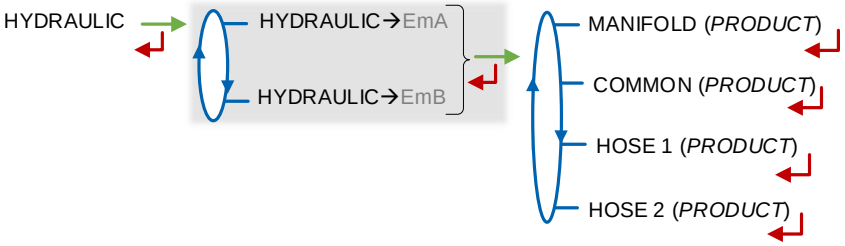


2.6.5 Sub-menu BATTERY VOLTAGE

Display the battery voltage value in volts.

2.6.6 Sub-menu HYDRAULIC

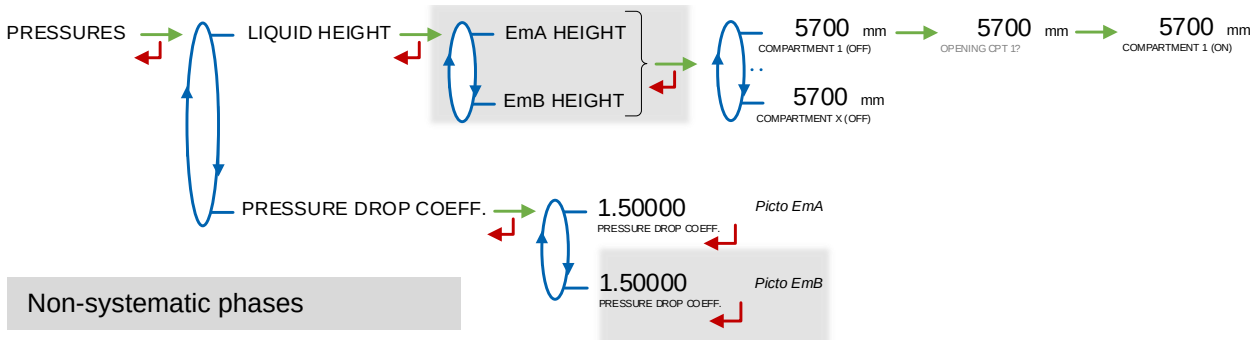
This menu is used to display the product quality contained in the different parts of the pipe.



2.6.7 Sub-menu PRESSURES

LIQUID HEIGHT: Gives the height of the product in each compartment with instrumented flaps.

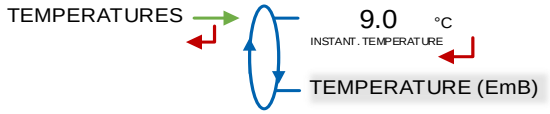
PRESSURE DROP COEFF: Gives the pressure drop coefficient for each measuring system using the relevant pictogram



2.6.8 Sub-menu TEMPERATURES (option)

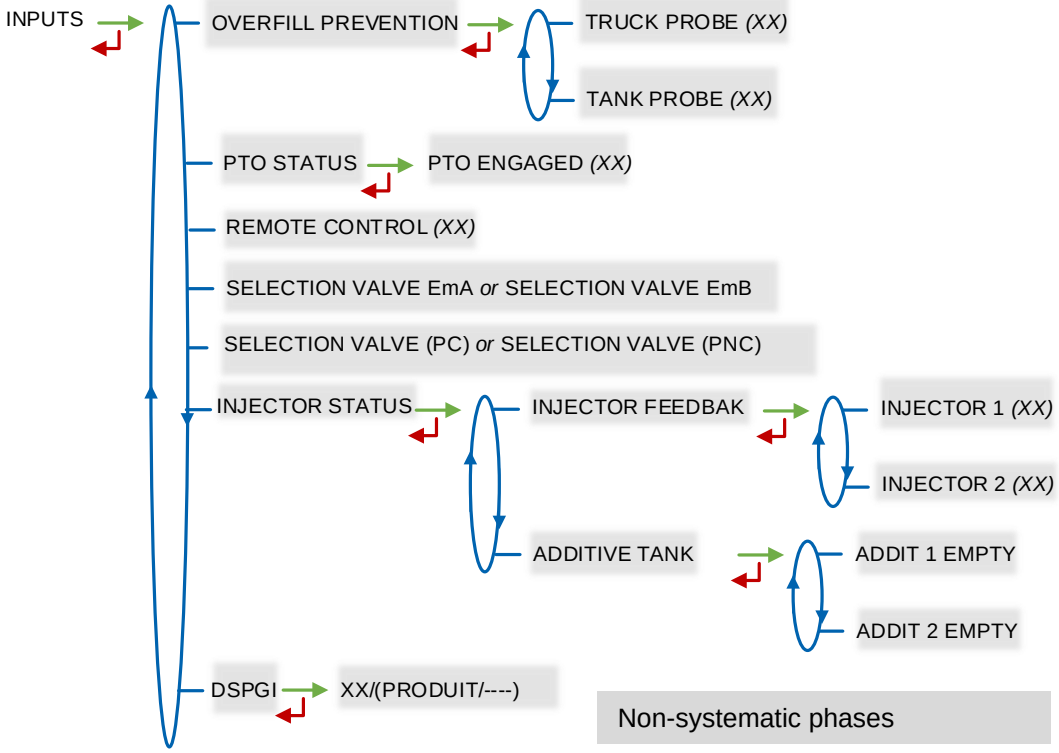
⚠ With active option.

Gives the product instantaneous temperature for EMA or for EMA and EMB.



2.6.9 Sub-menu INPUTS (option)

Display the status of the inputs to ease maintenance.



OVERFILL PREVENTION:

- **TRUCK PROBE**: Status of the truck overfill probe. With the METROLOGICAL option: CONFIGURATION>INSTRUMENTATION>OVERFILL PREVENTION>TRUCK PROBE>CONTROL→LOCAL

- **CUSTOMER TANK**: Status of the customer overfill probe.
- **PTO STATUS**: Status of the power take-off.
- **REMOTE CONTROL**: Status of the remote control. STANDBY, ES: Emergency stop, LF-HF: low flow-high flow or R-S: run-stop

SELECTION VALVE EmA or SELECTION VALVE EmB For DUAL only and PTO→EmA+EmB. Position of the measuring system selection valve: on EmA or EmB

SELECTION VALVE (PC) or SELECTION VALVE (PNC): Only with the pumped counted/pumped mode activated on a measuring system. Position of the selection valve on pumped counted or pumped not counted

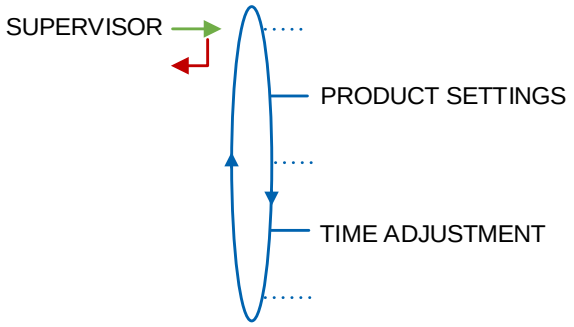
INJECTOR STATUS (with active option):

- **INJECTOR FEEDBACK**: Status of the injectors feedback: OFF/ON (choose the upstream state)
- **ADDITIVE TANK**: Empty additive tanks: OFF/ON.

DSPGI : DSPGI device number and associated product name (with active option).

3 SET THE CMA TRONIQUE

The most common operations performed by the owner operator, such as time adjustment or products setting, are briefly described below.



PRODUCT SETTINGS: The products are factory-set according to the list provided by the customer or during the commissioning of the system.

⚠ If you change the configuration of a product, make sure that its name and its type are consistent.

TIME ADJUSTMENT: You can adjust time (±2h) one time a day.

NOTA: Setup and configuration of the system are described in the MM 9008 Operating and Maintenance Manual. However, the most common operations performed by the owner operator, such as time adjustment or products setting, are briefly described below.

To access the setup, you must use an RFID key.

4 CONNECTED FEATURES

The wireless connection enables the MICROCOMPT+ to communicate with an embedded computer or with a PC/tablet/portable device, in hazardous area (ATEX).

The connected functions of the MICROCOMPT+ are the following:

⇨ Incoming data flow processing

⇨ Management of the communication modules below

Communication modules are listed below:

⇨ Wi-Fi (IEEE 802.11 b/g/n (2.4GHz) **OR** Bluetooth Low Energy 4.1

⇨ GSM (2G, 3G, 4G) / GPS

⇨ RFID NFC which allows the reading of an RFID key to switch in SUPERVISOR mode

⇨ Ethernet Base 10/100

The GSM module associated to the GPS navigation system allows the device tracking. Two antennas are located outside the MICROCOMPT box.

5 SPECIFIC FEATURES

5.1 Use with DSPGI device

If compartments are equipped with DSPGI devices, the DSPGI code associated to the product quality must be set (menu SUPERVISOR>PRODUCT SETTINGS>DSPGI CODE). A specific menu also allows you to assign a DSPGI code to an empty compartment (SUPERVISOR>DSPGI>EMPTY CODE).

Operation with DSPGI may or may not be blocking. If it is blocking, it is possible to suspend the blocking for the current operation. See the menu SUPERVISOR>DSPGI that describes the different features.

The name of the product that is supposed to be in the hose, is displayed in brackets at the right hand of DELIVERY, for example: DELIVERY (GO+). The product's name given by the DSPGI device is also displayed at the compartment selection or a return.

In case of communication failure with the DSPGI device, depending on the configuration, you can switch in manual mode without DSPGI. See the menu SUPERVISOR>DSPGI that describes the different features.

The product's name is replaced by warning messages in the following cases:

- DSPGI DEFAULT: The DSPGI is ON and there is a communication problem
- ?????: The DSPGI is ON and its drum is located between two positions
- DSPGI MISMATCH: Inconsistent data in loading plan and DSPGI (product or compartment)

The messages below are printed in the event log:

- DSPGI ERROR: A DSPGI default has been recorded
- DSPGI CONFLICT: When the product selected in degraded mode is different from the product known by the DSPGI.

5.2 Scheduling of the delivery

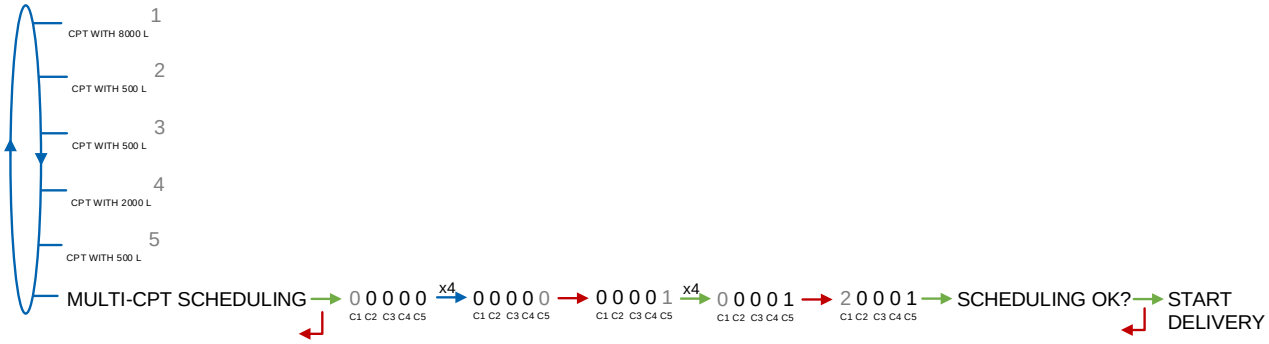
If the scheduling of the delivery is activated in SUPERVISOR MODE (CONFIGURATION>SCHEDULING→ON), you can use several compartments to make the delivery. These compartments are filled with the same product.

The compartments are used in the definite sequence. When the compartment is empty before the end of measurement, the MICROCOMPT+ waits for 5 seconds and then orders to close the

flap. It waits 5 seconds more and then orders to open the flap of the next compartment according to the definite sequence. Delivery starts again when the product height is enough, and so on until the measurement end.

The user can choose which compartment will be used for the delivery and in which order. If the option DSPGI or loading plan are ON, the compartments proposed for scheduling are those containing the selected product.

E.g.: Delivery of 800 liters of FOD+. Compartment 5: 500 liters of FOD+ and compartment 1: 8000. Sequence: compartment 5 then compartment 1. The scheduling menu is as follows:



Loading plan

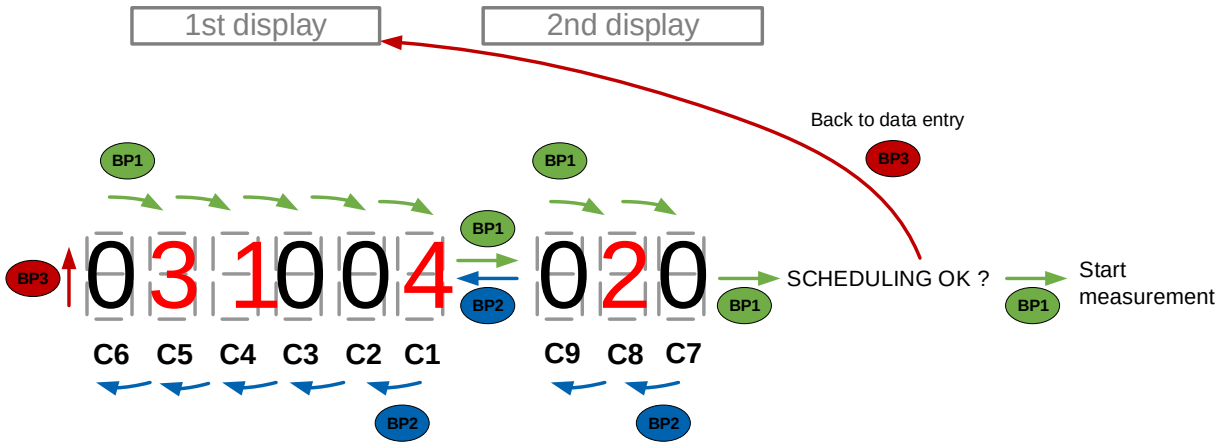
```
DUALTRONIQUE 4053+.001
VERSION 01.06 DATED 03.09.21
BOOT LOADER 03.00.03 (58C7)
PRINTED ON THE 15.09.21 AT 16:26
VEHICLE :  AA-215-EL
REFERENCE :  03201

********** LOADING PLAN **********

CPT N°    PROD.      QUANTITY (L)
1         FOD+        8000
2         GO          8000
3         GO          5000
4         GO          1000
5         FOD+         500
```

Cargo after delivery of FOD+

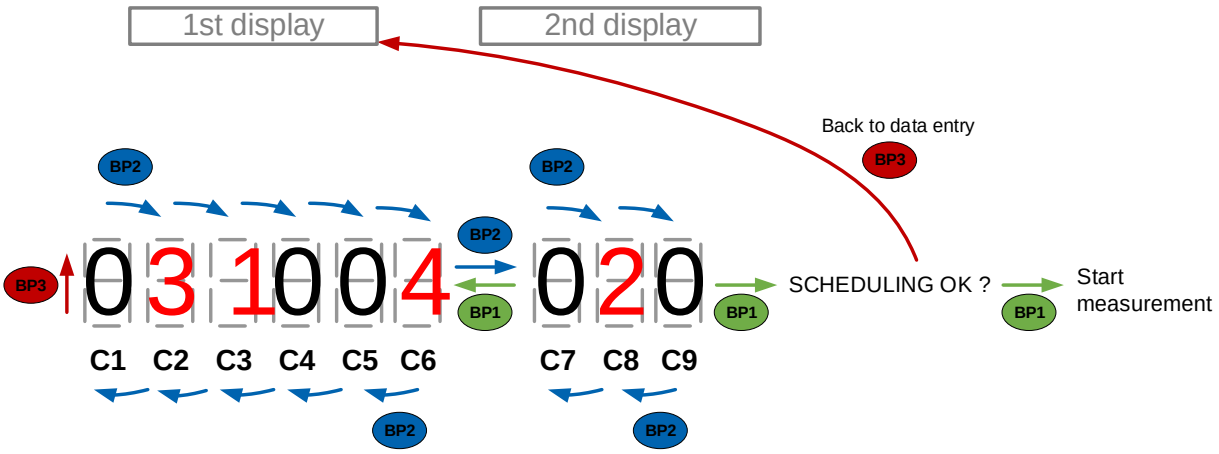
```
DUALTRONIQUE 4053+.001
VERSION 01.06 DATED 03.09.21
BOOT LOADER 03.00.03 (58C7)
PRINTED ON THE 15.09.21 AT 16:50
VEHICLE :  AA-215-EL
REFERENCE :  03201

********** CARGO PLAN **********

CPT N°    PROD.      QUANTITY (L)
1         FOD+        7700
2         GO          8000
3         GO          5000
4         GO          1000
5         FOD+           0
```

The ergonomics of the scheduling menu is as follows. It changes according to the array set in menu SUPERVISOR>CONFIGURATION>SCHEDULING→ON>ARRAY: compartments displayed from right to left or from left to right (menu).

<u>Left to right sequence number:</u>


1st display
2nd display
Back to data entry
BP3
BP1
BP1
BP1
BP3
0 3 1 0 0 4
0 2 0
BP2
BP1
SCHEDULING OK ?
Start measurement
BP1
C6 C5 C4 C3 C2 C1
C9 C8 C7
BP2
BP2

Right to left sequence number:



To include a compartment into the delivery, move on to the digit related to the compartment with BP1 (to the right) or BP2 (to the left), then validate with BP3. When you validate, the value 0 becomes the order number. When you validate again with BP3, the compartment is removed from the delivery, then the order numbers of the previous compartments are all decremented by one.

Select the right-hand digit and use BP1 to:

- Access the scheduling validation menu if there's no other compartment

- Access the second display. This display is used to include the other compartments into the delivery Select the left-hand digit and use BP2 to reach the first display. When the last compartment digit is selected, use BP1 to access the scheduling validation menu.

When you see the scheduling validation message SCHEDULING OK?, use BP3 to return to the first display.

5.3 Contamination control

According to the nature of the products, the CMA TRONIQUE calculates the purge volumes in order to ensure a downgrading of the brewing areas in order to never contaminate the noblest product.

The CMA TRONIQUE memorizes permanently the quality in hose 1, hose 2, manifold and the common pipe. It systematically displays the product contained in all these elements. When the quality is not defined, in case of mixture for example, it displays the first product.

The CMA TRONIQUE declares if a risk of contamination can occur. There's a mismatch between the selected product and the quality contained in the common pipe and the hose selected for delivery. This alert does not prevent the product selection. However, if the blocking contamination feature is activated CONTAMINATION>BLOCKING C.→ON, this situation requires a purge. It is possible to suspend the blocking for the current operation using the menu MAINTENANCE>CONTAMINATION>WITHOUT (NOT BLOCKING).

5.4 Distribution mode PRESET+PURGE

The distribution mode PRESET+PURGE can include a step that forces to select the hose for the next delivery. It is used to determine the volume of purge.

If the delivery has not been completed and if the purge has begun, you must complete the purge before starting the next delivery (menu PRODUCT MOVEMENTS>HOSE PURGE).

The delivery mode PRESET + PURGE is not available:

- If the CMA TRONIQUE doesn't control the compartment flap
- In pumped not counted distribution mode

6 ALARMS & TROUBLESHOOTING

6.1 Alarms

User alarms

		DISPLAY	MEANING	ACTION
USER	COMMON	DELIVERY STOP	Intentional interruption of the discharge	Continue, stop or finish delivery or product return
		EMERGENCY SHUTDOWN	Emergency stop triggered by remote control	Continue, stop or finish delivery or product return
		EC COMM.DEFAULT	Communication problem with the embedded computing	Try again and switch to degraded mode if the problem persists. COMPUTING→WITHOUT EC (DEGRADE)
		PRINTER DEFAULT	Communication with the printer lost	Make sure the connections are ok: cable, on-off switch and fuse
		The ticket is jammed	Jammed paper in the printer	Use the RELEASE button to eject the paper
		POWER SUPPLY PROBLEM	Power outage during operation	Check the cause / Restore power supply
		PTO DEFAULT	Inconsistency PTO return / run command	Check the power take-off status in the driver's cab
		DSPGI DEFAULT	Communication problem with the DSPGI	Make sure the DSPGI device is in operation
	COMMON PUMPED	INCOHERENCE WAY A/B	Inconsistent choice for EMA/EMB circuit	Check the position of the manual selection valves
		INCOHERENCE WAY C/NC	Inconsistent choice for Pumped Counted/Pumped Not Counted circuit	Make sure the manual selection valves are well-positioned
		OVERFILL DEFAULT	Overfill detected on a compartment	Transfer the product in another compartment
		PURGE NOT FINISHED	The purge sequence is not finished	Finish the purge of the manifold (and/or hose)
		FLOW PUMP DEFAULT	No flow after switching on the pump	If necessary, adjust the timer parameter
		ADDITIVATION FAULT	Problem with the additive system (cannot be managed properly)	Check the additive system
		ADDITIVE Y LOW LEVEL	(Y=1 or 2) Low level of the additive tank	Fill the additive tank
		ADDITIVE Y CONTROL	(Y=1 or 2) Non-guaranteed injection of the additive rate	Check the hydraulic system
		OVERFILL CLIENT DEF	Overfill detected on the customer tank	End delivery
	EMX	EMX LOW FLOW DEFAULT	Flow<Omin consecutively during 0.2* MMQ	Check the parameters and the hydraulic system (valve, strainer, nozzle…)
		EMX HIGH FLOW DEFAULT	Flow>Omax consecutively during 3 sec	Check the parameters / Reduce flowrate

Alarms which require the intervention of a repairer.

		DISPLAY	MEANING	ACTION
RATO	EMA (EmA	EMX METERING PROBLEM	Inconsistency of metering channels	Make sure the pulse emitter indicators are blinking and the wiring is well done / Change the pulse emitter if required
		EMX PULSES PROBLEM	Problem with the metering pulses	Make sure the pulse emitter indicators are blinking and the wiring is well done / Change the pulse emitter if required

		EMX TEMPER. DEFAULT	Temperature determination failure T<Tmin or T>Tmax	If steady alarm, see a repairer for trouble shooting
		EMX K-FACTOR DEFAULT	Deviation between coefficients K1 and K2 greater than 0.5%	Change the low-flow coefficient (K1)
		EMX TOTALISER LOST	Totalisers integrity problem	Substitution of the backup battery
		EMX PRESSURE DEFAULT	Pressure sensor out of range 4/20 mA	If steady alarm, see a repairer for trouble shooting
		EMX CONVER.DEFAULT	Problem during volume conversion	Make sure the set density is consistent
	COMMON	LEAK DETECTED	Metering detection without measurement	Make sure the check valve is tight
		DISPLAY DEFAULT	Integrity problem between the display and the display RAM proofreading	If steady alarm, substitution of the display card
		WATCHDOG DEFAULT	Triggering the watchdog function	Switch on-off the MICROCOMPT+ If steady alarm, substitution of the faulty card If steady alarm, substitution of the faulty card
		DATE AND TIME LOST	Problem with the clock	Set date and time
		DIARY DEFAULT	The events diary is lost	Acknowledge the alarm, make sure the date is ok If steady alarm, substitution of the backup battery
		MEMORY LOST	The measurements diary is lost	Acknowledge the alarm (enter then exit the metrological mode) If steady alarm, substitution of the backup battery Acknowledge the alarm (enter then exit the metrological mode) If steady alarm, substitution of the backup battery
		MEMORY OVER LOADED	Measurement storage area saturated (too many registrations over 90 days)	Acknowledge the alarm (enter then exit the metrological mode) If steady alarm, substitution of the backup battery
		BOOT LOADER DEFAULT	Inconsistency between the app and the version of the boot loader	Match the application software with the boot loader
		PARAMETER LOST	No more integrity of a secured memory area (SUPERVISOR parameters, preset end coeff...)	Acknowledge the alarm If steady alarm, substitution of the backup battery
		EEPROM MEMORY FAIL	Loss of metrological parameters	Change the AFSEC+ electronic card
		SAVE MEMORY DEFAULT	Integrity problem with memorized data	Change the AFSEC+ electronic card
		FRAME WORK DEFAULT	Integrity problem with software	Change the AFSEC+ electronic card

6.2 Wireless connectivity

Three tricolored LEDs on the MICROCOMPT+ front face are showing the wireless connection status as described in the table below:

AT POWER ON		
Flashing of the middle LED		
		Current update
	Nb de clignotements 1 2 3 4 5 6	 No micro SD card No update folder No update file The update file does not open Problem writing to flash memory No app and no update file

IN OPERATION			
	Left-hand LED: Bluetooth or Wi-Fi	**Middle LED: GSM / GPS**	**Right-hand LED: NFC (RFID)**

Steady light	Bluetooth  Wi-Fi 	Connection OK		Waiting for internet connection		
				Internet connection OK		
		Waiting for initialization		Waiting for initialization		
Flashing light	Bluetooth  Wi-Fi 	Slow flashing: Waiting for connection	 every 2 seconds	GPS OK		Authentication of the RFID key OK
	Bluetooth  Wi-Fi 	Rapid flashing: Communication in progress		Transfer in progress		RFID key not accepted, but authentication is ok
			 every 2 seconds	Coordinates not found		
		Initialization error		Initialization error		Authentication error of the RFID key

APPENDIX 1: PRINTINGS

PARAMETERS: COMPLETE PRINTING

Here, EMA and EMB are CMA TRONIQUE

```
  DUALTRONIQUE 4053+.001
  VERSION 02.02.00 DATED 07.12.22
  BOOT LOADER 05.00.00 (B6A97AA1)
  PRINTED ON THE 07.12.22 AT 11:24
  VEHICLE :  AA-000-AA
  REFERENCE :  01000

********* GENERAL PARAMETERS  *********

TRANSMIS. AUTOMATIC       :PULSE 4s
PTO                       :EMA
PUMPED NOT COUNTED        :EMA
OVERFILL PROBE            :LOCAL
CUSTOMER PROBE            :ON
CONVERSION                :VM
 REF T.: 15.0°C  D.T. REF: 15.0°C
COMPUTING                 :ON
 PRODUCT CODE             :ON
 PRINTER                  :WITHOUT
TICKET EMA                :XXX
TICKET EMB                :XXX
CURRENCY                  :EUR
EJECT TICKET              :ON
FORCED TICKET             :OFF
SUMMARY                   :DETAILS
LANGUAGE CATALOG          :xxx
SCHEDULING                :ON(C3C2C1)
START LOW FLOW VOLUME  :10 L
END LOW FLOW VOLUME       :30 L
DSPGI                     :OFF
LOADING PLAN              :(OPTIONAL)
REMOTE CONTROL            :OFF
DEADMAN SWITCH            :OFF
REEL CONTROL              :OFF
BLOWING TIMING            :5 s
MANIFOLD FILL TIMING      :30 s
NAME LINE OR MEASURING SYSTEM:
 EMA     : EMA
 EMB     : EMB
 LINE 1  : FLEXIBLE 1
 LINE 2  : FLEXIBLE 2
            H1   H2   COMMON    EMB
PURGE V.    90L  30L     30L    90L
BREWING V. 13L                  13L
PRODUIT     01   01      01     07
NUMBER OF CPT             :9
CPT/FLAP/RETURN/PROBE   /LF.H
  1 /ON   /ON     /ON     /0750
  2 /ON   /OFF    /OFF    /0750
  3 /ON   /OFF    /OFF    /0750
  4 /ON   /OFF    /OFF    /0750
  5 /ON   /OFF    /OFF    /0750  /A
  6 /ON   /ON     /ON     /0750  /A
  7 /ON   /ON     /ON     /0750  /B
  8 /ON   /ON     /ON     /0750  /B
  9 /ON   /ON     /ON     /0750  /B
CPT PLEXMI: Y,    RETURN PLEXMI: N
```

```
  DUALTRONIQUE 4053+.001
  VERSION 02.02.00 DATED 07.12.22
  BOOT LOADER 05.00.00 (B6A97AA1)
  PRINTED ON THE 07.12.22 AT 11:26
  VEHICLE :  AA-000-AA
  REFERENCE :  01000

********* EM PARAMETERS *********

EMA:CMATRONIQUE (9012) FH-EH
  VALVE TYPE              :INCREMENTAL
  MINIMUM QUANTITY        :    200L
  MIN FLOW: 04.00  / MAX: 050.00 M3/H
  COEFFICIENT K1          :10.0000 IMP/L
  FLOW Q1 (LF)            :  0.000 M3/H
  COEFFICIENT K2          :10.0000 IMP/L
  FLOW Q2 (HF)            :  0.000 M3/H
  CORRECTION VISCO        :+0.0%
  TEMPERATURE             :+22.5°C
   MIN (-10.0°C) - MAX (+50.0°C)
  CMA OPTION              :ON
   HYSTERESIS LF-HF       :150 MM
   END HEIGHT             :200 MM
   HYSTERESIS END-LF      :100 MM
   HEIGHT: 6356 MM / PRESS.DROP COEF:
1.50000
ZERO FLOW TIMING H1   :180s
ZERO FLOW TIMING H2   :200s
LF/HF: 007.0 / OBJ LF: 009.0 M3/H
MANIFOLD QUANTITY     :12L
CONVERSION FORMULA  :API54A
STOP FLOW  0.000 M3/H WITH 0.2 L
PRESET END COEFF.     :0.0992

EMB: CMATRONIQUE (9012) FH
  VALVE TYPE              :INCREMENTAL
  MIN FLOWRATE: 04.00/ MAX: 050.00 M3/H
  COEFFICIENT K1          :10.0000 IMP/L
  FLOW Q1 (LF)            :  0.000 M3/H
  COEFFICIENT K2          :10.0000 IMP/L
  FLOW Q2 (HF)            :  0.000 M3/H
  CORRECTION              :+0.0%
  TEMPERATURE             :OFF
  CMA OPTION              :ON
   HYSTERESIS LF-HF       :150 MM
   END HEIGHT             :200 MM
   HYSTERESIS END-LF      :100 MM
   HEIGHT: 6356 MM / PRESS.DROP COEF:
1.50000
ZERO FLOW TIMING    :180s
LF/HF: 007.0 / OBJ LF: 009.0 M3/H
MANIFOLD VOLUME :0L
CONVERSION FORMULA  :API54A
STOP FLOW  0.000 M3/H WITH 0.5 L
PRESET END COEFF.     :0.1700
```

```
  DUALTRONIQUE 4053+.001
  VERSION 02.02.00 DATED 07.12.22
  BOOT LOADER 05.00.00 (B6A97AA1)
  PRINTED ON THE 07.12.22 AT 11:28
  VEHICLE :  AA-000-AA
  REFERENCE :  01000

********* ADDITIVES PARAMETERS *********

ADDITIVE INJ              1 :EMA
ADDITIVE RETURN             :OFF
ADDITIVE LEVEL CTRL         :OFF
ADDITIVE PULSE              :0.5 s
ADDITIVE INJ              2 :EMA
ADDITIVE RETURN             :OFF
ADDITIVE LEVEL CTRL         :OFF
ADDITIVE PULSE              :0.5 s

********* PRODUCT PARAMETERS *********

FOD+  (01/-) OFF CO+A+BA
EMA NO ADD
UP:0000.0 EUR/M3 TTC TAX : 0020.0

FOD   (02/-) OFF CO+NA+BA
EMA NO ADD
UP:0000.0 EUR/M3 TTC TAX : 0020.0

GO+   (03/-) OFF NC+A+10
EMA NO ADD
UP:0000.0 EUR/M3 TTC TAX : 0020.0

GO    (04/-) OFF NC+NA+10
EMA NO ADD
UP:0000.0 EUR/M3 TTC TAX : 0020.0

GNR+ (05/-) OFF CO+A+10
EMA NO ADD
UP:0000.0 EUR/M3 TTC TAX : 0020.0

GNR   (06/-) OFF CO+NA+10
EMA NO ADD
UP:0000.0 EUR/M3 TTC TAX : 0020.0
```

SUMMARY:

```
DUALTRONIQUE 4053+.001
VERSION 02.02.00 DATED 07.12.22
BOOT LOADER 05.00.00 (B6A97AA1)
PRINTED ON THE 07.12.22 AT 15:40
VEHICLE :  AA-000-AA
REFERENCE :  01000

SUMMARY OF DELIVERIES OF
07.12.22 (DAY 341)
006 MEMORISED RESULTS

**** DAILY TOTALISERS ****

FOD+     (01) :     00001400 L   +10,5°C
FOD      (02) :     00000300 L   +11,3°C
GO+      (03) :     00000000 L   +00,0°C
GO       (04) :     00001090 L   +11,2°C
GNR+     (05) :     00000500 L   +11,9°C
GNR      (06) :     00000000 L   +00,0°C

TOTAL FROM 1 TO 6: 00003290 L


********** DAILY SUMMARY **********
 HR     HR   NO  E             (L)      (°C)
START END  MES M PROD  VOLUME  TEMP
09:40  09:42 A01 A  FOD     00300    +11,3
10:26  10:29 D02 A  FOD+    01000    +10,3
10:38  10:40 A03 A  FOD+    00400    +11,1
10:02  10:07 D04 A  GO      01000    +11,2
11:29  11:31 P05 A  GO      00090    +11,5
11:51  11:54 D06 A  GNR+    00500    +11,9

(D) PRESET; (L) FREE;
(A) PRESET+PURGE; (P) PURGE;
(T) TRANSFER;(C) LOADING;
(V) DRAINING; (B) RELEASE;
(G) GRAVITY; (-) UNDEFINED
```

```
DUALTRONIQUE 4053+.001
VERSION 02.02.00 DATED 07.12.22
BOOT LOADER 05.00.00 (B6A97AA1)
PRINTED ON THE 07.12.22 AT 15:40
VEHICLE :  AA-000-AA
REFERENCE :  01000

SUMMARY OF DELIVERIES OF
07.12.22 (DAY 341)
006 MEMORISED RESULTS

**** DAILY TOTALISERS ****

FOD+     (01) :     00000300 L   094%
FOD      (02) :     00001400 L   - - -
GO+      (03) :     00001090 L   - - -
GO       (04) :     00000000 L   - - -
GNR+     (05) :     00000000 L   099%
GNR      (06) :     00000500 L   - - -

TOTAL FROM 1 TO 6: 00003290 L


********** DAILY SUMMARY **********
HR     HR   NO  E             (L)      (%)
START END  MES M PROD  VOLUME  RATE
09:40  09:42 A01 A  FOD     00300    - - -
10:26  10:29 D02 A  FOD+    01000    100
10:38  10:40 A03 A  FOD+    00400    080
10:02  10:07 D04 A  GO      01000    - - -
11:29  11:31 P05 A  GO      00090    - - -
11:51  11:54 D06 A  GNR+    00500    099

(D) PRESET; (L) FREE;
(A) PRESET+PURGE; (P) PURGE;
(T) TRANSFER;(C) LOADING;
(V) DRAINING; (B) RELEASE;
(G) GRAVITY; (-) UNDEFINED
```

With active option

TOTALISERS:

```
DUALTRONIQUE 4053+.001
VERSION 02.02.00 DATED 07.12.22
BOOT LOADER 05.00.00 (B6A97AA1)
PRINTED ON THE 07.12.22 AT 15:41
VEHICLE :  AA-000-AA
REFERENCE :  03201


********** TOTALISERS**********

TOTALISER EMA (VM) : 000056638 L

TOTALISER EMB (VM) : 000056638 L


FOD+     (01) :      00000399 L
FOD      (02) :      00000198 L
GO+      (03) :      00000000 L
GO       (04) :      00000999 L
GNR+     (05) :      00000000 L
GNR      (06) :      00000000 L
         (07) :      00001000 L
         (08) :      00000000 L
         (09) :      00000000 L
         (10) :      00000000 L
         (11) :      00000000 L
         (12) :      00000000 L
         (13) :      00000000 L
         (14) :      00000000 L
         (15) :      00000000 L
         (16) :      00000000 L

TOTAL FROM 1 TO 16 : 000002196 L
NO ALLOCATED VOLUME : 00000008 L
```

Main display according to the configuration:
VM, VB or blank (for masses)
Unit: depending on the set scale interval

LOADING PLAN

```
DUALTRONIQUE 4053+.001
VERSION 02.02.00 DATED 07.12.22
BOOT LOADER 05.00.00 (B6A97AA1)
PRINTED ON THE 07.12.22 AT 14:47
VEHICLE :  AA-000-AA
REFERENCE :  01000

********** LOADING PLAN **********

CPT N°   PROD.      QUANTITY (L)

  1      FOD            1000
  2      FOD+           2000
  3      GO             3000
  4      GO+            4000
  5      GNR            5000
```

CARGO PLAN

```
DUALTRONIQUE 4053+.001
VERSION 02.02.00 DATED 07.12.22
BOOT LOADER 05.00.00 (B6A97AA1)
PRINTED ON THE 07.12.22 AT 14:52
VEHICLE :  AA-000-AA
REFERENCE :  01000

********** CARGO PLAN **********

CPT N°   PROD.      QUANTITY (L)

  1      FOD             500
  2      FOD+           2000
  3      GO             1500
  4      GO+            3000
  5      GNR            5000
```

RELATED DOCUMENTS

GU 7034	Operating Guide CMA TRONIQUE
GU 7098	Operating Guide RCT5 remote control
DI 002	Installation guide CMA TRONIQUE
DI 018	Installation guide CMA TRONIQUE electromagnetic
MM 9008	Commissioning & Maintenance Manual DUAL TRONIQUE