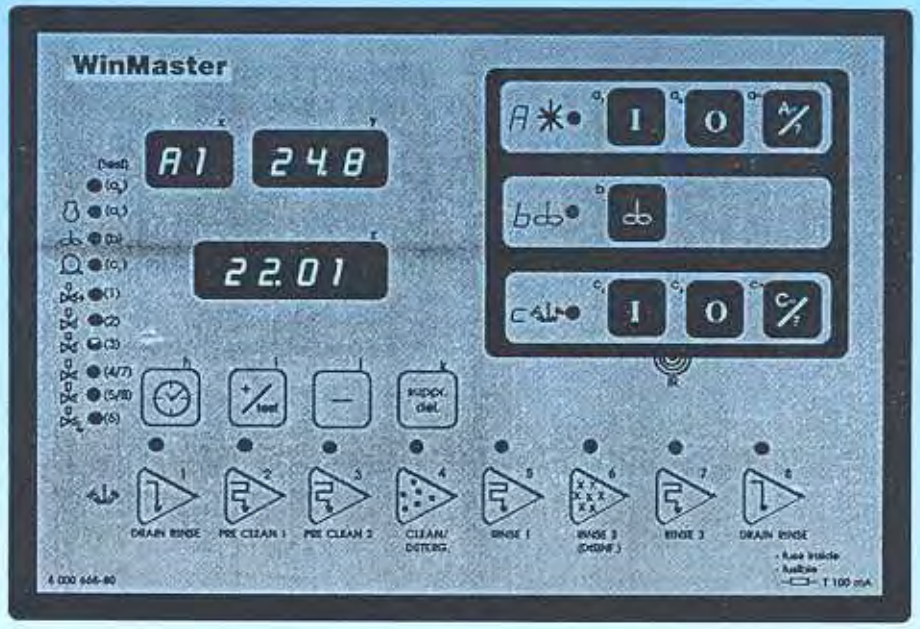
Wedholms

WinMaster

Control and data logger system for milk coolers

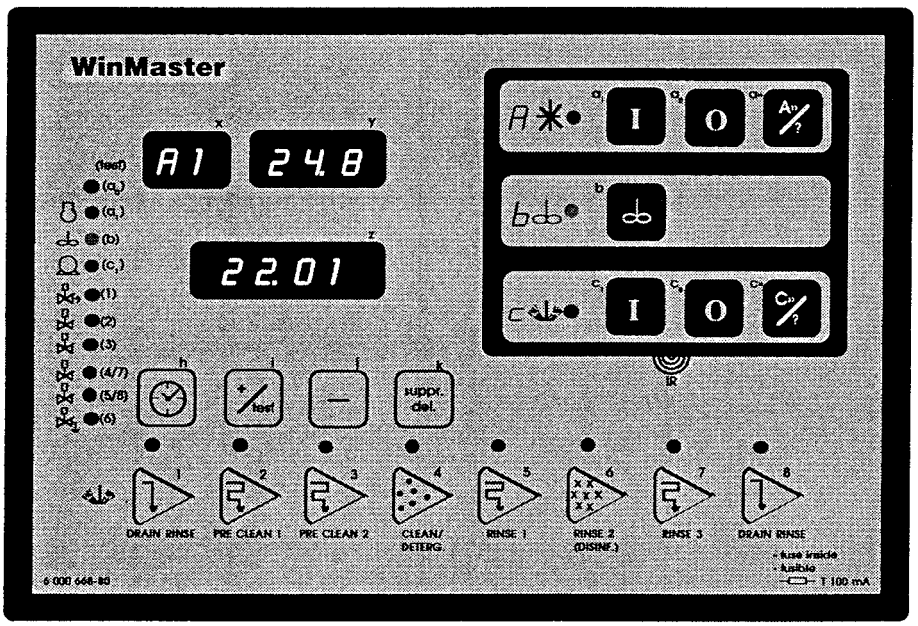


INSTRUCTION BOOK FOR FUNCTIONNING, PROGRAMMING AND TROUBLE SHOOTING

S U M M A R Y

WinMaster

Control and data logger system for milk coolers



WinMaster is a control and data logger system for milk coolers.

WinMaster runs and checks the cooling, agitation and cleaning.
On three permanent displays, the ongoing duty, temperature and time can always be read.

The control panel contains key boards, symbols and indications to trim, control and adjust all the different functions to assure maximum performance.
It includes several useful alarm functions and a data logger storing important information about temperature, duty, power failure, alarm, etc ...

The electronic circuit is designed for protection according to highest standards against disturbances, like parasites or over- and under voltage.

General description

GENERAL DESCRIPTION

RESENTATION

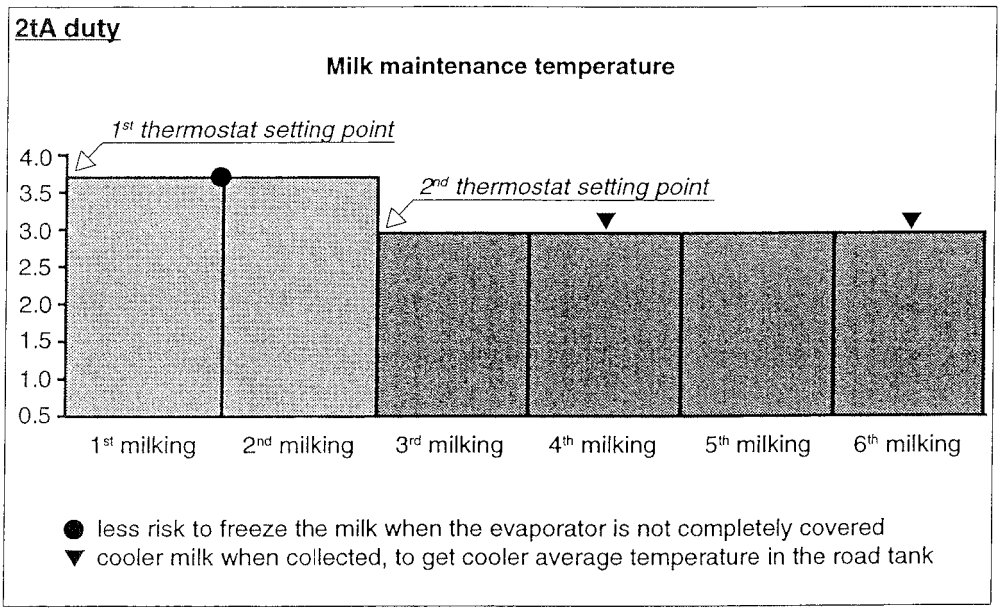
Userfriendly, easy to operate

- front keyboard including the control for the duties : cooling, agitation, cleaning
- superbright digital display (duties, tempertaure at 0.1°C or F, time)
- permanent display of the cooling or automatic cleaning running point

PGRADED FEATURES

Cooling

- delay before starting at the 1st milking : allows the starting of the cooling with the best conditions, with time countdown and temperature displays
- possible control of 2 thermostat setting points (for ex. for cheese processing applications)
- 2tA duty : this new feature is especially interesting, reduces the risk of milk freezing during the first milkings but allows lower temperature when the milk is collected (automatic switching from the 1st thermostat setting point to the 2nd)



Agitation

- cyclic, forced, 2 min. timer for sampling with clear countdown display
- gentle agitation feature : programmable when the milk is warm (Prominox patent)
- planned forced agitation before milk collection

Cleaning

- direct to drain rinses, hot water percentage programmable for rinse, adjustable cleaning water quantity and spraying time, water level control, ...
- ready for direct control of detergent / acid dosing pumps with level detection of the products : easy handling of products.
- possibility to add a 2nd drain valve in order to separate the drain waters (milk rinsing water separated from detergent water)

ALARMS ERRORS MESSAGES AND SAFETY CONTROLS

Clear display on the control box, possible connection to an external warning system (light, sound, telephone transmitter, ...)

- 13 possible alarm sources as : faulty cooling unit, agitator, pump, too long cooling, too cold cleaning, no/not enough cleaning water, faulty temperature sensor ...
- possible connection to the milking machine in order to avoid to forget switching on the cooling unit
- possible connection to the milk outlet valve control (valve closed for cooling and open for cleaning)
- anti short-cycle feature for the compressor when electricity supply tripps out ...

TEST FEATURE

Operation of every output is easy to control.

PARAMETER CONTROL MODE

The following parameters are easy to check at any time :

Cooling

- thermostat setting point(s)
- minimal reached temperatures during the 5 last cooling cycles
- operating time of the cooling unit during the last 5 cooling cycles and from the erection

Cleaning

- maximal reached temperatures during the 5 last cleaning cycles
- types of cleaning cycles processed during the 5 last cleaning cycles
- percentage of rinse hot water, reference filling time

DATALOGGER FEATURE

IN

- logging of the temperature variations, the functionning parameters of the plant (types of cooling duties, cleaning cycles, standby, cooling unit and pump operation, alarms, electricity supply outtripping)
- logging frequency adjustable from 1 min to 60 min : this allows to store, for example:
  - . datas during 30 days with one memory input every 5 minutes.
  - . datas during 60 days with one memory input every 10 minutes.
  - . datas during 6 days with one memory input every minute.

OUT

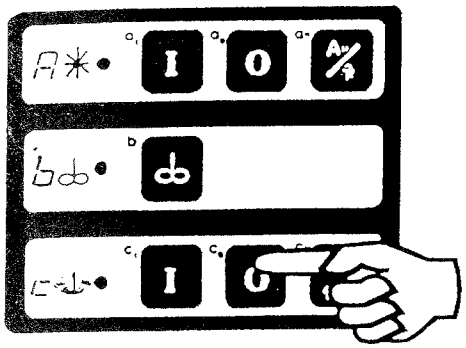
from the WinMaster unit to a special box, the WinLink via infra-red transmission, without any physical connexion.
The WinLink can store the functionning datas issued from 15 different installations.

Data analysis

After connexion of the Winlink to a PC, analysis will be processed via a special software : the WinGraph .

Functionning

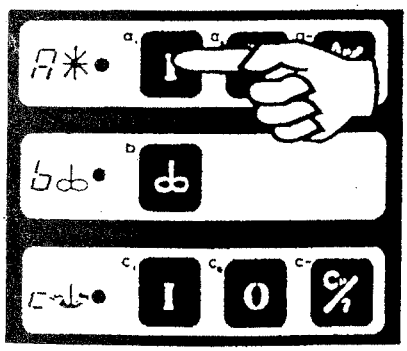
BASIC INSTRUCTIONS FOR THE FARMER



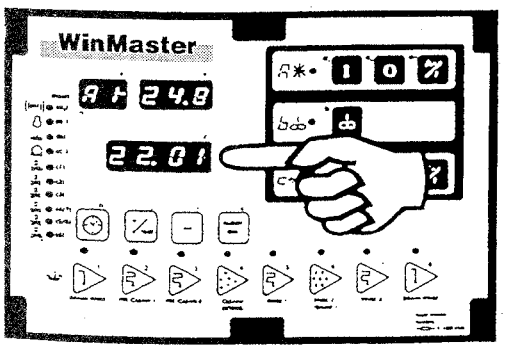
1 • Push on key $\mathbf{c}_0$ to stop the cleaning function.

2 • Close the tank outlet valve.

3 • Position the milk inlet pipe.



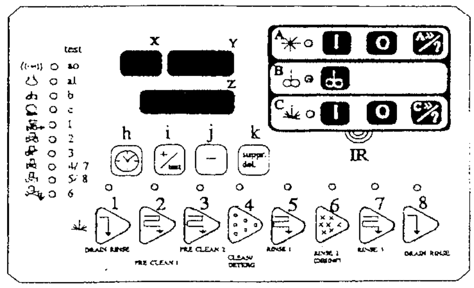
4 • Push on key $\mathbf{a}_1$ to start the cooling with delay before starting (1st milking).



5 • Check that the countdown is activated.

GENERAL INSTRUCTIONS FOR USE

The WinMaster must be on standby mode :



- display flashing
- display on

NOTA :
At any moment, a prolonged push on key a>> (3 sec.) allows to enter consulting mode of cooling parameters.

• The cleaning program must be finished and stopped If the led c is on, and the countdown running (2), wait for the end of cleaning. When you read (z) display 00.00:

c_0 [0] → *stop the cleaning and start the standby mode*

• If one or several alarm(s) and one or several error message(s) are displayed, find the default, remedy it and cancel the alarm(s) by pushing on k.

→ x [ ] y [15.8] milk temperature

z [16.20] current time

Starting of the cooling, first milking : delay before starting

A ✳ o a_1 [I] → x [At] y [3.6] (flashing) — setting point

z [15.00]

then : x [At] y [15.8] real milk temperature

z [14.43]

countdown (z) till starting (min. sec.)

manual change of duty :

→ a» 1 push → A1

→ a» 2 pushes → A2

→ a_0 [0] 1 push → standby

automatic change of duty :

→ end of the countdown → A1

The cooling proceeds automatically to the 1st setting point. The agitator runs first with the cooling unit and then with cyclic agitation.

Immediate starting of the cooling : cancellation of delay before starting

A ✳ o a_1 [I] + A ✳ o a»

→ *the WinMaster switches automatically to A1 duty.*

Cooling according to the 2nd setting point :

(only if the WinMaster has been programmed for 2 setting points)

when A1 (or b1) duty is running :

A ✳ o a» → *the WinMaster switches immediatly to A2 (or b2) duty*

Stopping of the cooling:

a_0 [0] → *cooling stopped Unit on standby.*

INSTRUCTIONS FOR CHANGE OF DUTIES

display flashing — display on

NOTA :
At any moment, a prolonged push on key a>> (3 sec.) allows to enter in consulting mode of cooling parameters.

x: [blank] y: 15.8
z: 16.20

standby

manual change of duty :

→ a1 [I] → At (if prog.5A>0)

→ a1 [I] → A1 (if prog.5A=0)

→ b → bt

→ b (2 pushes) → b3

---

a1 [I] → x: At y: 3.6 (flashing)
z: 15.00

flashes 3 sec. then :

x: At y: 15.8
z: 27.45

delay before starting

countdown (z) till starting (min. sec.)

At

manual change of duty :

→ a» → A1

→ a» (2 pushes) → A2

→ a0 [0] → standby

automatic change of duty :
at the end of the countdown, the unit switches automatically to (A1).

→ x: A1 y: 3.2 (flashing)
z: 16.20

A1

the value of the setting point (y) flashes 3 s. then :

x: A1 y: 11.8
z: 16.20

thermostatic control according to 1st thermostat setting point, cyclic agitation

manual change of duty :

→ a» → A2

→ a» → if 1F is programmed : without any effect

→ b → b1

→ a0 [0] → standby

automatic change of duty :
• if 2tA is programmed, the unit switches automatically to (A2) after programmed time (ex. : 24 h.)
• according to prog. 5b to 8b -->(b1)

→ x: A2 y: 2.5 (flashing)
z: 07.30

the value of the setting point (y) flashes 3 s. then :

A2

x: A2 y: 4.3
z: 07.30

thermostatic control according to 2nd thermostat setting point cyclic agitation

manual change of duty :

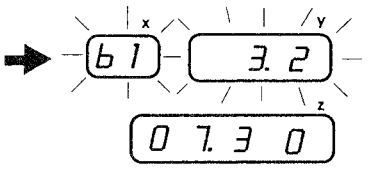
→ a» → A1

→ b → b2

→ a0 [0] → standby

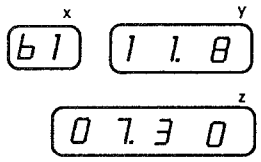
automatic change of duty :
• if 2Ft is programmed, the unit switches automatically to(A1) after 30 min.
• according to prog. 5b to 8b -->(b2)

COOLING AND AGITATION



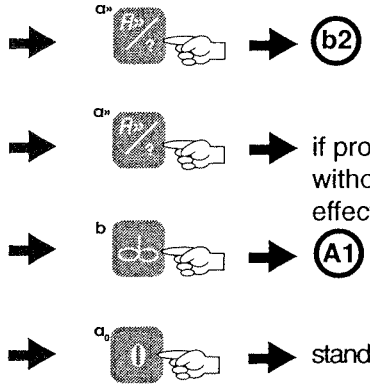
the value of the setting point (y) flashes 3 s. then :

b1

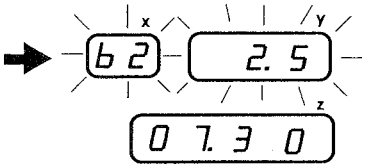


thermostatic control according to 1st thermostat setting point forced agitation (limited at 4h.)

manual change of duty :

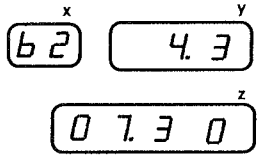


automatic change of duty :
•after 4 h. --> (A1)
• if 2tA is programmed, the unit switches automatically to (b2) after programmed time (ex. : 24 h.)



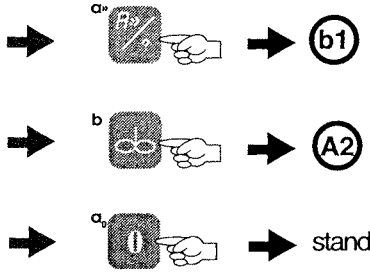
the value of the setting point (y) flashes 3 s. then :

b2

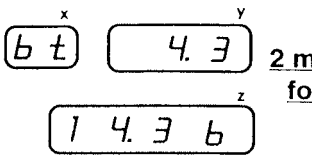


thermostatic control according to 2nd thermostat setting point forced agitation (limited at 4h.)

manual change of duty :



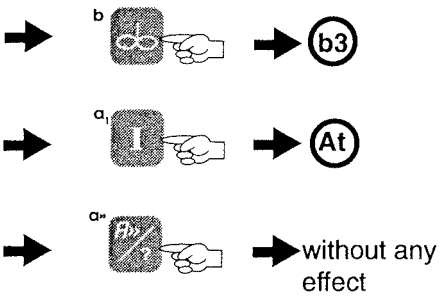
automatic change of duty :
•after 4 hours --> (A2)
• if 2Ft is programmed, the unit switches automatically to (b1) after 30 min..



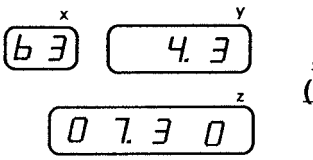
2 min. agitation for sampling

bt

manual change of duty :



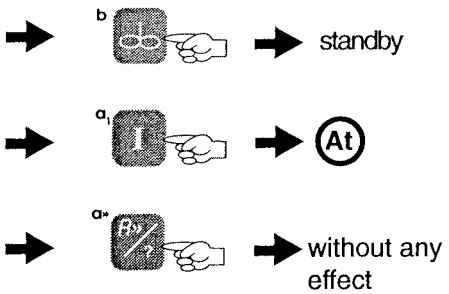
automatic change of duty :
•after 2 min. --> standby



agitation (limited to 4 hours)

b3

manual change of duty :



automatic change of duty :
•after 4 hours --> standby

CONTROL OF THERMOSTAT SETTING POINTS

General points :

The WinMaster program allows to use different setting points according to 4 modes : 2tA, 2Ft, 2F and 1F.

2tA : two setting points with automatic switching delay *(automatic functionning according to the basic programmation - "factory basic program")*

1F : only one setting point *(A2 is not allowed)*

2F : two setting points *(manual switch from A1 to A2, or from A2 to A1 by pushing on key a>>)*

2Ft : two setting points : one permanent, the other limited in time

A1 is permanent.

A2 is limited at 30 min. :

--> manual switch from A1 to A2 with the key a>>

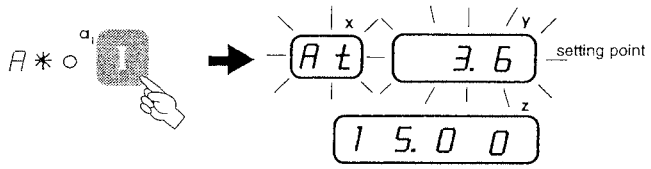
--> automatic switch to A1 after 30 min. to A2.

This duty can be used to decrease the setting point during 30 min. (temporary lowering of the setting point)

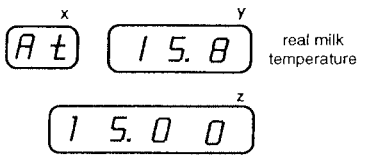
Explanation for the 2tA mode :

Starting of the cooling, first milking, with delay before starting :

Example : first setting point - set1 = 3.6°C
second setting point - set 2 = 3.0°C



then :



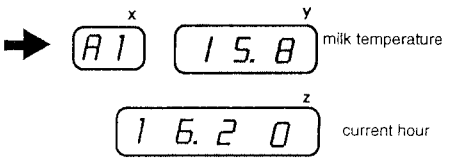
countdown (z) till starting (min. sec.)

Allows to start the cooling automatically after a certain time (ex. : 30 min.) :

- *it is not necessary to go back to the milk cooler after the starting of milking*
- *cooling and agitation duties are optimized (sufficient quantity of milk in the milk cooler)*

Functionning according to the first setting point A1 :

from At, automatic switch to A1:

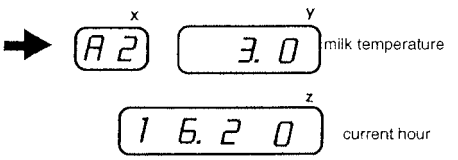


The milk will be cooled and its temperature maintained around the setting point (3.6°C / ±0.3°C)

- *good cooling*
- *limited risk to freeze the milk at the 1st et 2nd milking (even in case of low milk quantities)*
- *keep the milk at a temperature below 4°C*

Functionning according to the second setting point A2 :

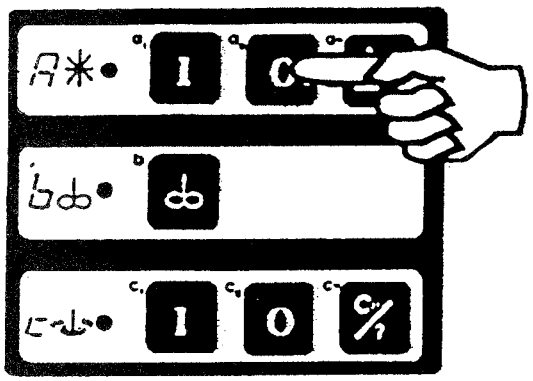
after 24 h. functionning according to A1, the WinMaster **will switch automatically to A2** :
(the time (24 h.) can be modified in the program)



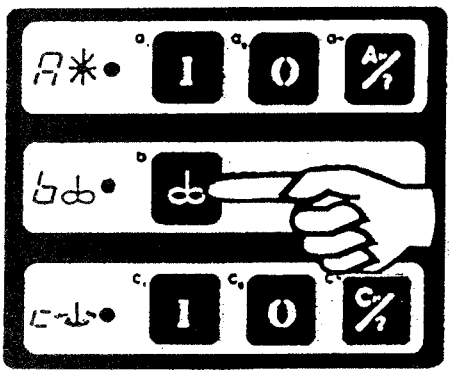
The milk will be cooled and its temperature maintained around the 2nd setting point (3.0°C / ±0.3°C)

- *keep the milk at a lower temperature (= the average temperature of the mixed milk in the road tanker is colder)*
- *risk of milk freezing very limited :*
  - *. by keeping a higher temperature for the 1st and 2nd milking, when the evaporator is not correctly covered.*
  - *. by keeping a lower temperature for the last milkings, when the evaporator is correctly covered.*

BASIC INSTRUCTIONS FOR THE ROAD TANK DRIVER



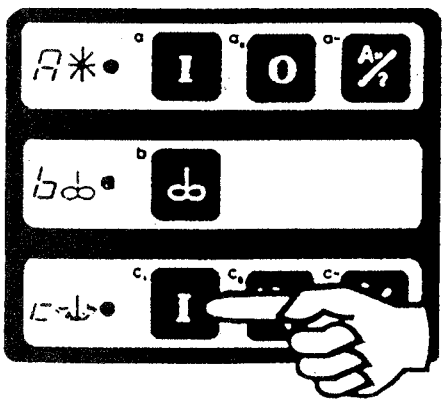
1 • Push on key a_0 to stop the cooling function.



2 • For sampling, push on key **b** for a 2 min. agitation.

3 • Collect the milk.

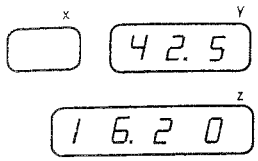
4 • Check that the tank outlet valve is opened.



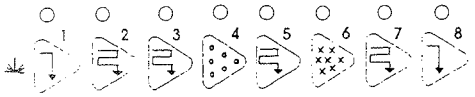
5 • Push on key c_1 to start the automatic cleaning.

6 • Wait 10 s. to check the good starting of cleaning (countdown activated).

GENERAL INSTRUCTIONS FOR USE



standby



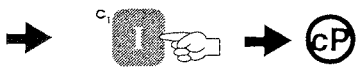
display flashing — display on

Led off — Led flashing — Led on

NOTE :
Last 2 min. of cleaning program are important to get complete drainage (drain valve open at this stage).

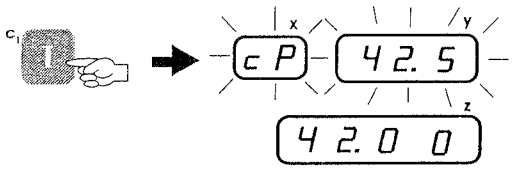
At any moment, a prolonged push on key c>> (3 seconds) allows to enter control mode of cleaning parameters.

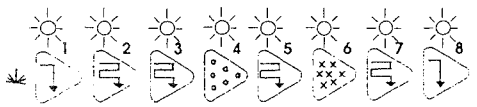
manual change of duty :



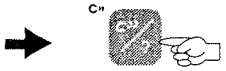
automatic change of duty :
starting of the cleaning program after 10 sec.

selection of the cleaning program before starting (after 10 sec.) :

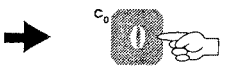




selection of the program :



→ cP or c1 (cf parameters entered in OC), c2 c3

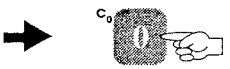


→ program stopped

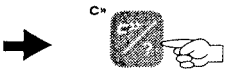
cP = long program
C1 = long program - without drain rinse 8
C2 = short program
C3 = rinse of the tank (pre-rinse)

Note : if the key c>> is locked, only the program cP (or c1) is usable.

available manual selection :

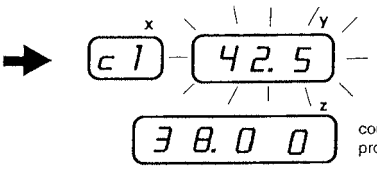


→ program is stopped
(restart by pushing on key C1)



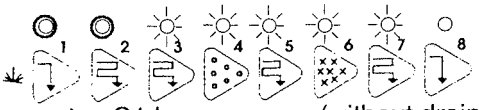
→ switch to next cleaning step (unless key c>> is locked)

if c1 selected :



countdown of the program c1

c1



→ C1 long program (without drain rinse 8) is activated

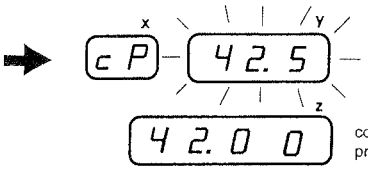
available manual selection :

→ program is stopped

(restart by pushing on key c1)

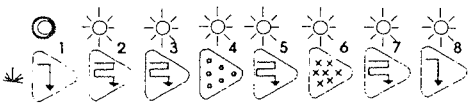
→ switch to next cleaning step (unless key c>> is locked)

if cP selected :



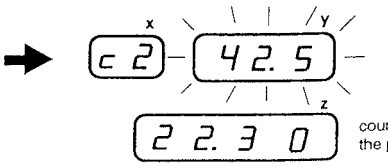
countdown of the program cP

cP



→ cP long program is activated.

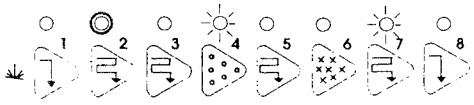
if c2 selected :



countdown of the program C2

c2

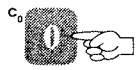
CLEANING



➡ c2 short program is activated

c2

available manual selection :

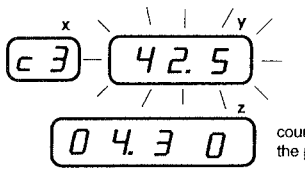
➡  ➡ program is stopped

(restart by pushing on key c1)

➡  ➡ switch to next cleaning step (unless key c>> is locked)

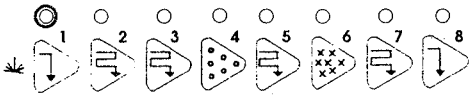
---

if c3 selected :

➡ 

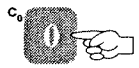
countdown of the program c3

c3



➡ c3 rinse program is activated

available manual selection :

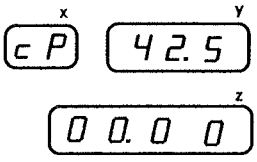
➡  ➡ program is stopped

(restart by pushing on key c1)

➡  ➡ switch to the end of cleaning (unless key c>> is locked)

---

end of the program :

➡ 

➡ end of the cleaning program

manual selection :

➡  ➡ switches the cleaning off

This operation is needed to quit the cleaning duty.

Alarm, errors messages and safety control

LIST OF ALARMS

ALARM N°	DIGITAL DISPLAY			COMMENTS
	x area	y area	z area	
E1	AL	E1	Sond	▶ Sensor defect : short cut
E2	AL	E2	Sond	▶ Sensor defect : sensor disconnected
E3	AL	E3	Long	▶ Too long cooling (longer than 6A)
E41/E45	AL	E41 E45	SoFt	▶ Memory fault, back to factory program (cooling parameters)
E42/E46	AL	E42 E46	SoFt	▶ Memory fault, back to factory program (agitation parameters)
E43/E47	AL	E43 E47	SoFt	▶ Memory fault, back to factory program (cleaning parameters)
E44/E48	AL	E44 E48	SoFt	▶ Memory fault, back to factory program (extended parameters)
E50 E51	AL AL	E50 E51	Agit Agit	▶ No phase for agitator (relay, klixon faulty) Phase for agitator anormally present
E6	AL	E6	Frig	▶ Condensing unit faulty
E70 E71	AL AL	E70 E71	Pump Pump	▶ Cleaning pump faulty ▶ Contact for cleaning pump anormally closed
E80 E81	AL AL	E80 E81	H20 H20	▶ Water level not correct during cleaning ▶ Water or milk anormally present in the water level detector
E9	AL	E9	rES	▶ Default for in line heater thermostat / resistance (if connected)
E10	AL	E10	Prod	▶ Cleaning product level too low for automatic dosing
E11	AL	*recorded temperature*	E11	▶ The max. cleaning temperature was too low
E12	AL	E12	--Al	▶ Milking plant on and cooling off (if connected)
E13	AL	E13	OutL	▶ Position of the tank outlet valve not correct (if option connected) (should be open for cleaning and closed for cooling)

In order to cancel the alarm and the error message, please correct the fault and press on k key (del).

ALARMS AND TROUBLE SHOOTING GUIDE

SYMPTOM	POSSIBLE ORIGIN	CHECKING	ACTION REMARKS
No digital display. WinMaster not working	faulty power supply	power supply present	switch power supply back on
	faulty fuse / circuit breaker in the control phase power supply	check the position of the control phase protection fuse / circuit breaker inside the contactor box	reset the fuse / circuit breaker
	faulty 100 mA fuse inside the box	check the 100 mA fuse	replace the fuse. The fuse protects the WinMaster internal circuit supply and the transformer.
	faulty transformer	the 100 mA fuse blows up	replace the basic circuit board (ref. 6 000 668-10)
	other WinMaster faults		replace the basic circuit board (ref. 6 000 668-10)
The WinMaster does not work.	too low ambient temperature	the WinMaster has just been put into operation after a storage period under low ambient temperature (below 0°C)	- wait until WinMaster box is warm again - place the electronic boards in a temperate place before putting into operation

displayed alarms :

x AL y E 1 z Sond	very high temperature sensor reading, sensor is short cut, humidity on the connectors	state of the temperature sensor connections (connectors 1 and 2)	- correct the connections - take away any excess of humidity on the connectors - replace the sensor (ref. 7 349 713-30 or 31)
x AL y E 2 z Sond	very low temperature sensor reading, disconnected sensor, cut sensor	state of the temperature sensor connections (connectors 1 and 2)	- correct the connections - replace the sensor (ref. 7 349 713-30 or 31)
x AL y E 3 z Long	too long cooling time (longer than maximum allowed time) :		
	a) the programmed maximum allowed time is too short for the plant (milk qty / cooling power)	- check the programmed time : cooling parameters, 6A "ALA" (normal time 4 milkings : 3h20, 2 milkings : 3h50)	increase the programmed time if necessary
	b) high ambient temperature, dirty condenser	- check the state of the condenser	clean the condenser fins with a soft brush or compressed air
	c) other cooling problem	check the genaral functionning, refrigerant charge, compressor functionning, fans, pressostat(s) controlling the fan(s), ...	- eventually use the TEST duty ("i" key) - correct the fault

ATTENTION

k suppr. del.

TO DELETE ALARM

after correcting the fault, press briefly on "k" key.

SYMPTOM	POSSIBLE ORIGIN	CHECKING	ACTION REMARKS

display alarms :

an important interference caused a memory default

from :
x AL y E41
z SoFt
to :
x AL y E48
z SoFt

a) E41 to E44 : RAM memory	▶ - check the functionning - control the thermostat setting point	▶ normally, reprogramming is not usefull
b) E45 to E48 : EPROM memory	▶ "factory" parameters have been initialised instead of the previously programmed parameters. Check the programming and the duties.	▶ E45 : reprogram the cooling parameters which differ from the "factory" parameters E46 : reprogram the agitation parameters which differ from the "factory" parameters E47 : reprogram the cleaning parameters which differ from the "factory" parameters, particularly 2c, 3c, 4c, 5c, 7c. E48 : reprogram the extended parameters which differ from the "factory" parameters, particularly 8d and 9d (identification number code of the tank : 8d = 4 first digits 9d = 4 last digits).

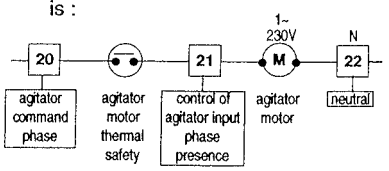
x AL y E50
z AGit

and :
A - the agitator motor is working

B - the agitator motor is not working

No agitator motor input phase at connector 21, but WinM commands the agitator to run.

▶ The normal electrical connection is :



a) The electrical connection does not correspond to the above drawing.	▶ check the connections, particularly at connector 21.	▶ Correct.
b) One of the faults explained in B has appeared for a limited time.	▶ check the running of the agitator motor	▶ Delete the alarm.
a) The electrical connection does not correspond to the above drawing.	▶ check the connections, particularly at connector 21.	▶ Correct.
b) The agitator motor thermal safety has tripped out.	▶ Is the motor hot ? Is it blocked ? (Is the paddle blocked ? Is there ice ?)	▶ Release. If there is ice, check the functionning of the thermometer / thermostat
	▶ The thermal safety is damaged (cut out).	▶ Replace the agitator motor.
c) The WinMaster static relay is faulty	▶ No command phase at connector 20.	▶ Replace the WinM basis circuit board (ref. 6 000 668-10)

x AL y E51
z AGit

and :
A - the agitator motor is working normally

B - tha agitator motor is turning continuously and does not stop

faulty presence of agitator input phase at connector 21

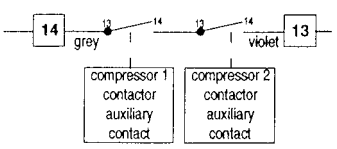
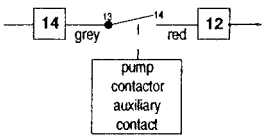
- faulty electrical connection	▶ Is the electrical connection correct according to the drawing of AL E50 ?	▶ Correct if necessary.
-the "emergency" clock/switch has been operated	▶ Check if the clock/switch has been operated	▶ Stop the clock/switch if necessary (delete the alarm ("k" key), and check the agitator duty).
- another switch for forced agitator operation has been installed	▶ Check	▶ Correct if necessary.
- the WinMaster static relay is faulty (permanently closed)	▶ -presence of agitator motor input phase at connectors 20 and 21, even in standby position.	▶ Replace the WinM basic circuit board (ref. 6 000 668-10)

ATTENTION

k suppr. del.

TO DELETE ALARM

after correcting the fault, press briefly on "k" key.

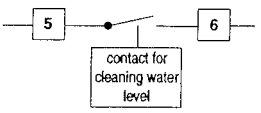
SYMPTOM	POSSIBLE ORIGIN	CHECKING	ACTION REMARKS
displayed alarms : x AL y E6 z Fri G and : A - the compressor contactor (1 or 2) closes, the compressor(s) work(s) normally	- faulty frigorific unit		
	- no continuous line between connector 14 (common/grey wire) and connector 13 (condensing unit/violet wire) but WinM commands the frigorific unit to run.	▶ The normal electrical connection is : 	
	- faulty electrical connection	▶ - check the connections according to the above drawing	▶ Correct if necessary.
	- one of the faults explained in B has appeared for a limited time (ex. : low pressure pressostat, by cold ambient temperature at 1st milking)	▶ - check the functionning of the condensing unit	▶ Delete th alarm ("k" key). By cold ambient temperature, principally at 1st milking, the safety low pressure pressostat may cut out for short periods. This is normal. Delete the alarm ("k" key).
	- one of the compressor contactor has a faulty contact	▶ - check the auxiliary contact(s) (oxydation ?)	▶ Replace the contactor or the auxiliary contact.
B - the compressor contactor (1 or 2) does not close, the compressor(s) do(es) not work.	- a safety device, connected in series on the command line of the compressor 1 (or 2) contactor coil has tripped out.	▶ - check the state of these safety devices contacts : . low pressure pressostat	▶ check the functionning (refrigerant charging, leakage ?)
		. safety high pressure pressostat	▶ reset the press button. Clean the condenser. Improve the air flow around the condenser.
		. thermal safety of the fan motors	▶ check the functionning of the fan
		. magneto-thermal circuit breaker	▶ check the connections, reset and check the functionning
	- a compressor contactor coil is faulty	▶ - check the contactor coil	▶ replace the contactor
	- the WinM relay for cooling unit is faulty	▶ - With TEST duty, "a1" key, check if the output relay is not closing (no phase at connector 31)	▶ replace the WinM basis circuit board (ref. 6 000 668-10)
x AL y E70 z Pump and : A - the pump contactor closes, the pump(s) work(s) normally.	- faulty cleaning pump		
	- no continuous line between connector 14 (common/grey wire) and connector 12 (pump faults detector/red wire), but WinM commands the pump to run.	▶ The normal electrical connection is : 	
	- faulty electrical connection	▶ - check the connection according to the above drawing	▶ correct if neccesary
	- one of the faults explained in B has appeared during a limited period (ex. : pump motor thermal safety)	▶ - check if the pump turns correctly (see below)	▶ delete the alarm ("k" key). if necessary, restart the cleaning process ("c1" key)
	- faulty auxiliary contact of the pump contactor	▶ - check the pump contactor auxiliary contact (oxydation ?)	▶ replace the contactor or the auxiliary contact
B - the pump contactor does not close, the	- a safety device, connected in series on the pump contactor coil command line has tripped out.	▶ - chack the state of these safety devices contact : . magneto-thermal circuit breaker or thermal relay	▶ - check the setting of this safety device : .PX 3285 H4B / 3x400V) : 2A .PX 1C 285 H4B / 1 x 230 V : 5,5A
		. motor thermal safety (klixon)	▶ - check if the 3 phases are present - check if the pump turns freely (foreign matters in impeller, freezing) - check the state and functionning of the pump motor fan
	- the pump contator coil is faulty	▶ - check the contactor coil	▶ - replace the contactor
	- the WinM relay for the pump is faulty	▶ With TEST duty, "c1" key, check if the output relay is not closing (no phase at connector 32)	▶ Replace the WinM basic circuit board (ref. 6 000 668-10)

ATTENTION

k suppr. del.

TO DELETE ALARM

after correcting the fault, press briefly on "k" key.

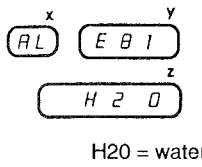
SYMPTOM	POSSIBLE ORIGIN	CHECKING	ACTION REMARKS
displayed alarms:			
x AL y E 7 1 z P u m P	- faulty cleaning pump - continuous line between connector 14 (common/grey wire) and connector 12 (pump faults detector/red wire), but WinM pump relay is normally open.		
and : A - the pump is not turning	- faulty electrical connection	▶ - check the connection according to the drawing of E70 : a link has been closed between connector 14 and connector 12.	▶ correct if necessary
	- faulty opening of the pump contactor auxiliary contact	▶ check the operation of the auxiliary contact	▶ replace the contactor or auxiliary contact
B - the pump is turning	- faulty electrical connections	▶ check the connections	▶ correct if necessary
	- faulty pump contactor	▶ check the operation of the contactor	▶ correct, replace the contactor if necessary
	The WinM relay for the pump is faulty (permanently closed)	▶ check if the output phase is permanently present at connector 32	▶ replace the WinM basic circuit board (ref. 6 000 668-10)
x AL y E 8 0 z H 2 0 H20 = water	- faulty cleaning water level During the cleaning process, phase 2, 3, 4, 5, 6 or 7, there is no continuous line between connectors 5 and 6 during 10 min. WinM waits for correct cleaning water level during 10 min. If after these 10 min., the level is not reached, the cleaning process switches to "pause" and alarm E80 is activated.	The normal electrical connection is : 1) with cleaning water level detector option:  2) without cleaning water level detector option :  *Connectors 5 and 6 should be linked together.*	
	- faulty electrical connection	▶ - check the connection according to the above drawing (1) or (2).	▶ correct if necessary. Link together connectors 5 and 6 if water level detector option is not present.
	- the water inlet tap(s) is(are) closed	▶ check the position of the water inlet taps when cleaning	▶ open the taps . Delete the alarm ("k" key) and continue the cleaning process ("c1" key)
	- the water inlet flow is not sufficient	▶ check the state of water inlet filters, the water flow	▶ clean the filters improve the water supply
	- a water solenoid valve does not work	▶ with TEST duty, check the operation of the solenoïd valves	▶ replace the faulty coil or valve
	- the water level contact stays open, even with enough water	▶ check the functionning of the water level contact, and if the floater is blocked by foreign matters or dirt	▶ - clean the level detector jar and the floater if necessary - replace the level detector ref. 7 163 061-39 if necessary
		▶ check the adjustment of the level detector	▶ adjust the position of the level detector jar (see doc. 6 100 500-xx)
	- a drain valve is leaking or a cleaning pipe connection is leaking	▶ with TEST duty, press on key "1" (cold water inlet), check the tightness of the drain valve and the pipe connections. Press on key "6" for opening the drain valve (one or 2 presses if there are 2 valves).	▶ correct if necessary

ATTENTION

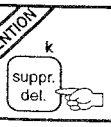
k suppr. del.

TO DELETE ALARM

after correcting the fault, press briefly on "k" key.

SYMPTOM	POSSIBLE ORIGIN	CHECKING	ACTION REMARKS
displayed alarms :			
 H20 = water	- faulty water level (water or milk in the level detector) Continuous line between connectors 5 and 6 out of cleaning time		
A - without cleaning water level detector option	wrong programmation	▶ - if there is no water level detector option, the parameter 1E (see "Extended parameters programmation", 1E) should be in position "OFF".	▶ correct the programme
B - with cleaning water level detector option and C - the alarm comes back after deleting (pressing on "k" key)	C1-the water level contact is blocked in closed position, and there is no water in the level jar.	▶ check the functionning of the water level contact, and if the floater is blocked by foreign matters or dirt.	▶ - clean the level detector jar, the ball and the floater if necessary (do not hesitate to disassemble the jar) - replace if necessary the level detector : ref. 7 163 061-39
	C2- there is water in the level jar (during standby -stop- or cooling duty).	▶ - check the functionning and the closing of the water inlet magnetic valves (with TEST duty, keys 1 to 5)	▶ - clean the faulty valve, replace if necessary
		▶ - check if the water inlet filters are clean and in proper state : a foreign matter might have passed through, and cause a leakage in a magnetic valve.	▶ - clean the water inlet filters, replace if necessary
		▶ - check the opening of the drain valve(s) with TEST duty, press on key 6 . (If there are 2 valves : 1st press = 1st valve 2nd press = 2nd valve)	▶ - replace the drain valve coil or the drain valve if necessary
	C3- there is milk in the level jar (during cooling duty)	▶ - check the complete closing of the tank milk outlet butterfly valve.	▶ - close the milk outlet valve, tighten or replace the elements if necessary - clean the level detector jar, the ball and the floater if necessary (do not hesitate to disassemble the jar) - inform the tank user on the necessity to close carefully the milk outlet valve
B - with cleaning water level detector option and D - the alarm does not come back after deleting (pressing on "k" key)	D1- there has been water in the level jar (during standby -stop- or cooling duty)	▶ - check the functionning and the closing of the water inlet magnetic valves (with TEST duty, keys 1 to 5)	▶ - clean the faulty valve, replace if necessary
		▶ - check if the water inlet filters are clean and in proper state : a foreign matter might have passed through, and cause a leakage in a magnetic valve.	▶ - clean the water inlet filters, replace if necessary
		▶ - check the opening of the drain valve(s) with TEST duty, press on key 6 . (If there are 2 valves : 1st press = 1st valve 2nd press = 2nd valve)	▶ - replace the drain valve coil or the drain valve if necessary
	D2- there has been milk in the level jar (during cooling duty)	▶ - check if there are traces of milk in the level jar	▶ - clean the level detector jar, the ball and the floater if necessary (do not hesitate to disassemble the jar) - tighten or replace the elements of the milk outlet valve if necessary - inform the tank user on the necessity to close carefully the milk outlet valve

ATTENTION



TO DELETE ALARM

after correcting the fault, press briefly on "k" key.

SYMPTOM	POSSIBLE ORIGIN	CHECKING	ACTION REMARKS

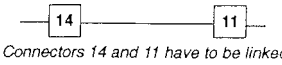
displayed alarms :

x AL y E 9 z r E 5

- faulty in-line heater / thermostat during cleaning phases 3 (preclean 2) and 4 (clean / deterg.) after 20 min.

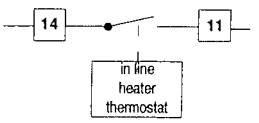
The normal electrical connection is :

1) without in-line heater option (general case) :



Connectors 14 and 11 have to be linked.

2) with in-line heater option :



A - without or with in-line heater option → faulty electrical connection ▶ - check the connections according to the above drawing, particularly (general case) the link between connectors 14 and 11. ▶ - correct if necessary

B - with in-line heater option →

B1- faulty in line heater resistance ▶ - check the functionning of the heating resistance ▶ - replace the faulty elements if necessary

B2- faulty functionning of the in line heater thermostat ▶ - check the functionning of the thermostat ▶ - replace the faulty elements if necessary

▶ - check the way of the thermostat functionning : ▶ - correct if necessary
. open line if heating is requested
. closed line if the requested temperature is reached

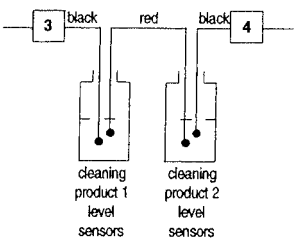
x AL y E 1 0 z P r o d

- faulty level in one of the cleaning product cans.

ATTENTION **THIS ALARM** is automatically deleted, no need to press on "k" key

A - without "dosing pumps" option → wrong programmation ▶ - check the cleaning parameters: parameter 3c (do5) should be 0. ▶ - correct if necessary.

B - with "dosing pumps" option → ▶ The normal electrical connection is : ▶ This alarm is deleted automatically, without pressing on "k" key, as soon as the fault is no longer detected.



B1- there is no product in one of the cans. ▶ - check the product levels ▶ - refill / replace the cleaning product can(s)
⚠Attention : do not mix up the cans acid (red mark) and basic detergent.

B2- faulty electrical connection ▶ - check the line continuity according to the above drawing (if necessary; immerge the sensor into water, or link the sensors together). ▶ - correct if necessary.
- check the electrical wires and the connections
▶ - check if the sensors are not clogged. ▶ - clean, rinse.

B3- WinM functionning fault ▶ - link the connectors 3 and 4 together, and check if the alarm stays. ▶ - replace the WinM basic circuit board (ref. 6 000 668-10)

ATTENTION k Suppr. del. **TO DELETE ALARM** after correcting the fault, press briefly on "k" key.

1.97

SYMPTOM	POSSIBLE ORIGIN	CHECKING	ACTION REMARKS

displayed alarms :

x y
AL E 1 1
z
3 9. 9
displays the max. temperature registered during cleaning

The maximum temperature registered during cleaning is too low.

- the temperature of the cleaning was too low
  - ▶ - check if this too low tempertaure was just an "accident" by consulting (key "?" C>>) the level of the 5 last cleaning temperatures
    - ▶ - The electricity supply might have been cut out during the water heating time.
    - or if it is "frequent" ▶ ▶ - check the hot water available quantity, the setting of the thermostat (min. 70°C)
      - if the water heater is far from the milk cooler, increase the parameter 1C (P c E n) between 50% and 100% (ex. : 90%)
      - if there is not enough time for water heating (after the starting of cleaning), increase the parameter 1c (d E L).
  - ▶ - eventually check with help of WinLink / WinGraph
- the programmed value of parameter 6C is too high
  - ▶ - check, the cleaning parameters programmation, the value of parameter 6C : normally 40°C (the alarm is activated each time that the cleaning temperature will not reach this value).
    - ▶ - correct if necessary
- the last cleaning was not a complete cleaning process
  - ▶ - check in consultation mode (key "?" c>>) the type of the last cleaning.
    The complete cleaning process is "Cp".
    - ▶ - it is possible to lock the key c>> in order to avoid the accessibility to other cleaning types.
      (extended parameters : parameter 2E "c>>" --> OFF)

x y
AL E 1 2
z
- - A 1

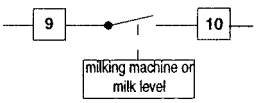
A - no control device foreseen

B -a control device is linked to the WinM (link to the milking machine, or a milk level detector in the tank).

- the cooling unit should be switched on (press on "a1" key)
  - ▶ - the cooling unit was not switched on, and there is an electrical link between connectors 9 and 10.

ATTENTION
THIS ALARM
is automatically deleted, no need to press on "k" key

- wrong electrical connection
  - ▶ - the connectors 9 and 10 should not be linked together.
    - ▶ - correct if necessary
  - ▶ The normal connection is as shown below, with a link to an auxiliary contact of the milking machine contactor, or a milk level detector in the tank.



B1- there is milk in the tank, and the cooling unit has not been started.
- ▶ - check
  - ▶ - press on "a1" key in order to start the cooling unit

B2- faulty electrical connection
- ▶ - check if the connections correspond to the above drawing.
  - ▶ - correct if necessary

B3- faulty functionning of the milking machine contactor or of the milk level detector.
- ▶ - check the functionning.
  Note : for the milking machine contactor, the contact between connectors 9 and 10 should not be closed during the milking machine cleaning operations, for instance before milking.
  - ▶ - correct if necessary

ATTENTION
TO DELETE ALARM
k
suppr. del.
after correcting the fault, press briefly on "k" key.

SYMPTOM	POSSIBLE ORIGIN	CHECKING	ACTION REMARKS

displayed alarms :

x y
AL E 1 3
z
O u t 1

The milk tank outlet valve has been left open when starting the cooling process or has been left closed when starting the cleaning process.

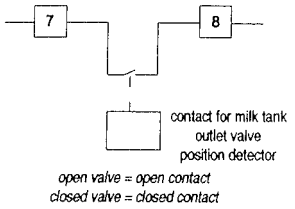
ATTENTION **THIS ALARM** is automatically deleted, no need to press on "k" key

A - no "position detector option"

- wrong programmation ▶ - check in the extended parameters program : the parameter 6d "O u t" should be "OFF" (without option). Connectors 7 and 8 should not be linked together. ▶ - correct if the parameter 6d is "ON".

B -with "position detector option" on the milk tank outlet valve

▶ The normal connection is :



B1- the milk tank outlet valve is open when starting the cooling process ▶ - check the position of the outlet valve ▶ - close the outlet valve before starting the cooling process (press on "a1" key)

B2- the milk tank outlet valve is closed when starting the cleaning process ▶ - check the position of the outlet valve ▶ - open the outlet valve before starting the cleaning process (press on "c1" key)

B3- faulty electrical connection ▶ - check the connections according to the above drawing ▶ - correct if necessary

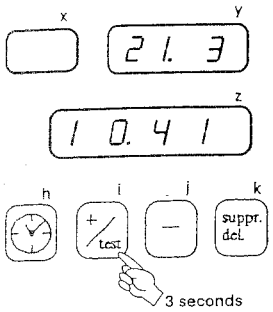
B4- faulty functionning of the position detector ▶ - check the functionning of the position detector ▶ - correct if necessary

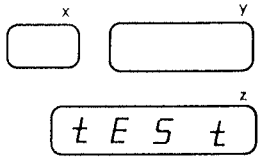
B5- faulty functionning of the WinM ▶ - check by linking the connectors 7 and 8 ▶ - if the alarm stays, replace the WinM basic circuit board (ref. 6 000 668-10)

Test mode

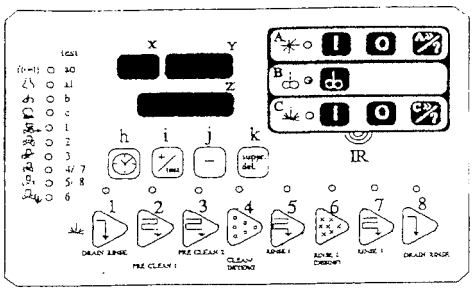
GENERAL INSTRUCTIONS

To enter test mode :





Display of zones x, y and z identical during all the test period.

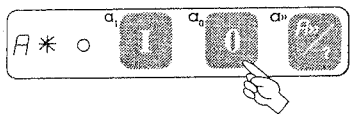


led off led on led flashing

NOTE :
If no operation is made on the keyboard within one minute, the display return to the normal standby mode.

Test cooling, agitation, cleaning:

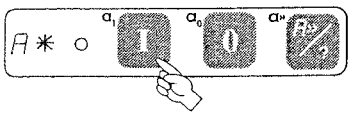
• Test of alarms :



→ a_0

relay for alarm closed

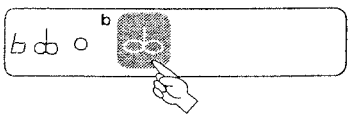
• Test of condensing unit :



→ a_1

relay for condensing unit closed

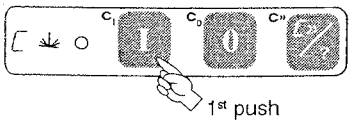
• Test of agitator :



→ b

relay for agitator closed

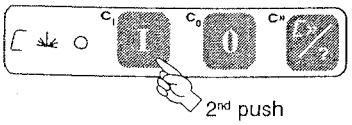
• Test of cleaning pump :



→ c_1

relay for pump closed

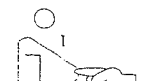
• Test of heater :



→ c_1

relay for heater closed

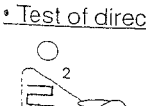
• Test of direct to drain rinse valve :



→ 1

relay for direct rinse valve closed

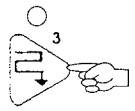
• Test of direct hot water valve :



→ 2

relay for direct hot water valve closed

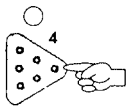
• Test of direct cold water valve :



→ 3

relay for direct cold water valve closed

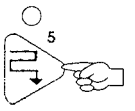
• Test of hot water valve (jar) :



→ 4/7

relay for hot water valve (jar) closed

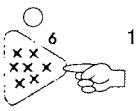
• Test of cold water (jar) :



→ 5/8

relay for cold water valve (jar) closed

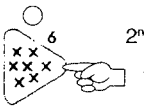
• Test of drain valve n°1 :



→ 6

relay for drain valve n°1 closed

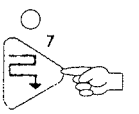
• Test of drain valve n°2 :



→ 6

relay for drain valve n°2 closed

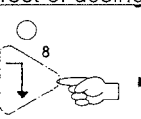
• Test of dosing pump 1 :



→ 4/7

relay for dosing pump 1 closed

• Test of dosing pump 2 :



→ 5/8

relay for dosing pump 2 closed

(be careful : risk of mixing chemical agents)

When testing the water valves, the drain valve will be activated to evacuate the water entered.

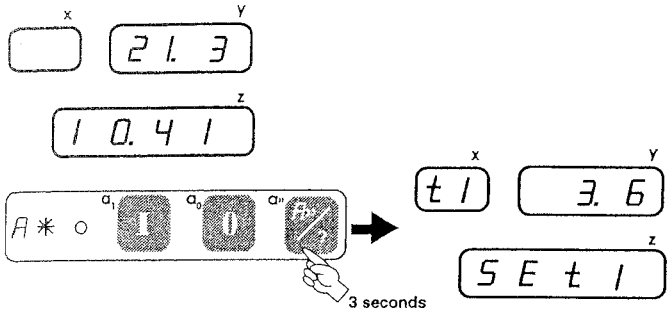
Parameters control mode

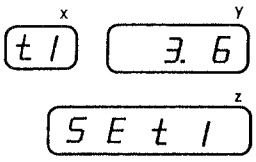
GENERAL INSTRUCTIONS

Control mode is available during any running duty.

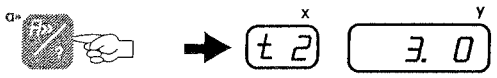
NOTE : If no operation is made on the keyboard within 1 min., the display returns to the normal standby mode.

Control mode for cooling :

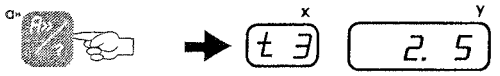




first thermostat setting point (1A)

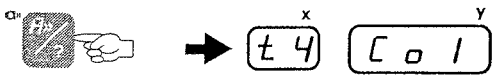


second thermostat setting point (2A)



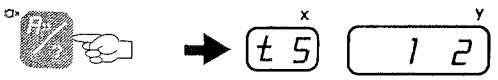
mini. temperatures (y) stored during the 5 last cycles (numbered from 1 to 5(z))

then automatic scrolling of temperatures by cycle every 3 sec.

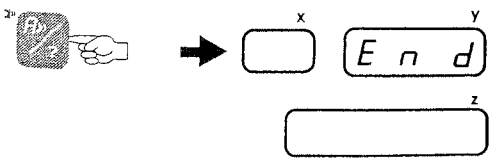


running time of the cooling unit (z) stored during the 5 last cycles (y)

then automatic scrolling of times every 3 sec.

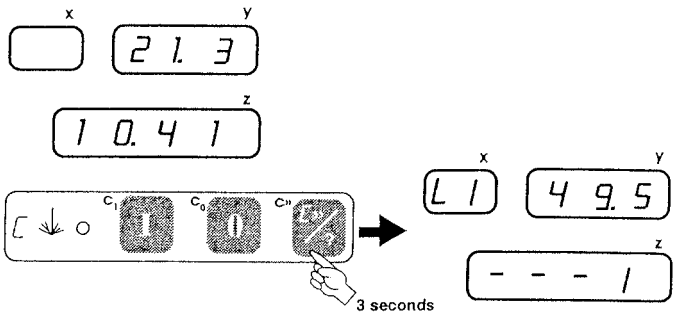


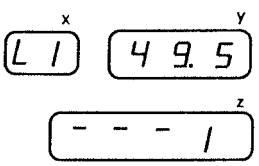
total running time of the cooling unit y : thousands of hours, z : hours



return to standby mode

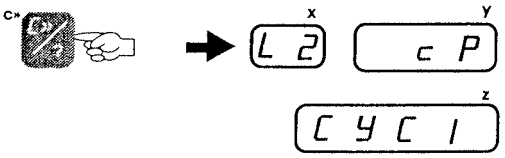
Control mode for cleaning :





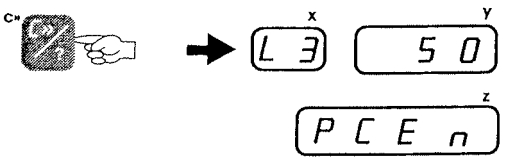
maximum cleaning temperatures (y) stored during the 5 last cycles (z)

then automatic scrolling of temperatures by cycle every 3 sec.

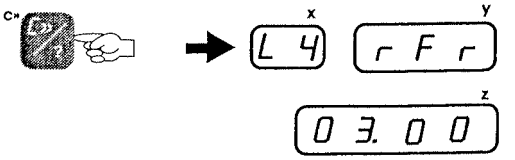


type of program selected (y) during the 5 last cycles (z)

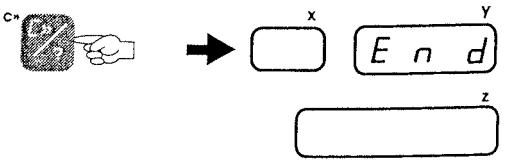
then automatic scrolling of types of program by cycle every 3 sec.



hot water percentage (y) for PreClean 1 (1C)



water filling time for the complete cleaning cycle (z) (2C)

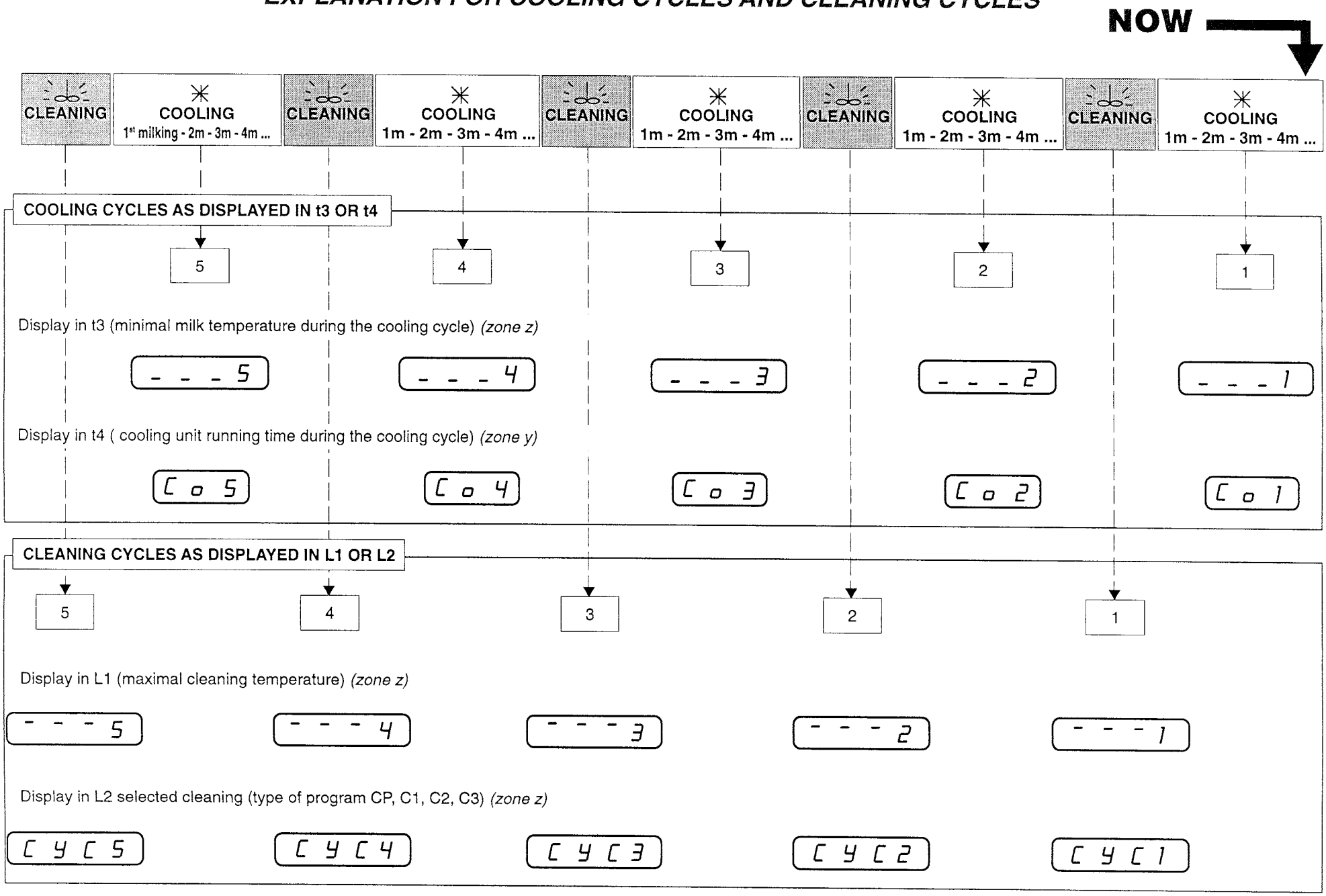


return to standby mode

See "Explanation of cooling cycles and cleaning cycles" on following page (31).

PARAMETERS CONTROL MODE

EXPLANATION FOR COOLING CYCLES AND CLEANING CYCLES



Programming

LIST OF PROGRAMMING PARAMETERS

Cooling Parameters (1/1)

Display			Values			Parameter name	specific for each milk cooler*
x	y	z	factory basic	min	max		
				or possible values			
1A	« value »	SEt1	3.6°C	lower limit	higher limit	first thermostat setting point	
2A	« value »	SEt2	3.0°C	lower limit	higher limit	second thermostat setting point	
3A	« value »	SEt	2tA	1F, 2F, 2Ft, 2tA		thermostat setting point configuration	
4A	2tA	« value » in hours	24 h	1 h	72 h	A1 -> A2 switching time delay in mode 2tA	
5A	At	« value » in min.sec	15 min	0 min	60 min	time delay before starting	
6A	ALA	« value » in hours. min	3h20min	0h30min	4h00min and « off »	max cooling time before alarm E3	increase this value if normal cooling time is longer
	End					End of this programme	

LIST OF PROGRAMMING PARAMETERS

Agitation parameters (1/1)

Display			Values			Parameter name	specific for each milk cooler*
x	y	z	factory basic	min	max		
				or possible values			
1b	On	« value » in min.sec	2min	1min	5min	cyclic agitation running time	
2b	Off	« value » in min.sec	13min	10min	60min	cyclic agitation pause time	
3b	« value »	Spd	1	1	2	number of agitation speeds	
4b	« value »	°Spd	14°C	10°C	30°C	full speed (100%) agitation switching temperature	
5b	« value »	COLL	0	0, 1, 2, or 3		milk collecting cycle number of weeks	0 for normal functionning
6b	« value »		--	1	3	select the present week number	if 5b ≠0
7b	« value »		--	1	7	select the present day number	if 5b ≠0
8b	week.day	« value » in hours. min	--	00h00min	23h59min	programmation of the automatic switch to forced agitation time	if 5b ≠0
	End					End of this programme	

LIST OF PROGRAMMING PARAMETERS

Cleaning parameters (1/2)

**: these parameters must be programmed individually for each WinMaster plant when installing or replacing the WinMaster control box.*

Display			Values			Parameter name	specific for each milk cooler*
x	y	z	factory basic	min	max		
				or possible values			
1C	« value »	PCEn	50%	50%	100%	% of hot water for pre-clean 1 (phase 2)	according to water heater distance: near: **50%** 3 to 5m: **70%** 5 to 8m:**90%** far:**100%**
2C	rFr	« value » in min.sec	3min	2min	10min	reference time: cleaning cycle (phase4) water filling time	according to the tank rated volume: 1100 to 3200: **2min00** 3500 to 4850: **2min30** 5000 to 6000: **3min00** 7100 to 8100: **3min30** 10000 to 12500:**4min** 14000 to 16000: **5min**
3C	doS	« value »	0	0, 1, 2 or 3		dosing pumps functionning mode	• without dosing pumps: **0** • with dosing pumps: **1, 2, or 3** (see manual)
4C	dp1	« value » in min.sec	1min30sec	0min00sec	rFr time (-10sec)	dosing pump N°1 running time	according to the tank nominal volume & cleaning product dilution ratio **(here: 1%):** 1100 to 3200: **1min00** 3500 to 4850: **1min10** 5000 to 6000: **1min25** 7100 to 8100: **1min35** 10000 to 12500:**1min50** 14000 to 16000: **2min15**
5C	dp2	« value » in min.sec	1min30sec	0min00sec	rFr time (-10sec)	dosing pump N°2 running time	**as above in 4C**

LIST OF PROGRAMMING PARAMETERS

Cleaning parameters (2/2)

**: these parameters must be programmed individually for each WinMaster plant when installing or replacing the WinMaster control box.*

Display			Values			Parameter name	specific for each milk cooler*
x	y	z	factory basic	min or possible values	max		
6C	« value »	°ALA	40°C	20°C	60°C	minimal cleaning temperature for alarm	
7C	drA	« value » in %	100%	100%	200%	drain valve opening time (in % of the normal time)	• tanks up to 10000 litres: keep **100%** • tanks from 12500 litres: **150%**
8C	FLt	« value » in min.sec	according to rFr (parameter 2C)	phases 2,5,6,7: 1min30s phase 3: 2min	phases 2,5,6,7: 7min30s phase 3: 10min	cleaning water filling time per phase	
9C	CLt	« value » in min.sec	phase 2: 2min phase 3: 2min phase 4: 10min phase 5: 1min30s phases6,7: 45s	phase 2: 1min15s phase 3: 1min phase 4: 4min45s phase 5: 45s phases 6 ,7: 22s	phase 2: 4min phase 3: 4min phase 4: 19min phase 5: 3min phases 6 ,7: 1min30s	cleaning time (= pump running time) per phase	
0c	« value »	SELE	On	Off or On		cleaning program modification (phases selection)	
1c	dEL	« value » in hours. min	0h00min	0h00min	6 hours *(version 2.11)*	pause delay between phases 2 and 3	
	End					End of this prog.	

LIST OF PROGRAMMING PARAMETERS

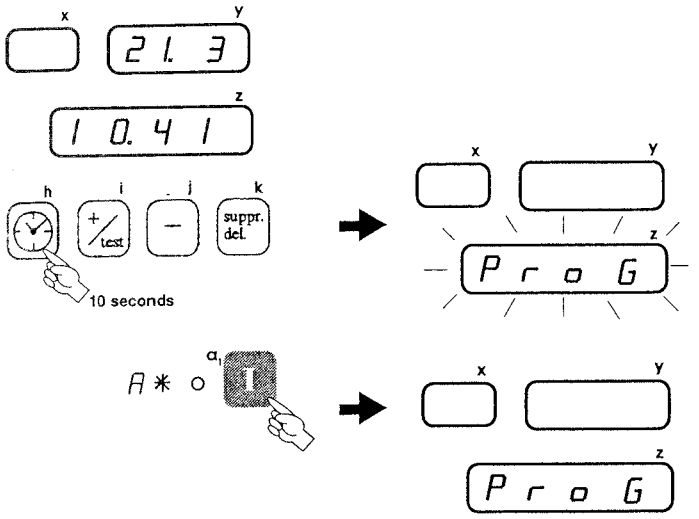
Extended parameters (1/1)

**: these parameters must be programmed individually for each WinMaster plant when installing or replacing the WinMaster control box.*

Display			Values			Parameter name	specific for each milk cooler*
x	y	z	factory basic	min	max		
				or possible values			
1d	« value »	diFF	0.3°C	0.1°C	2.0°C	½ thermostat differential	
2d	« value »		°C	°C or °F		Temperature unit	
3d	« value »	Lo	2.0°C	-9.9°C	Higher limit	Lower limit for the thermostat setting point	
4d	« value »	HIGH	25°C	Lower limit	37°C	Higher limit for the thermostat setting point	
5d	« value »	CALI	-0.3°C	-2.0°C	+2.0°C	sensor calibration setting	
6d	« value »	OUtL	off	On or off		tank outlet valve positon detector option	
7d	int	« value » in min.sec	5min	1min	60min	interval between datas inputs	
8d	cd1	4 numerals « value »	0000	0000	9999	4 **first** numerals of tank identification code	Enter the 4 **first** numerals of the tank serial number
9d	cd2	4 numerals « value »	0000	0000	9999	4 **last** numerals of tank identification code	Enter the 4 **last** numerals of the tank serial number
0d	drA	« value »	nC	nC or nO		drain solenoid valve type nC= normally closed nO= normally open	
1E	« value »	H2o	On	On or off		cleanig water detector option	
2E	C>>	« value »	On	On or off		C>> key locking option	
	End					End of this programme.	

COOLING PARAMETERS

Access to the functions for programmation :

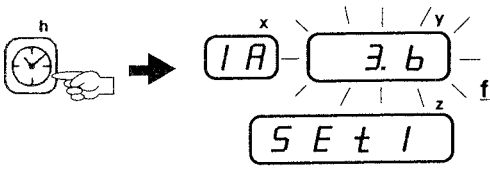


display flashing

display on

NOTE :
If no operation is made on the keyboard within one minute, the display returns to the normal standby mode.

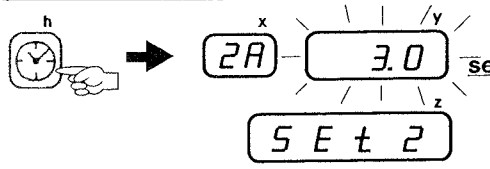
Programmation of the cooling parameters:



first thermostat setting point

i → increase the temperature (+0.1°C)

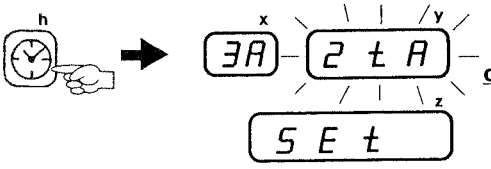
j → decrease the temperature (-0.1°C)



second thermostat setting point

i → increase the temperature (+0.1°C)

j → decrease the temperature (-0.1°C)

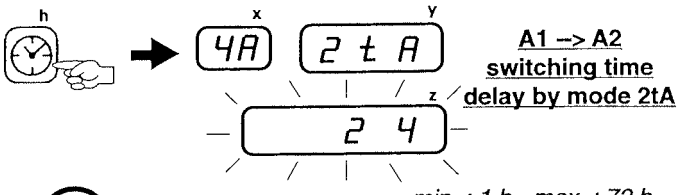


configuration of the thermostat setting point

1F = 1 setting point : A1
2F = 2 permanent setting points : A1 and A2
2Ft = 2 setting points : one permanent A1, another limited in time A2 (30 min.)
2tA = 2 setting points with automatic switching : A1 during the programmed time in 4A, then A2

j → scrolling of the codes : 2Ft, 2F, 1F

i → reverse scrolling of the codes

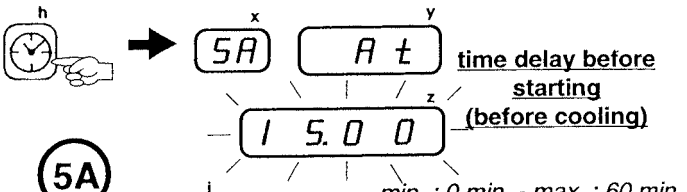


A1 –> A2 switching time delay by mode 2tA

min. : 1 h - max. : 72 h

i → increase the time (+1 hour)

j → decrease the time (-1 hour)

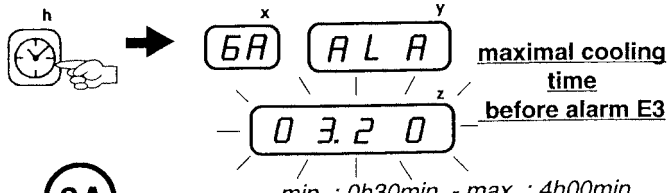


time delay before starting (before cooling)

min. : 0 min. - max. : 60 min.

i → increase the time (+5 min.)

j → decrease the time (-5 min.)

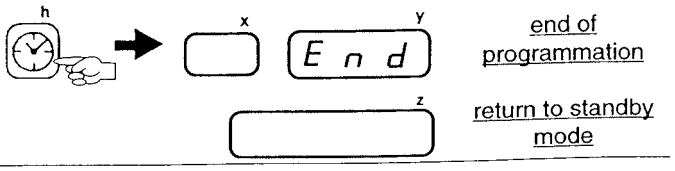


maximal cooling time before alarm E3

min. : 0h30min. - max. : 4h00min. and position OFF (no alarm activated)

i → increase the time (+10 min.)

j → decrease the time (-10 min.)

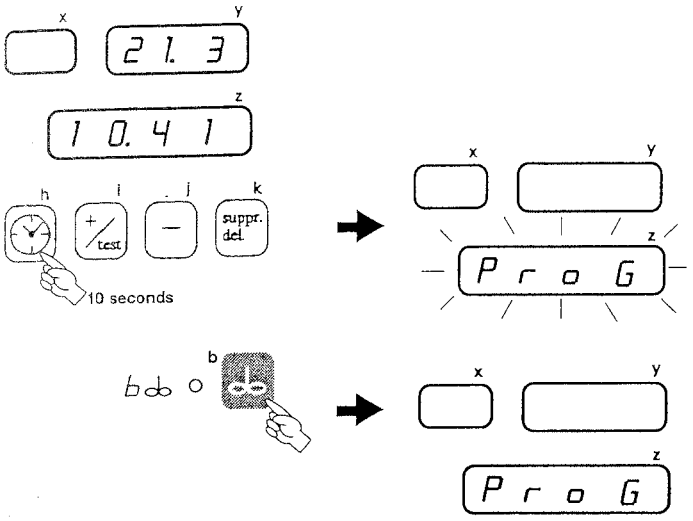


end of programmation

return to standby mode

AGITATION PARAMETERS

How to enter in programmation mode :

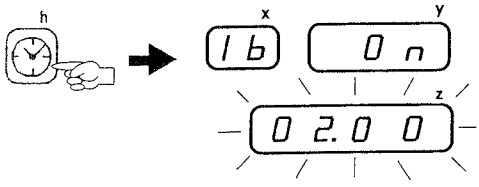


flashing display

display on

NOTE :
If no operation is made on the keyboard within one minute, the display returns to the normal standby mode.

Programmation of the agitation parameters :

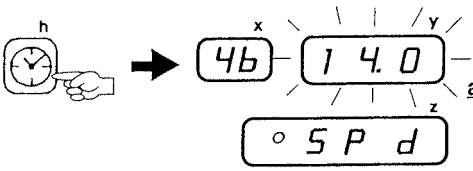


cyclic agitation running time

1b

i — increase the time (step 30 seconds)

j — decrease the time (step 30 seconds)



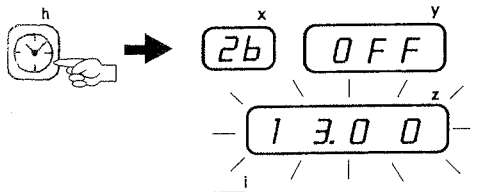
full speed (100%) agitation switching temperature

(min. : 10°C - max. : 30°C)

4b

i — increase the temperature (step 0.1°C)

j — decrease the temperature (step 0.1°C)

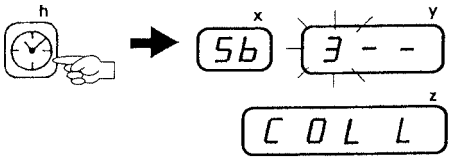


cyclic agitation pause time

2b

i — increase the time (step 1 min.)

j — decrease the time (step1 min.)



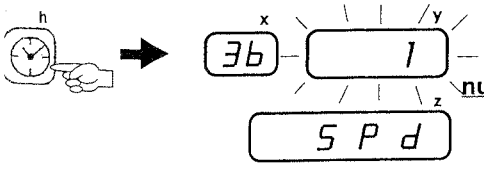
milk collecting cycle number of weeks

0 = normal functionning mode ------> End
1 = 1 week cycle
2 = 2 weeks cycle
3 = 3 weeks cycle

5b

i — increase the number

j — decrease the number



number of agitation speeds

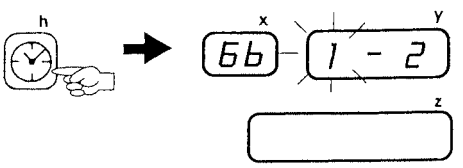
3b

i — 1 to 2

j — 2 to 1

1 = 1 speed 100%
2 = 2 speeds :
- 50% when the milk temperature is higher than the temperature entered in 4b (ex. > 14°C) and
- 100% when temperature is lower

low speed (50%) : only during cooling duty



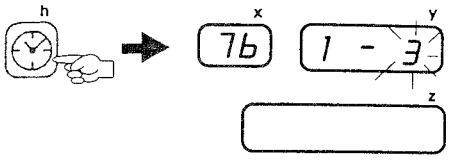
select the present week number

6b

min. : week n°1 - max. : week n°3

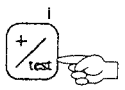
i — increase the number

j — decrease the number



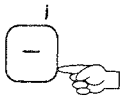
select the present day number

7b



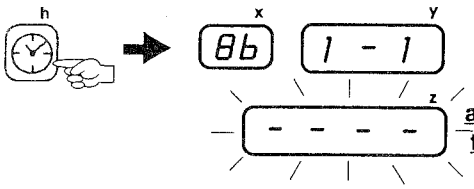
min. : day n°1 - max. : day n°7

→ increase the number



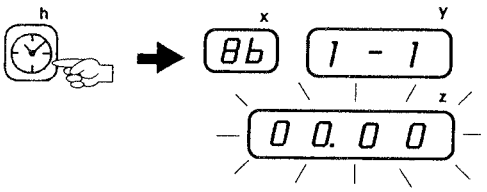
→ decrease the number

example : 1st week - tuesday : select 1 - 2

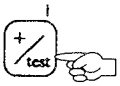


select the week, day and time for automatic switches to forced agitation (b1 or b2)

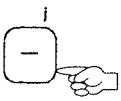
8b



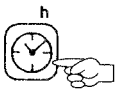
→ cancel (this day is not activated for forced agitation)



→ select this day for forced agitation, and increases the switching time (by 10 min. steps)

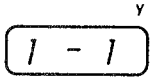


→ select this day for forced agitation and decreases the switching time (by 10 min. steps)

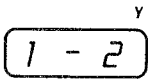


→ enter the programmation and goes to the next day

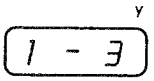
meaning of the display :



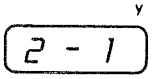
= week 1 - day 1



= week 1 - day 2

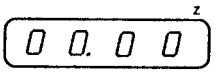


= week 1 - day 3
etc until week 1 - day 7

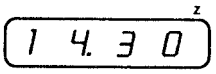


= week 2 - day 1
etc until week 3 - day 7

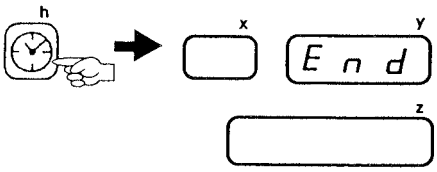
= the day displayed in y zone has not been selected



= the day displayed in y zone has been selected. Switching time programmed at 00h00min. (use keys i and j in order to select another switching time)



= the day displayed in y zone has been selected. The switching to force agitation will occur at 14h30min.



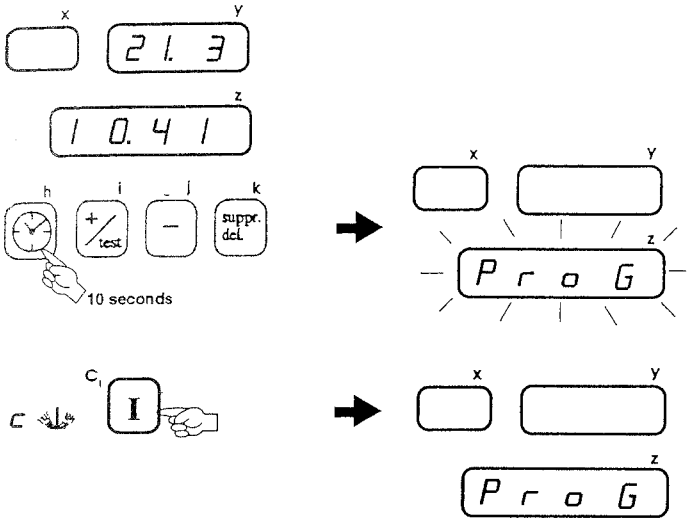
end of programmation

return to standby mode

Note :
You should program parameters 5b to 8b only if you wish to switch to forced agitation before milking (automatic duty switch from A1 to b1 or from A2 to b2).

CLEANING

How to enter in programmation mode :

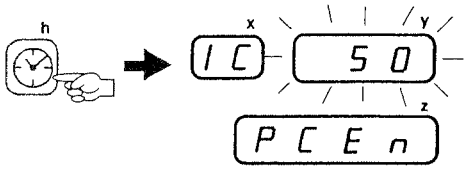


display flashing

display on

NOTE :
If no operation is made on the keyboard within one minute, the display returns to the normal standby mode.

Programmation for cleaning :

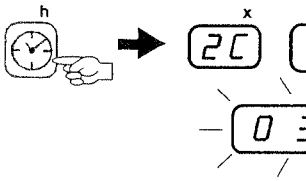


hot water percentage for pre-clean 1 (phase 2)

1C

i → increase the percentage (step 1%)

j → decrease the percentage

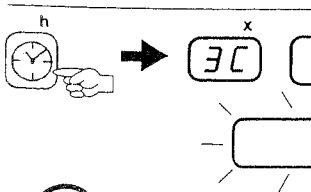


reference water filling time for the complete cleaning cycle (base : phase 4)

2C

i → increase the time (step 1 sec.) of the phase 4 and the other phases 2,3,5,6 and 7 proportionally

j → decrease the time (step 1 sec.) of the phase 4 and the other phases 2,3,5,6 and 7 proportionally

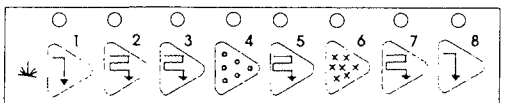


dosing pumps functioning mode

P1 : dosing pump 1

P2 : dosing pump 2

0 = no dosing pump

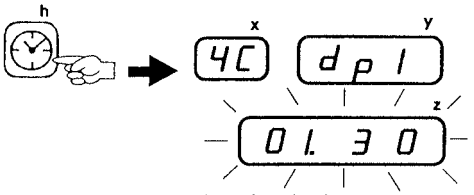


code								
1 =				P1		P2		
2 =	1st cleaning			P1				
	2nd cleaning			P2				
3 =	1st cleaning			P1				
	2nd cleaning			P1				
	3rd cleaning			P2				

i → increase the code

j → decrease the code

→ • if code 1, 2 or 3 in 3C :



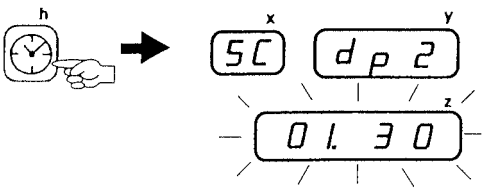
running time for dosing pump 1

4C

i → increase the time (+1 sec.)

j → decrease the time (-1 sec.)

• if code 1, 2 or 3 in 3C :

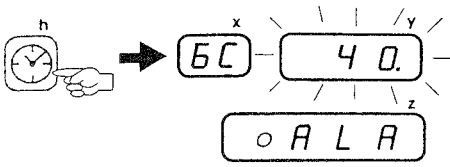


running time for dosing pump 2

5C

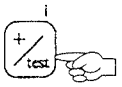
i → increase the time (+1 sec.)

j → decrease the time (-1 sec.)

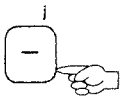


minimal cleaning temperature for E11 alarm

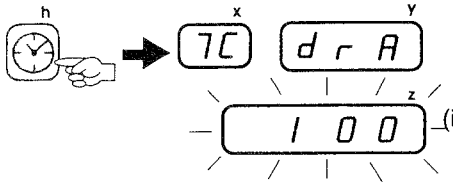
6C



increase the temperature (+0.1°C/0.2°F)



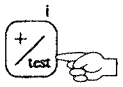
decrease the temperature (-0.1°C/0.2°F)



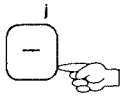
drain valve opening time

(in % of the normal time)
ex. : 100% = 2 min. opening

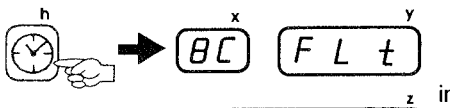
7C



increase the time (+25%)



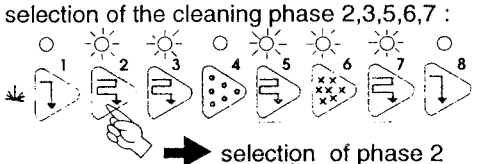
decrease the time (-25%)



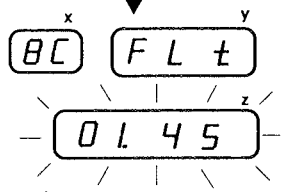
cleaning water filling time per phase

individual modification of the standard time calculated from the reference time (rFr = 2C)

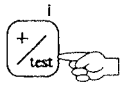
selection of the cleaning phase 2,3,5,6,7 :



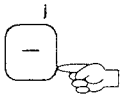
selection of phase 2



8C

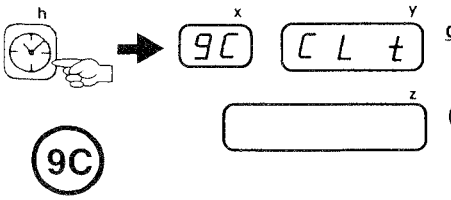


increase the filling time of phase 2



decrease the filling time of phase 2

Same procedure for the other phases 3, 5, 6, 7.
The filling time of phase 4 is the reference time entered in 2C.

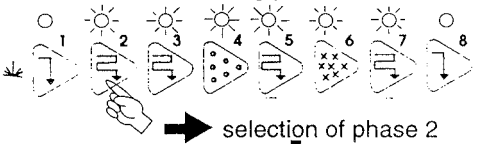


cleaning time (=pump running time) per phase

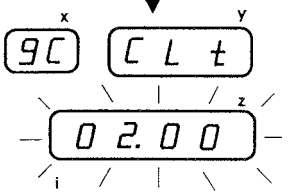
(individual modification of the factory basic settings)

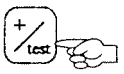
9C

selection of the cleaning phase 2,3,4,5,6,7 :

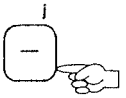


selection of phase 2



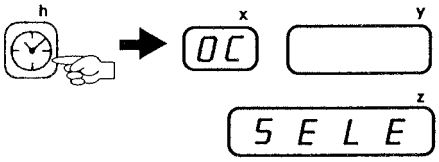


increase the cleaning time of phase 2



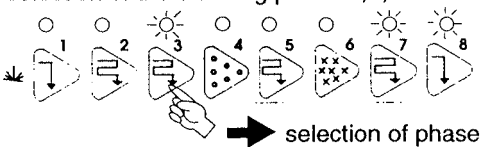
decrease the cleaning time of phase 2

Same procedure for the other phases 3,4,5,6,7



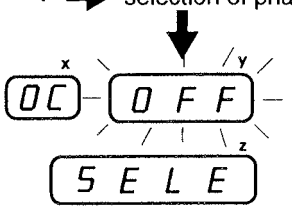
modification of the cleaning program (phases selection)

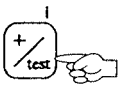
selection of the cleaning phase 3,7,8 :



selection of phase 3

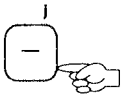
0C





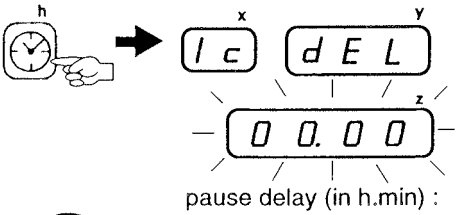
to activate OFF --> ON

OFF : this phase is canceled
ON : this phase is activated



to cancel ON --> OFF

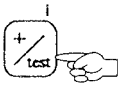
Same procedure for the other phases.



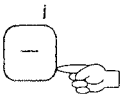
pause delay between phase 2 (pre-clean 1) and phase 3 (pre-clean 2)

pause delay (in h.min) :

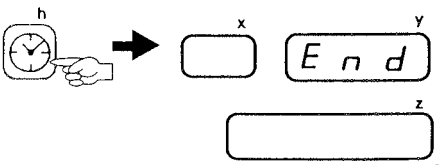
1c



increase the time (+10 min.)



decrease the time (-10 min.)

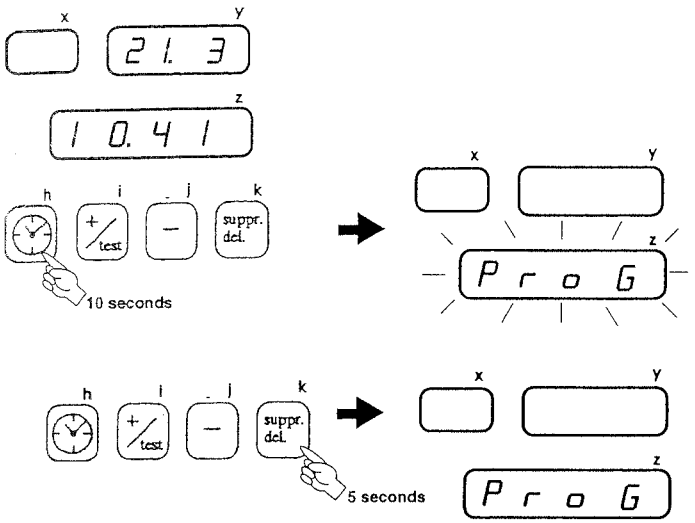


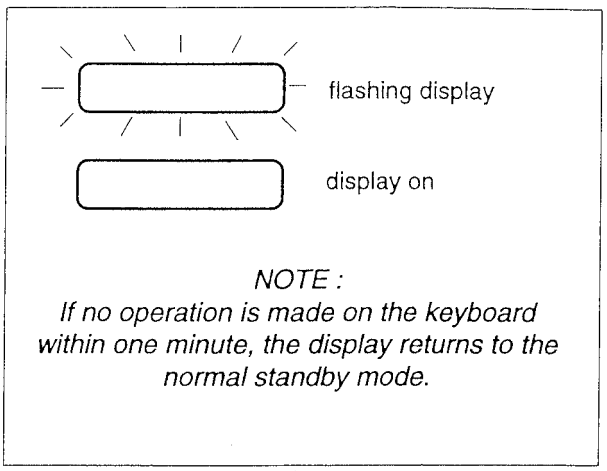
end of programmation

return to standby mode

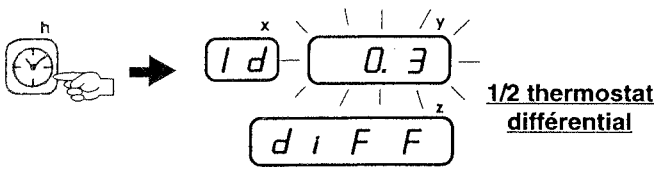
EXTENDED PARAMETERS

How to enter in programmation mode :





Programming for extended parameters :

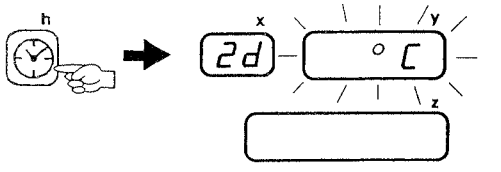


1/2 thermostat différential

1d

i — increase the value (+0.1°C/0.2°F)

j — decrease the value (-0.1°C/0.2°F)

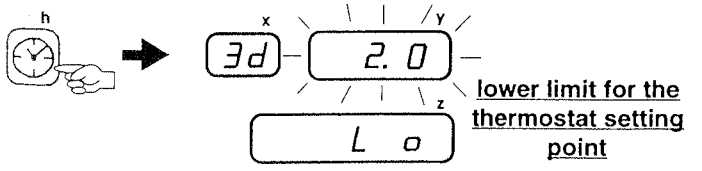


temperature unit (°C or °F)

2d

i — °C to °F

j — °F to °C

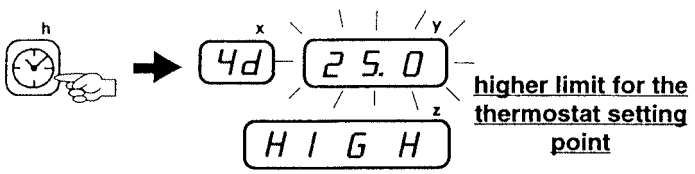


lower limit for the thermostat setting point

3d

i — increase the temperature (+0.1°C/0.2°F)

j — decrease the temperature (-0.1°C/0.2°F)

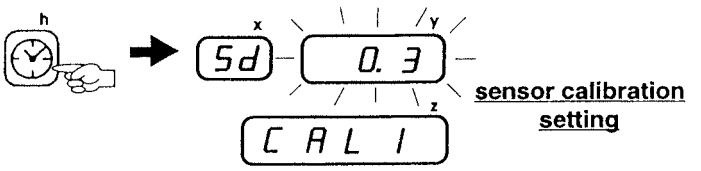


higher limit for the thermostat setting point

4d

i — increase the temperature (+0.1°C/0.2°F)

j — decrease the temperature (-0.1°C/0.2°F)

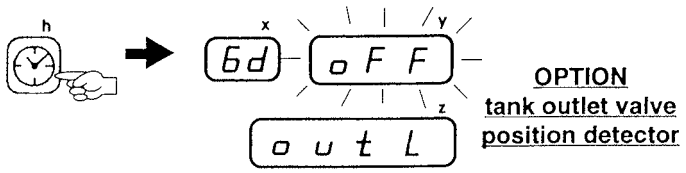


sensor calibration setting

5d

i — increase the temperature (+0.1°C/0.2°F)

j — decrease the temperature (-0.1°C/0.2°F)



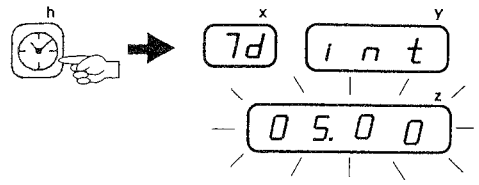
OPTION tank outlet valve position detector

6d

ON : option activated
OFF : option not activated

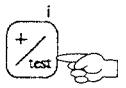
i — OFF to ON

j — ON to OFF

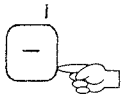


intervals between datas inputs

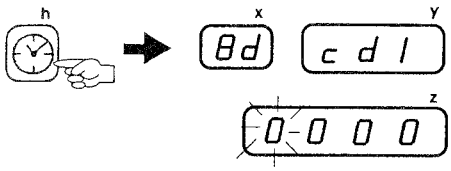
7d



increase the time (+1 min.)

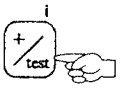


decrease the time (-1 min.)

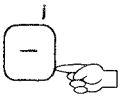


1st part of tank identification code
(4 first digits)

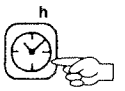
8d



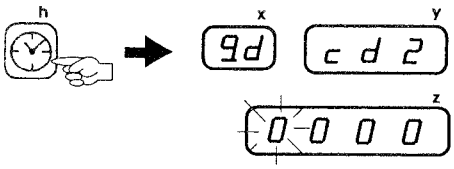
increase the digit



decrease the digit

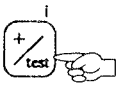


next digit

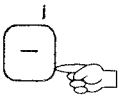


2nd part of tank identification code
(4 last digits)

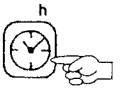
9d



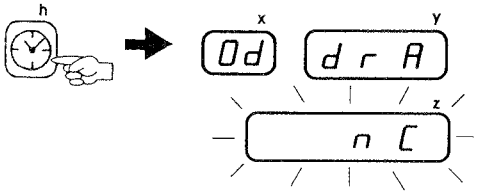
increase the digit



decrease the digit



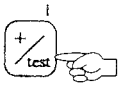
next digit



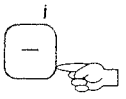
drain solenoïd valve type

0d

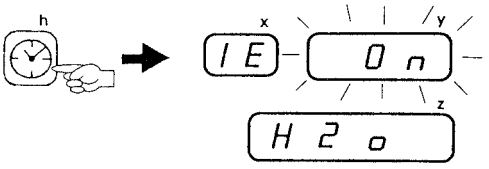
nO : normally opened
nC : normally closed



nC to nO



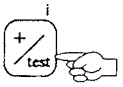
nO to nC



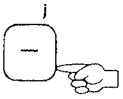
cleaning water level detector option

1E

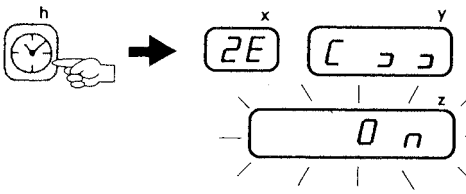
ON : option activated
OFF : option not activated



OFF to ON



ON to OFF

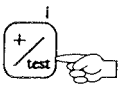


C>> key locking option

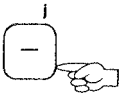
- locking of the cleaning programme choice : only cP (or C1) is valid
- locking of the possibility to step manually to the next cleaning phase

2E

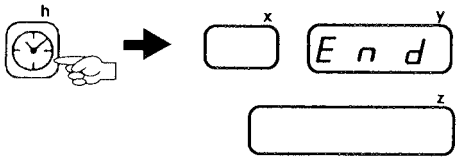
ON : C>> key free access
OFF : C>> key locked



OFF to ON



ON to OFF



end of the extended programmation

return to standby mode

Wedholms