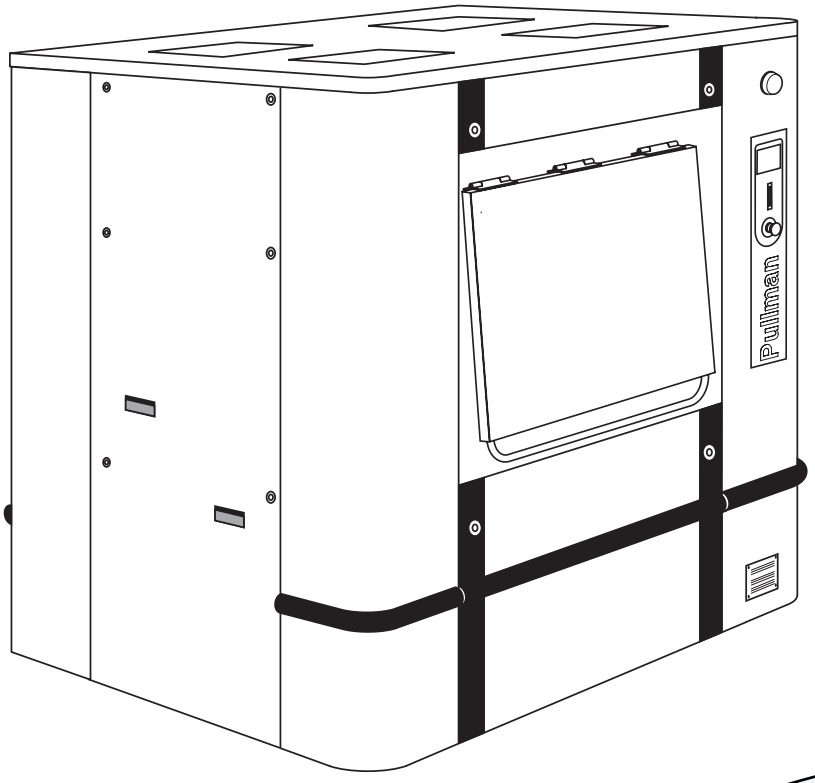
Operating handbook

Washer-extractors

WPB4700H – WPB4900H – WPB41100H

Clean Room



Thinking of you

Electrolux

01201150/GB
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0. Table of contents

Preliminary instructions

Before any use, it is compulsory to read the instruction handbook.

Users must have learnt how the machine operates.

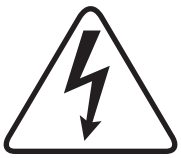
The identification plate is placed on the loading side of the machine.

In order to prevent any risk of fire or explosion, flammable products should never be used to clean the machine.

Any repair or maintenance intervention should be carried out by qualified personnel only.

Detergents used in laundry are particularly agressive. No stainless steel is able to resist their corrosive actions. Detergent dispenser must consequently be considered as wearing parts likely to be replaced.

Explanation of graphic symbols



A flash of lightning with an arrow at its end displayed inside an equilateral triangle, warns the user about the presence of uninsulated "dangerous current" sufficient in intensity to cause electrocution.

An exclamation mark inside an equilateral triangle offers the user important advice about usage, servicing and hazardous conditions.

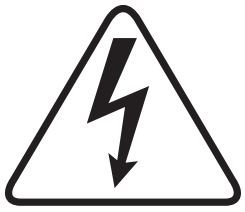
This symbol warns the user that there are mechanisms inside the machine which can be dangerous. The protective housing must be in place during use.

This symbol warns the user of the presence of high temperatures which could cause severe burns. Some surfaces can reach close to 200 °C (392 °F).

Ensure that the machine is not loaded beyond its nominal capacity (see "Specific load" in the instruction booklet's technical characteristics).
An excessive load has consequences for the lifetime of the machine's organs, as follows :
• Rapid destruction of the suspension elements (springs, shock absorbers).
• Excessive fatigue of motorisation elements (engine, belt).
• Rapid reduction of lifetime of drum bearings (rolling bearings).
• Opening and destruction of drum doors and tank doors during oil dehydration.
This is particularly important for your safety and that of others.
The consequence is an immediate cancellation of the warranty.

The use and handling of chemical products such as detergent, chlorine, acids, antiliming agents etc... may create hazards for health and environment ; the following precautions should be taken.

- Do not breathe the dusts or steam.
- Avoid contact with skin or eyes (may cause burns).
- In case of important spillage, wear a protecting mask, gloves, and eye protectors.
- Handle with care.
- Consult the use and first aid advice on the packings.
- Do not dispose pure products in the environment.



The machine can work without the protective casing when the electric supply is not cut off.
Interlock the main isolating switch with a padlock.
Close the steam inlet valves.

Distributor Letter

CHEMICAL SYSTEM RESPONSABILITY

DISCLAIMER

The following policy should be considered and understood as a warranty/disclaimer to customers operating textile care installations where liquid supply (chemical) systems use or may use peristaltic pumps to inject supplies into equipment.

To Whom it May Concern :

We, the undersigned, accept no responsibility for loss or damage when, during periods of non-use, concentrated chemicals leak, spray or "dribble" onto any part of our machines or their contents.

It is well known that many pumped liquid chemical systems tend to permit concentrated chemicals to dribble out of the injection tubes when the system has not been used for relatively long periods of time – as after working hours and during weekends. This puts highly concentrated corrosive chemicals in direct contact with dry stainless steel surfaces and often directly on any textiles left in the machine. Chemical deterioration (rusting) of the stainless steel and damage to the textiles is the inevitable result.

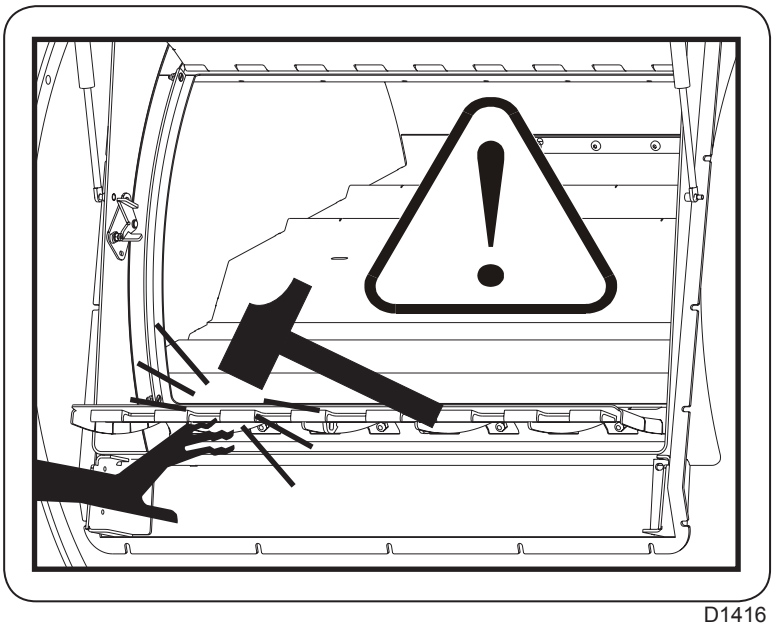
It is absolutely useless to flush the affected sites after each injection because the *harmful dribble always occurs later* – after the machine is no longer in use. One seemingly foolproof solution for "dribbling chemicals" (which we highly recommend but obviously cannot guarantee) is to locate the chemical tanks and pumps well below the injection point on the machine (so the contents of the injection tube(s) cannot siphon into the machine) and to completely purge the just-used chemical injection tube(s), or manifold, with *fresh water after every injection* so that only fresh water (which cannot cause a problem) can dribble out. Naturally, this – or any other solution – is the sole responsibility of the pump and/or chemical supplier (not the machine manufacturer).

Additionally, external chemical leakage is dangerous to personal health and safety, and will also cause severe damage to machines and/or their surroundings. The installer and/or user of the chemical injection system must make sure there are no external chemical leaks and that excessive pressure can never build up in any chemical delivery tube, *because excessive pressure can burst the tube, or disconnect it from the machine, and spray dangerous concentrated chemicals about the premises.*

The machinery manufacturer is not, and cannot be, responsible for compliance with the above.

ATTENTION

Risk of jamming when opening the lower door for unloading



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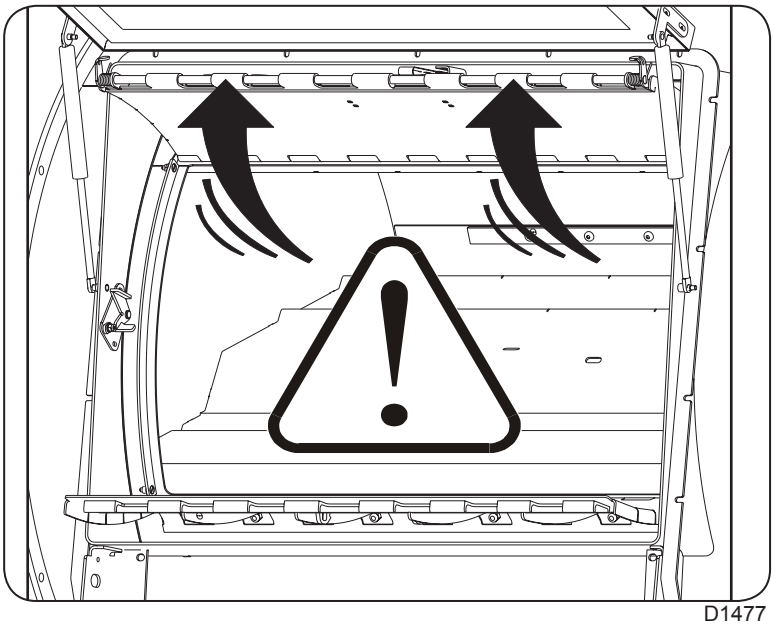
ATTENTION

Risk of the upper door being raised quickly on loading



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General instructions

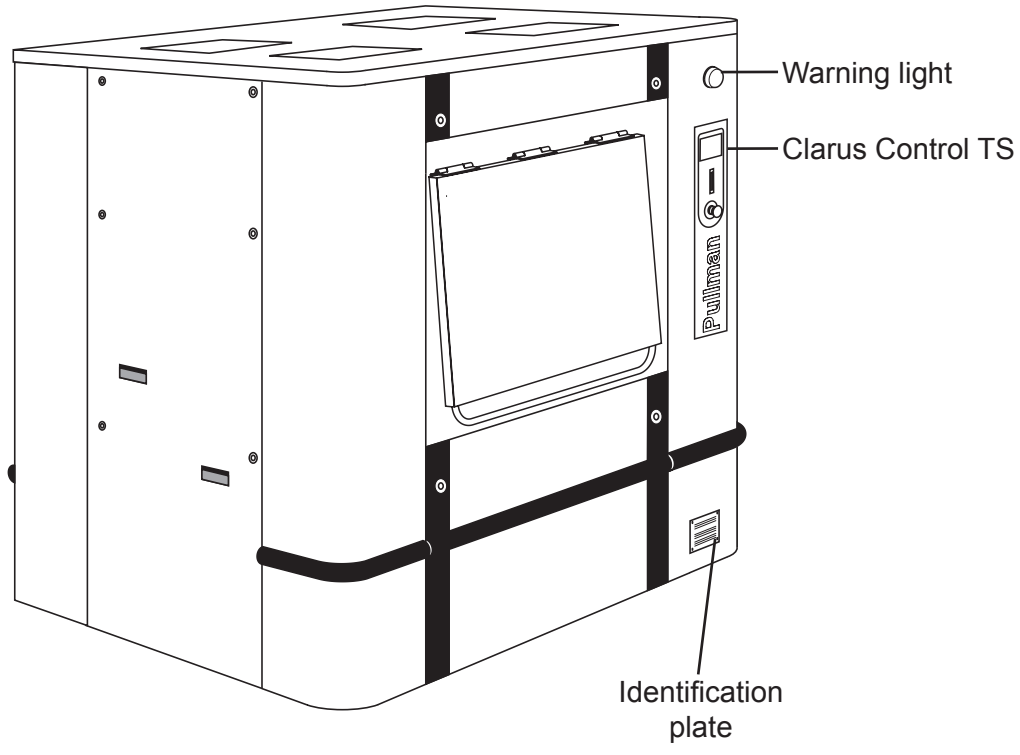
The machines described in this handbook have a washing capacity of 700, 900 or 1100 litres according to their type.

They are washer-extractors designed to meet the most severe requirements.

They are designed to be installed in hotels, laundries, hospitals or collectivities.

The suspension device mounted with springs and shock absorbers limits to the maximum ground vibrations.

A important G factor guarantees the highest extraction quality for your linen.



This washer extractor is controlled by a microprocessor-based program control unit placed on the loading side. There are many advantages to this equipment, including :

• Timing, levels and temperatures are controlled with great precision and flexibility.

• The large display screen means that detailed information on wash programs, machine status and operations, wash times and temperatures can be accessed in plain language.

• It is possible for the user to create new wash programs, and to adapt programs with great precision, on the basis of experience and to suit various types of textile, degrees of soiling etc.

• A very high level of machine safety through continuous monitoring and built-in safety interlocks.

• The program control unit has a reader for "smart cards". These are cards the size of a credit card which contain a memory chip. Smart cards allow the user to :

- transfer wash programs between a PC and the washer extractor, or from one washer extractor to another;

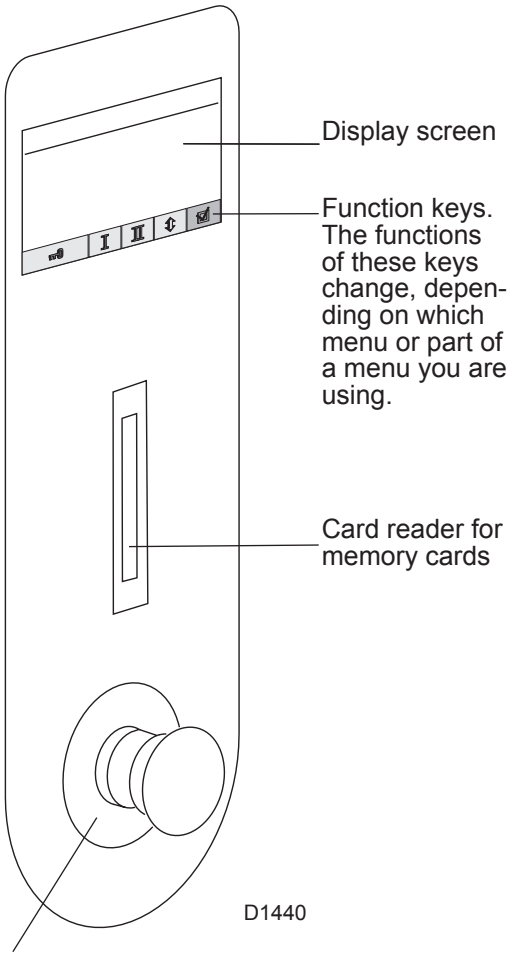
- run programs straight from a card.

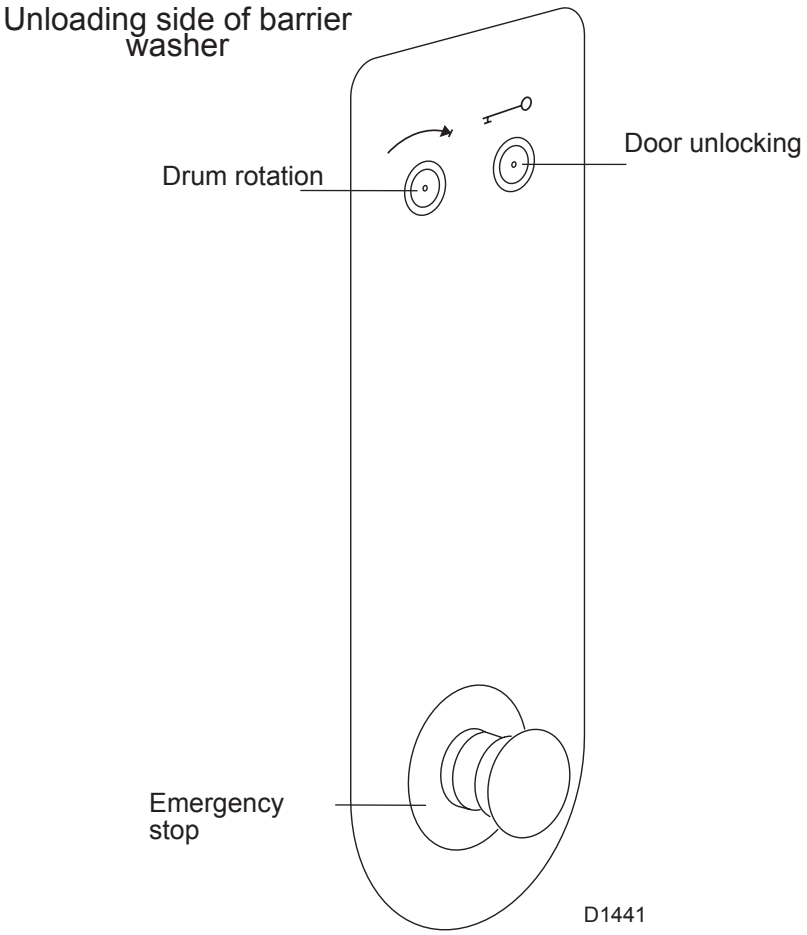
• Great flexibility during program operation :

- rapid advance both forwards and backwards in the program;

- the user can change temperatures, program module lengths and extraction speeds directly, during program operation;

- change to running a different wash program, at any time during program operation of the washer extractor.

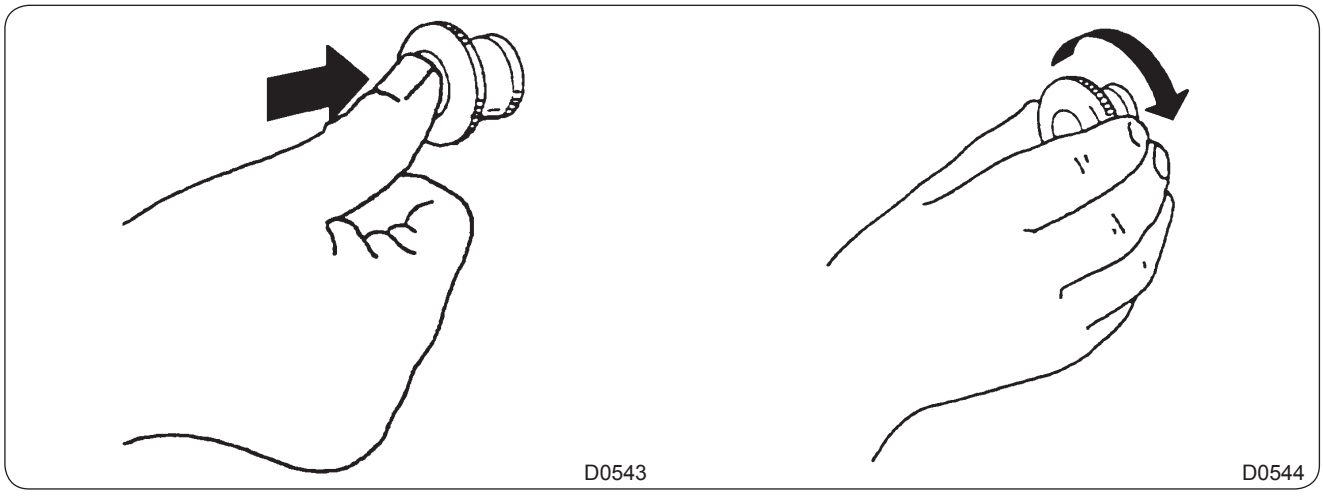




The emergency stop must be unblocked, if not the machine will not work (to unblock, turn the red button to the right).

If the machine for some reason has to be stopped, abnormal or dangerous running, press emergency stop button.

Release the emergency stop, by turning it clockwise only after checking what motivated this stop.



A very high working safety level of the machine is achieved thanks to a continuous monitoring and built-in safety devices.

Even the compound textile fabrics can be washed at a high temperature with no crumpling risk thanks to a special cooling process before the rinsing cycle.

In order to avoid an excessive mechanical fatigue during the hydro-extraction process, the machine is equipped with an unbalance detector. If the latter detects the least unbalance of the load, the hydro-extraction cycle is interrupted and the machine fills with water to make a new distribution of the linen possible.

The machine then resumes the distribution speed and another hydro-extraction cycle begins.

The machine can also be controlled sequence by sequence and is equipped with a tactile display for the manual control of certain functions.

Note about the A.C. power

- According to the EN 60204-1:1997 standard, the machine is provided for AC supplies corresponding to the extracted caracteristics below :

4.3.2 AC supplies

Voltage :
Steady state voltage : from 0.9 to1.1 of nominal voltage.

Frequency :
from 0.99 to 1.01 of nominal frequency continuously.
from 0.98 to 1.02 short time.

Harmonics :
Harmonic distorsion not to exceed 10% of the total r.m.s. voltage between live conductors for the sum of the second through to the fifth harmonic. An additional 2% of the total r.m.s. voltage between live conductors for the sum of the sixth through to the 30th harmonic is permissible.

Voltage unbalance :
Neither the voltage of the negative sequence component nor the voltage of the zero sequence component in three-phase supplies shall exceed 2% of the positive sequence component.

Voltage interruption :
Supply interrupted or at zero voltage for not more than 3ms at any random time in the supply cycle. There shall be more than 1s between successive interruptions.

Voltage dips :
Voltage dips shall not exceed 20% of the peak voltage of the supply for more than one cycle. There shall be more than 1s between successive dips.

Precautions for use

- ☞ The machine should not be used by children.
- ☞ The machine is designed for "water washing" of textile only.
- ☞ This machine is for professional use and must be used exclusively by qualified personnel.
- ☞ It is forbidden to wash textiles soaked with solvents.
- ☞ In case of a gas heated machine, do not assemble the machine on premises containing a dry cleaning machines or other similar machines.
- ☞ If your machine has two compartment with the same linen load to prevent unbalances.
- ☞ Please wash only items offering appropriate distribution inside the drum. Do not wash items such as mattresses or shoes.
  Call our technical departments before washing non-standard items. Non compliance with these instructions may void the manufacturer's guarantee in case of abuse of the washer-extractor.

Loading

Warning !

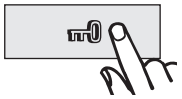
Make sure to distribute correctly the linen load in the two compartments.

Loading side

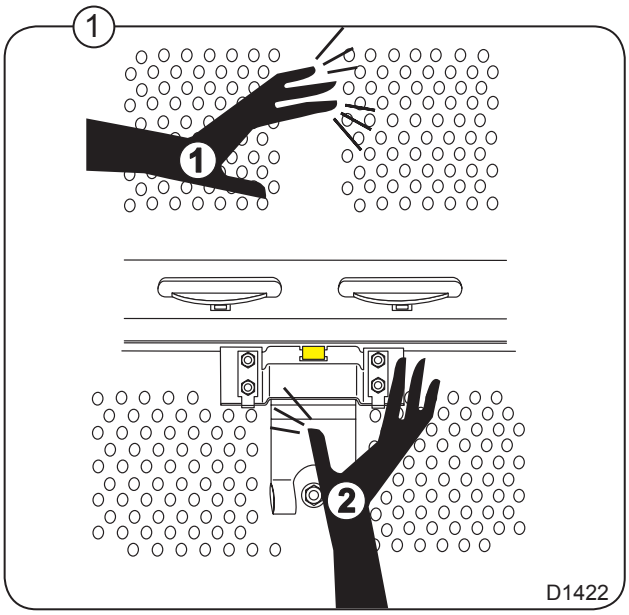
↳ Push on the **POSITION I** key.

- The drum rotates to bring the first compartment in loading position.
- During the rotation, the window **"Positioning on hand"** is displayed.
- It disappears when the drum is in position.

↳ Push on the **DOOR UNLOCKING** key.



- The door unlocks.

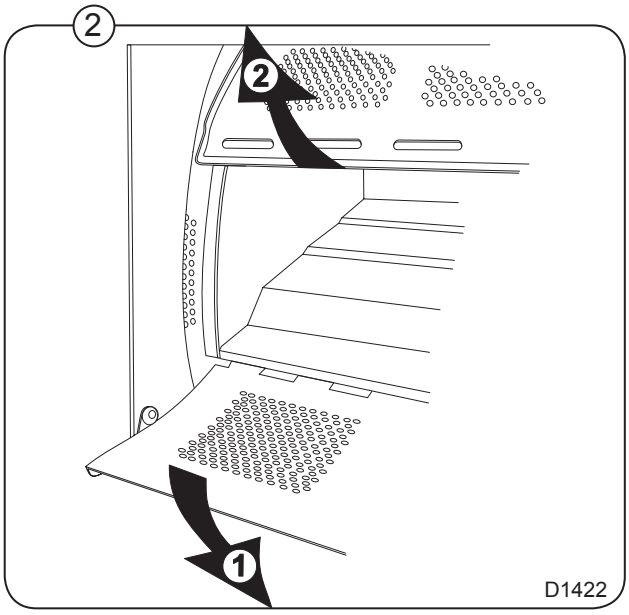


↳ Open the loading door using the handle.

- (fig. 1) Press on the safety lock **and on upper and lower doors at the same time with both hands.**

↳ Open the drum door until complete opening.

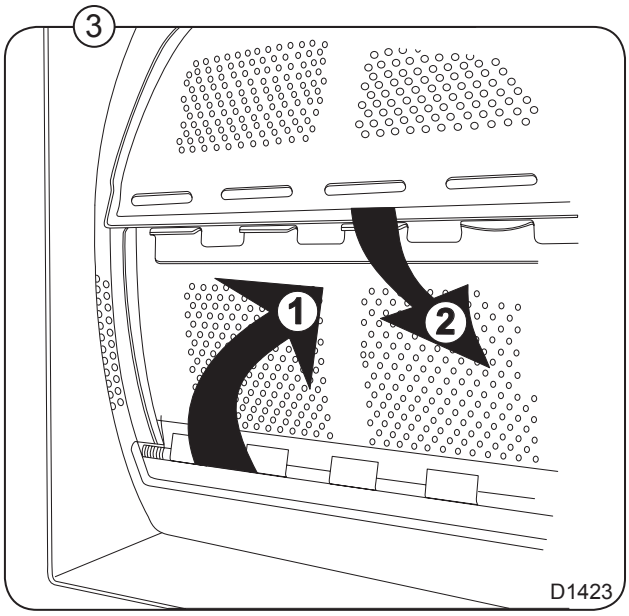
- (fig. 2) Open the lower drum door and push on the upper door, to lock it with the upper blocking plate to open it completely (see opposite indications).



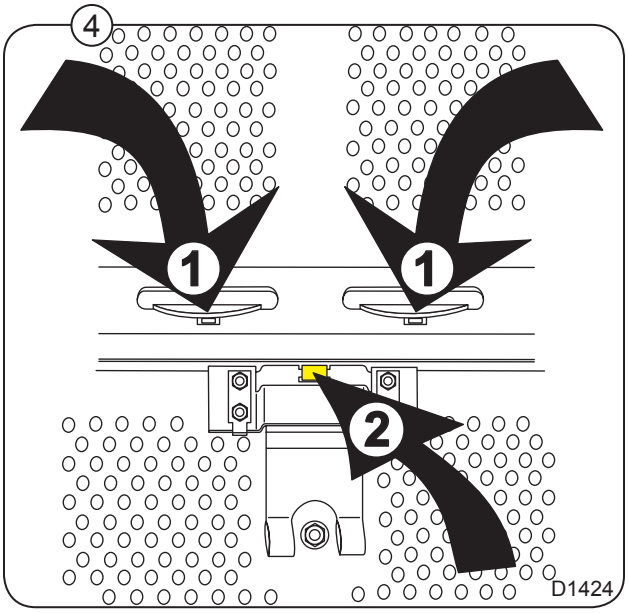
↳ Load the linen into the drum making sure of its correct distribution.

↳ Close the drum doors.

- (fig. 3) Close the lower drum door. Push on the lower door so that it is hooked in the lower door holes. Let the door go of.



- (fig. 4) Check that the mechanical safety is properly closed and push on drum doors (if doors are not properly closed, they might open during a washing cycle and strongly damage the machine).

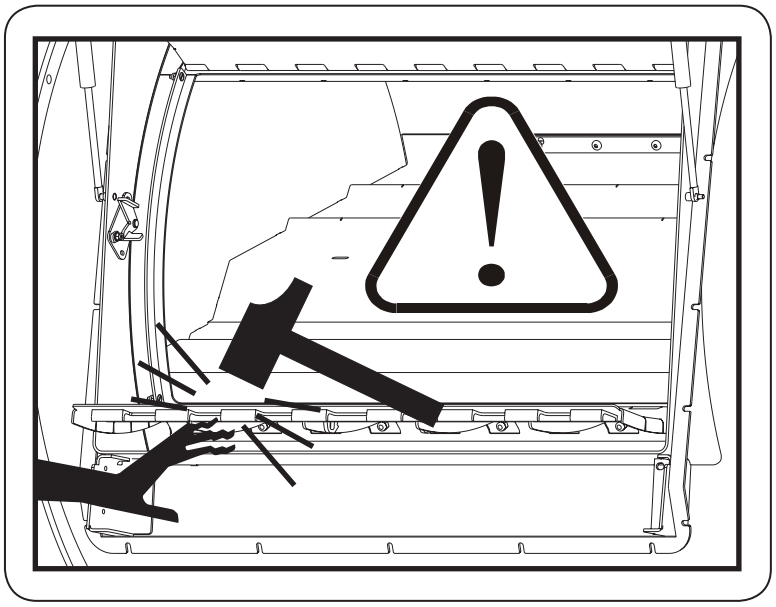


↳ Close the cage door for locking.

Make sure not to overload the machine.

ATTENTION

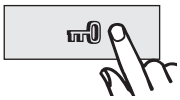
Risk of jamming when opening the lower door for unloading



↳ Push on the **POSITION II** key to bring the second compartment in loading position.

- The cage rotates to bring the second compartment in loading position.
- During this rotation, the window **"Positioning on hand"** is displayed.
- It disappears when the drum is in position.

↳ Push on the **DOOR UNLOCKING** key.



- The door unlocks.

↳ Open the loading door with the handle.

↳ Open the drum doors like before.

↳ Load the linen into the drum making sure of its correct distribution.

Make sure not to overload the machine.

- Close the drum doors like before (check the good running of the mechanical safety lock by push on the drum doors).

- Close the cage door for locking.

- The machine is now ready to start the washing cycle.

Nota : You should absolutely load booth drum’s compartments before launching washing cycle. The machine does not start if the condition is not fullfilled.

To run a wash program

The "Move back" key

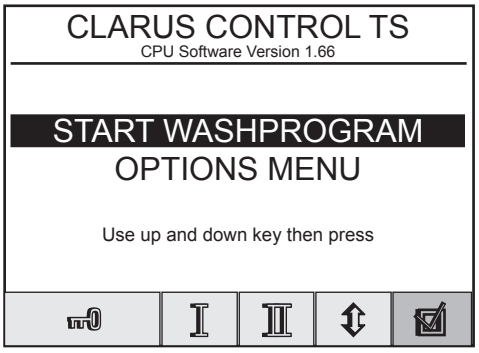
If you find you are in the wrong place, or if you want to undo earlier key presses :

Press the **"Move back"** key one or more times.

The "Move back" function

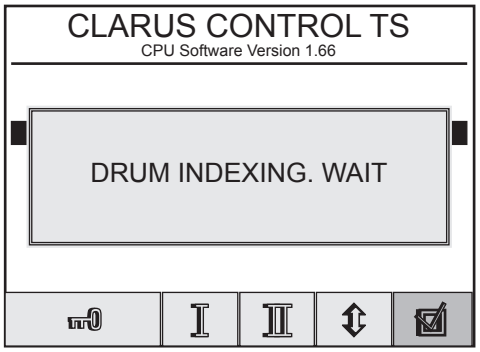
Each press of the "Move back" key moves you back one menu, in reverse order.

By pressing this key repeatedly you can return to this menu at any time :



D1266

Compartment indexing



D1315

When an indexing of the compartiment 1 or 2 is requested, the window "DRUM INDEXING. WAIT" is displayed.

When the operation is realized, the window disappears.

Drum indexing

When an indexing is requested, the keys of the tactile display become totally inactive.

The both loading doors must be closed, the locking is next automatic.

In case of one of the door is not closed, the machine can not start and the display stays inactive.

To unlock the door,

Press this key :

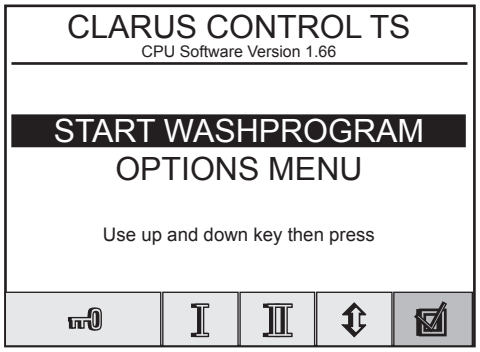
To position the first compartiment,

Press this key.

To position the second compartiment,

Press this key.

To start the wash program



D1266

If the menu is not currently displayed, press

repeatedly.

If "OPTION MENU" is highlighted,

Press this key.

When "START WASHPROGRAM" is highlighted,

Press this key.

▶**"SELECT WASH PROGRAM"** menu (following page)

The wash program modules

Prewash
: Used for prewash and brief soaking.

Main wash
: Used as the main wash module, with heating and detergent dispensing.

Rinse
: Rinsing of the load.

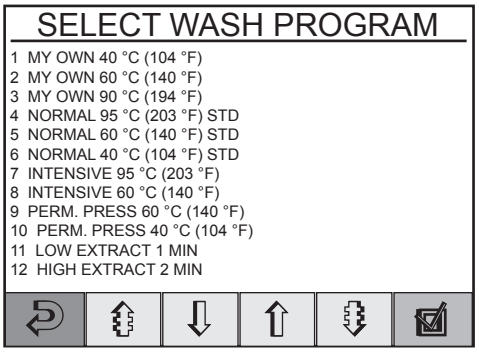
Drain
: Drain stage after wash and rinse stages.

Extract

Cool-down
: Used for controlled cooling of the wash water to prevent creasing of the wash load.

Soak
: Used for longer soak stages.

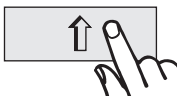
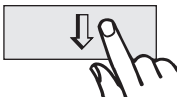
"SELECT WASH PROGRAM" menu



D1314

To escape, push on :

"Move back" key

Allows to choose the program.


Previous and following page.

To enter, push on :

"Valid" key

Starting a program

By starting from the program library

If you are unsure about the programs available, you can select a program from the program library, where the programs are listed with their descriptions.

What is the program library ?

The program library lists all wash programs, both user and standard programs, showing their program numbers and a description, for example :

1 MY OWN 40 °C (104 °F)
2 MY OWN 60 °C (140 °F)
3 MY OWN 90 °C (194 °F)
4 NORMAL 95 °C (203 °F) STD
5 NORMAL 60 °C (140 °F) STD
6 NORMAL 40 °C (104 °F) STD
7 INTENSIVE 95 °C (203 °F)
8 INTENSIVE 60 °C (140 °F)
9 PERM. PRESS 60 °C (140 °F)
10 PERM. PRESS 40 °C (104 °F)
11 LOW EXTRACT 1 MIN
12 HIGH EXTRACT 2 MIN

►**"DELAYED START"** menu (following page)

Wash programs description

No 800 Sheets hotel - Cotton sponges - White with bleach

Prewash	4 minutes	35 °C	Cold hard water	Level 70 units	
Drain	1 minute				
Mainwash 1	1 minute		Hot water	Level 70 units	
Mainwash 2	8 minutes	85 °C	Hot water	Level 70 units	Signal 1
Drain	1 minute				
Rinse	3 minutes		Cold hard water	Level 140 units	
Drain	1 minute				
Rinse	8 minutes		Cold hard water	Level 140 units	Signal 1
Drain	1 minute				
Rinse	4 minutes		Cold hard water	Level 140 units	Signal 2
Extraction	8 minutes	710 rpm			

No 801 Hospital gowns 70 - Polyester cotton - Hydrogen peroxide

Prewash	4 minutes	35 °C	Cold hard water	Level 70 units	
Drain	1 minute				
Mainwash 1	1 minute		Hot water	Level 70 units	
Mainwash 2	4 minutes	70 °C	Hot water	Level 70 units	Signal 1
Mainwash 3	6 minutes	70 °C	Cold hard water	Level 70 units	Signal 1
Cool down		55 °C			
Drain	1 minute				
Rinse	2 minutes		Cold hard water	Level 140 units	
Drain	1 minute				
Rinse	8 minutes		Cold hard water	Level 140 units	Signal 2
Extraction	6 minutes	710 rpm			

No 802 Hospital gowns 85 - Polyester cotton with bleach

Prewash	4 minutes	35 °C	Cold hard water	Level 70 units	
Drain	1 minute				
Mainwash 1	1 minute		Hot water	Level 70 units	
Mainwash 2	8 minutes	85 °C	Hot water	Level 70 units	Signal 1
Cool down		55 °C			
Drain	1 minute				
Rinse	2 minutes		Cold hard water	Level 140 units	Signal 1
Drain	1 minute				
Rinse	8 minutes		Cold hard water	Level 140 units	
Drain	1 minute				
Rinse	4 minutes		Cold hard water	Level 140 units	Signal 2
Extraction	5 minutes	710 rpm			

No 803 Working clothes cotton 85

Prewash	10 minutes	85 °C	Cold hard water	Level 70 units	
Drain	1 minute				
Mainwash 1	1 minute	60 °C	Hot water	Level 70 units	
Mainwash 2	10 minutes	85 °C	Hot water	Level 70 units	Compartment 2
Drain	1 minute				
Rinse	3 minutes		Cold hard water	Level 140 units	
Drain	1 minute				
Rinse	3 minutes		Cold hard water	Level 140 units	
Drain	1 minute				
Rinse	2 minutes		Cold hard water	Level 140 units	Signal 2
Extraction	8 minutes	710 rpm			

No 804 Working clothes polyester cotton - Prewash / wash 85 cooldown

Prewash	10 minutes	85 °C	Cold hard water	Level 70 units	
Drain	1 minute				
Mainwash 1	1 minute		Hot water	Level 70 units	
Mainwash 2	10 minutes	85 °C	Hot water	Level 70 units	Compartment 2
Cool down		55 °C			
Drain	1 minute				
Rinse	3 minutes		Cold hard water	Level 140 units	
Drain	1 minute				
Rinse	3 minutes		Cold hard water	Level 140 units	
Drain	1 minute				
Rinse	2 minutes		Cold hard water	Level 140 units	Signal 2
Extraction	5 minutes	710 rpm			

No 805 85 white table linens with bleach

Prewash	4 minutes	50 °C	Cold hard water	Level 70 units	
Drain	1 minute				
Mainwash 1	1 minute		Hot water	Level 70 units	
Mainwash 2	10 minutes	85 °C	Hot water	Level 70 units	Compartment 2
Drain	1 minute				
Rinse	3 minutes		Cold hard water	Level 140 units	
Drain	1 minute				
Rinse	8 minutes		Cold hard water	Level 140 units	Signal 1
Drain	1 minute				
Rinse	2 minutes		Cold hard water	Level 140 units	Signal 2
Extraction	8 minutes	710 rpm			

No 806 Table linen color 85 with hydrogen peroxide

Prewash	4 minutes	50 °C	Cold hard water	Level 70 units	
Drain	1 minute				
Mainwash 1	1 minute		Hot water	Level 70 units	
Mainwash 2	10 minutes	85 °C	Hot water	Level 70 units	Signal 1
Drain	1 minute				
Rinse	3 minutes		Cold hard water	Level 140 units	
Drain	1 minute				
Rinse	8 minutes		Cold hard water	Level 140 units	
Drain	1 minute				
Rinse	4 minutes		Cold hard water	Level 140 units	Signal 2
Extraction	8 minutes	710 rpm			

No 807 90 kitchen towels with bleach

Prewash	4 minutes	35 °C	Cold hard water	Level 70 units	
Drain	1 minute				
Mainwash 1	1 minute		Hot water	Level 70 units	
Mainwash 2	10 minutes	90 °C	Hot water	Level 70 units	Compartment 2
Drain	1 minute				
Rinse	3 minutes		Cold hard water	Level 140 units	
Drain	1 minute				
Rinse	3 minutes		Cold hard water	Level 140 units	Signal 1
Drain	1 minute				
Rinse	2 minutes		Cold hard water	Level 140 units	Signal 2
Extraction	8 minutes	710 rpm			

No 808 Quilt 60 - 5 min spin

Prewash	5 minutes	35 °C	Cold hard water	Level 70 units	
Drain	1 minute				
Mainwash 1	10 minutes	60 °C	Cold hard water	Level 70 units	Compartment 2
Drain	1 minute				
Rinse	3 minutes		Cold hard water	Level 140 units	
Drain	1 minute				
Rinse	2 minutes		Cold hard water	Level 140 units	
Drain	1 minute				
Rinse	2 minutes		Cold hard water	Level 140 units	Signal 2
Extraction	5 minutes	710 rpm			

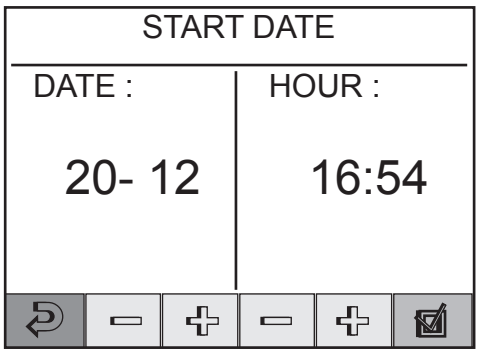
No 809 Synthetic blankets 30 - Spin 2 min

Mainwash	10 minutes	30 °C	Cold hard water	Level 70 units	Compartment 2
Drain	1 minute				
Rinse	2 minutes		Cold hard water	Level 140 units	
Drain	1 minute				
Rinse	2 minutes		Cold hard water	Level 140 units	Signal 3
Extraction	3 minutes	710 rpm			

N° 810 Delicate 30 - Spin 2 min

Mainwash	10 minutes	30 °C	Cold hard water	Level 140 units	Compartment 2
Drain	30 seconds				
Rinse	3 minutes		Cold hard water	Level 140 units	
Drain	30 seconds				
Rinse	3 minutes		Cold hard water	Level 140 units	Signal 5
Extraction	2 minutes	415 rpm			

"DELAYED START" menu



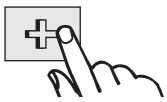
D1317

To escape, push on :

"Move back" key

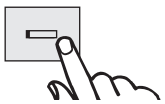
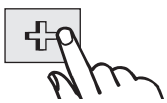
DATE :
21- 12

Adjust the programmed day date.

HOUR :
8:30

Adjust the hour by step of 30 minutes.

To enter, push on :

"Valid" key

►**"DELAYED START"** waiting display (following page)

Delayed start

Delayed start means that the machine will start the wash program at the day and the hour you have programed.

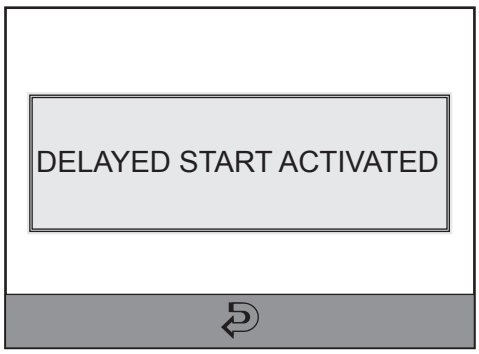
This function allows you, for example, to load the machine in the evening but delay the start of the wash the night to profit of a reduced electric rate, or to use the machine the next morning (production in masked time).

Immediate start

The machine indicates the day date and the current hour; for an immediate start, just push on **"Valid"** key :

►**"OPERATING CYCLE"** display

"DELAYED START" waiting display



D1316

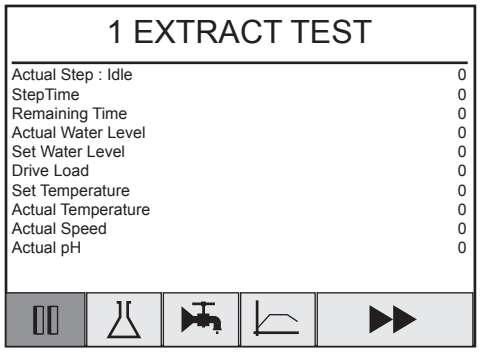
Move back

The pushing on **"Move back"** key will cancel the programed delayed start.

▶**"CLARUS CONTROL TS"** menu

▶**"OPERATING CYCLE"** display (following page)

"OPERATING CYCLE"



D1350

During the wash program, the display shows the current program step and the opposite informations.

To put the machine in stand-by, push on :

"Pause" key (following page)

▶**"WATER AND DETERGENT BOX"** display (following page)

▶**"LIQUID CHEMICALS STATUS"** display (following page)

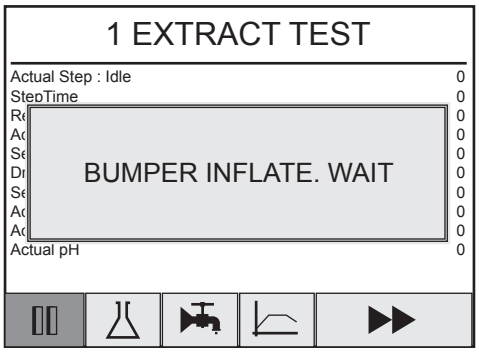
Actually out of service**.**

"Rapid advance"

Cycle start

At a cycle start, the window "BUMPER INFLATE. WAIT" is displayed.

The keys of the tactile display become totally inactive.



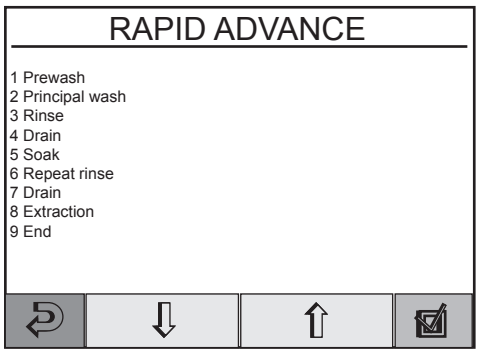
D1350

When the operation is finished, the window disappears.

Rapid advance

Rapid advance works in both directions.

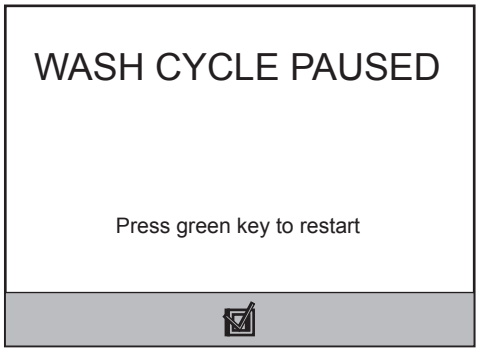
Using rapid advance to move forwards allows you to skip one or more program steps. Using rapid advance to move backwards allows you to repeat one or more program steps.



D1267

▶**"OPERATING CYCLE"** display.

"WASH CYCLE PAUSED" display



D1336

To move back, press the :

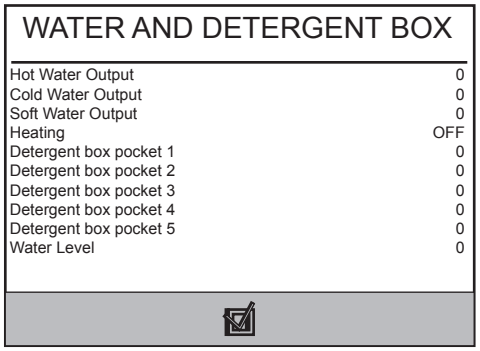
"Valid" key

When the machine pauses :

- program operation is halted;
- filling is halted (where applicable);
- heating is halted (where applicable);
- the motor stops;
- the drain valve remains closed;
- the door cannot be opened.

▶**"OPERATING CYCLE"** display (previous page)

"WATER AND DETERGENT BOX" display



D1349

To move back, press the :

"Valid" key

Water and detergent box

Water/Drain

Visualize the state of all water valves and the drain valve.

Soap box compartment

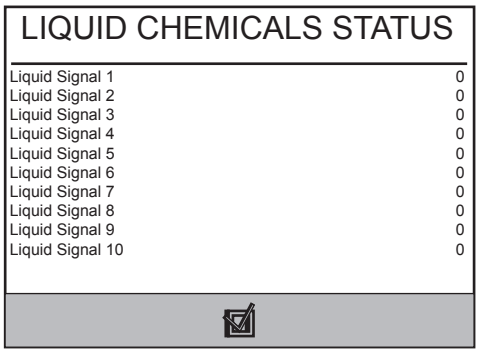
Visualize the state of the soap box compartments.

Heating

Visualize the state of heating.

▶**"OPERATING CYCLE"** display (previous page)

"LIQUID CHEMICALS STATUS" display



D1349

To move back, press the :

"Valid" key

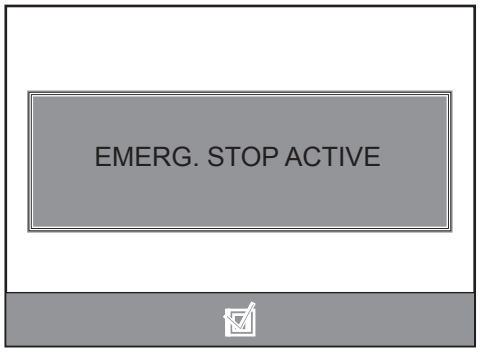
Liquid chemicals status

Detergent valves

Visualize the state of valves in the detergent compartment or in external detergent supply system.

▶**"OPERATING CYCLE"** display (previous page)

"EMERGENCY STOP" display



D1270

After a pushing on the emergency stop, the opposite display appears.

After the emergency stop releasing, push on :

"Valid" key

Emergency stop

If the machine for some reason has to be stopped, abnormal or dangerous running, press emergency stop button.

Release the emergency stop, by turning it clockwise only after checking what motivated this stop.

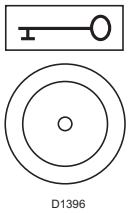
▶**"CLARUS CONTROL TS"** menu

At the end of the wash

Unloading side

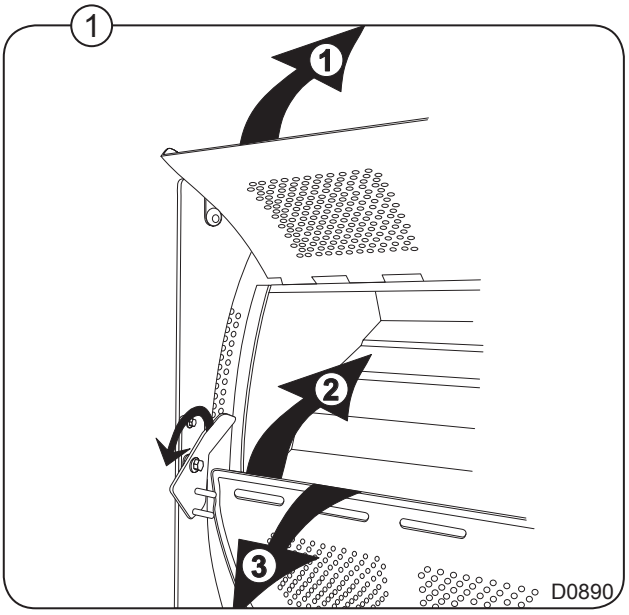
- At the end of the washing cycle, one of the two compartments of the drum is automatically positioned to be unloaded. The warning light flashes.

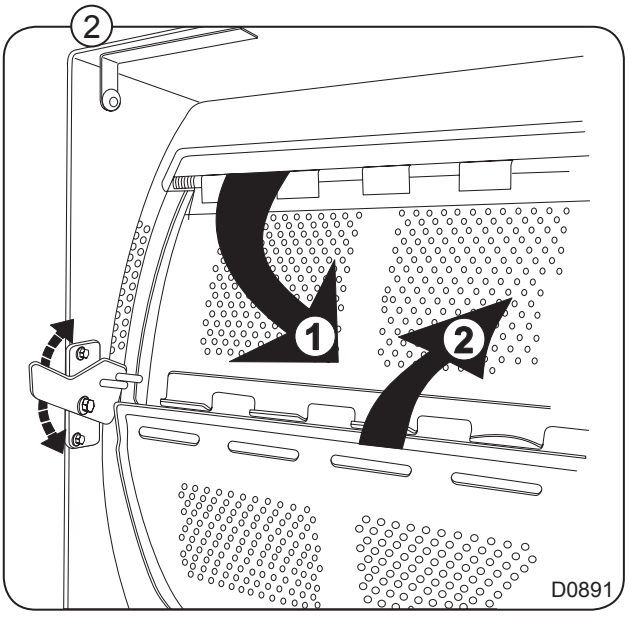
- Push on the **DOOR UNLOCKING** key that flashes (automatic unlock of the cage doors and drum doors - optional).

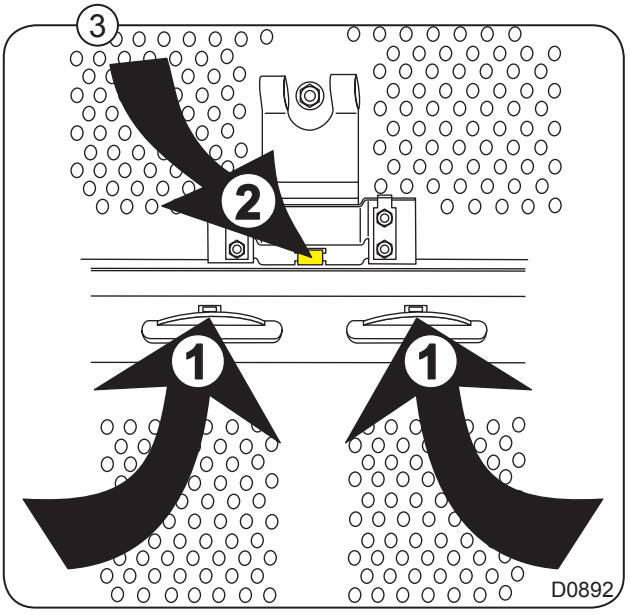


- Open the unloading side door using the handle.

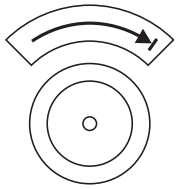
- (fig. 1) Open the upper drum door to lock it with the upper blocking plate, push on the lower door to free the middle stop device and then pull the lower door to open it completely (see details against).
- Unload the linen from the drum.
- (fig. 2) Close the upper drum door. The stop device rotates to block the door in its position. Push on the lower door so that it is hooked in the upper door holes. Let the door go of.
- (fig. 3) Check that the mechanical safety is properly closed and push on drum doors (if doors are not properly closed, they might open during a washing cycle and strongly damage the machine).





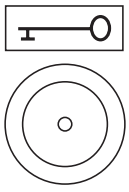


- Close the cage door (automatic lock of the cage door).
- Push on the **DRUM ROTATION** key to bring the second compartment in unloading position.



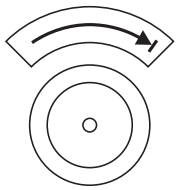
D1395

- Push on the **DOOR UNLOCKING** key that flashes (automatic unlock of the cage doors and drum doors - optional).



D1396

- Open the doors like above.
- Unload the linen from the drum.
- Close the drum doors like above (check the good running of the mechanical safety lock by pushing on the drum doors).
- Close the cage door (automatic lock of the cage door).
- Push on the **DRUM ROTATION** key, the drum slightly rotates to bring a compartment in loading position.



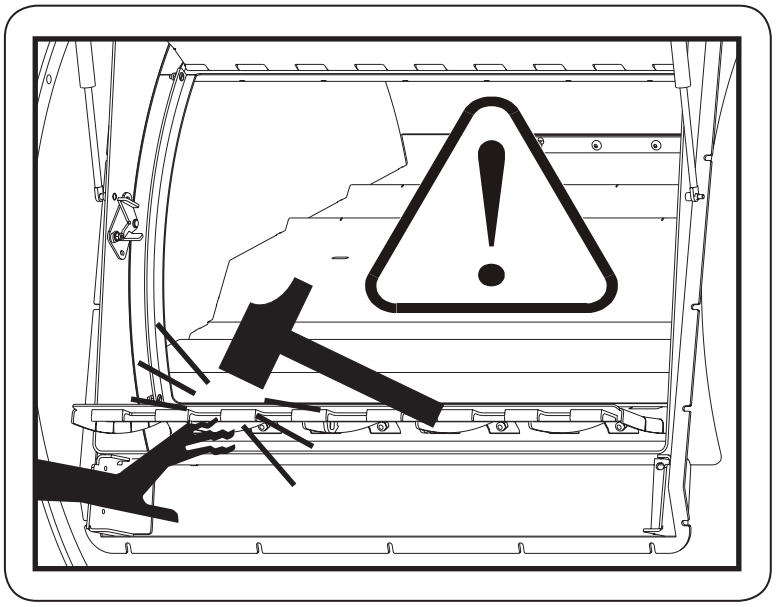
D1395

Loading side

- The warning light flashes. The machine is now ready for the launching of a new washing cycle.

ATTENTION

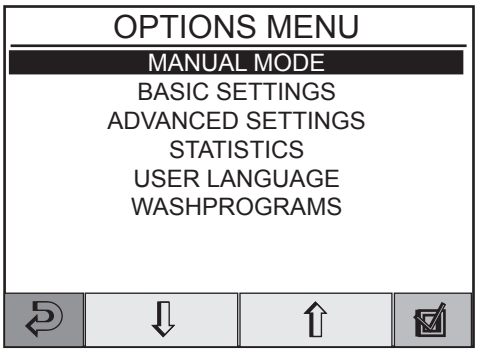
Of the pinching risk when opening the lower door at unloading



This page is left blank on purpose.

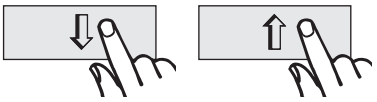
MANUAL MODE

Since the "OPTIONS MENU"



D1267

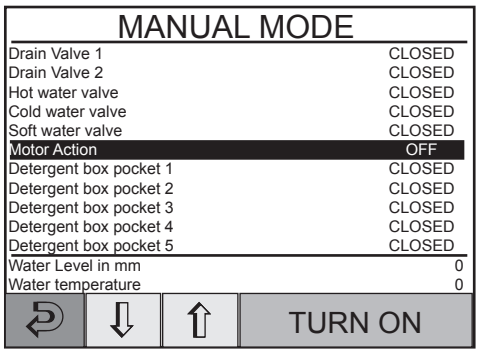
Select the **"MANUAL MODE"** menu



by pressing this keys.

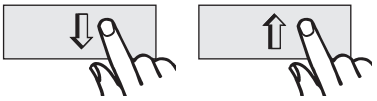
Then valid.

"MANUAL MODE" menu

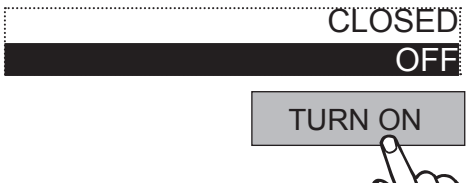


D1268

Select the wished function



by pressing this keys.



Put the function **"OFF"** on

by pressing this key.

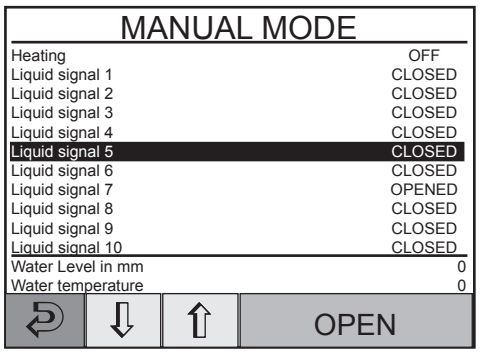
Put the function **"TURN ON"** off

by pressing this key.

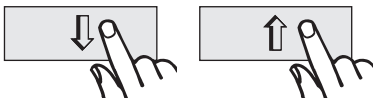
Manual mode

All manual settings (such as door, motor, temperature and drain) will be cancelled when you exit manual operation.

The door is unlocked, the motor stops, the drain opens, heating halted and the temperature is reset to zero.

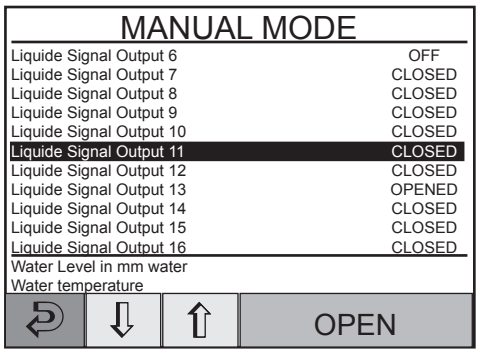


D1268

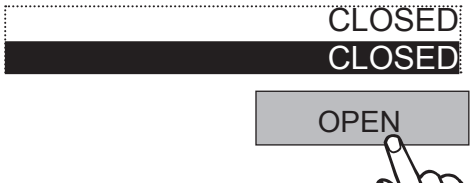


Select the wished function

by pressing this key.

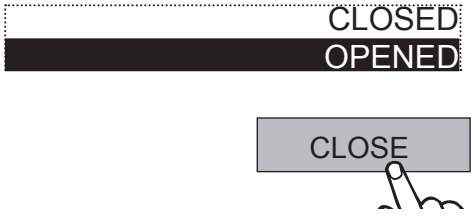


D1268



Put the function **"CLOSED"** to opening

by pressing this key.



Put the function **"OPENED"** to closing

by pressing this key.

Accessible manual functions

Water/Drain

Allows manual operation of all water valves and the drain valve #1 (drain #2 is an option).

Drum rotation

Motor on/off after program has ended.

Soap box compartment

This function will either :

a) use water to dispense detergent from machine compartments or;

b) dispense detergent from an external system. The number of valves present will vary according to the machine type.

Heating

Allows you to heat the water at the required temperature.

Detergent valves

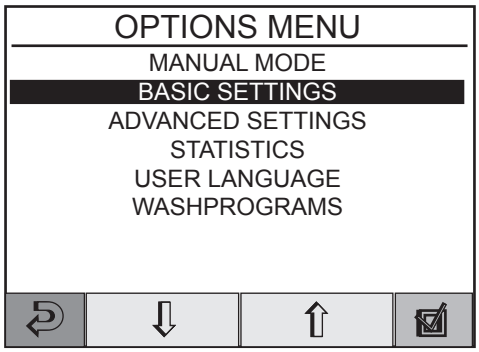
Allows you to control all valves in the detergent compartment or in external detergent supply system.

ATTENTION
Never program a temperature above to 90 °C (195 °F).

WARNING
If you happen to make your own program, you must not input cold water in the cage while this later has a washing bath at 85 °C (185 °F), with the cage stopped. It is compulsory that the cage turns while letting in cold water. A bad programming can, in this particular case, be the cause of the breakage of the doors' windows.

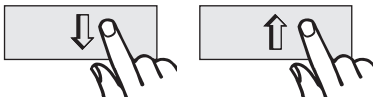
BASIC SETTINGS

Since the "OPTIONS MENU"



D1267

Select the **"BASIC SETTINGS"** menu



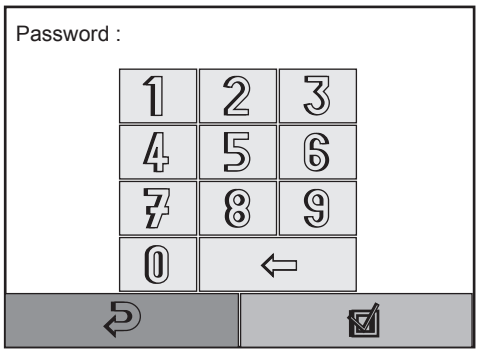
by pressing this keys.

Then valid.

"NUMERIC KEYBOARD" menu

Numeric keyboard

A password (a four-digit number), protects the access to the "Basic settings" functions.

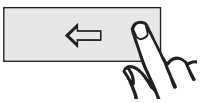


D1312

Compose the four number code with the numeric keys.

You can correct a bad capture

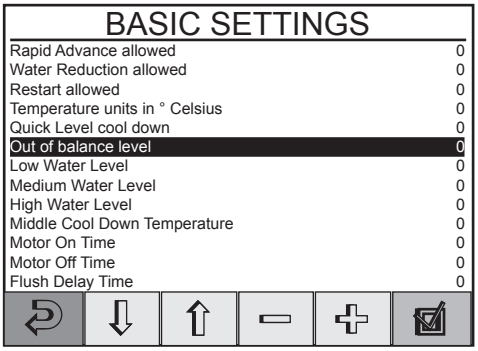
by pressing this key.



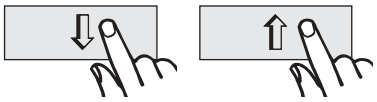
Then valid.

▶**"BASIC SETTINGS"** menu (following page)

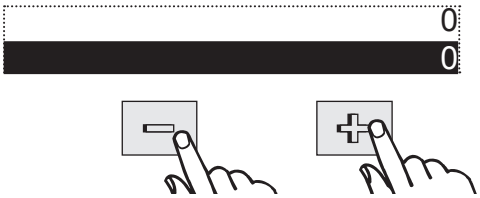
"BASIC SETTINGS" menu



Select the wished function



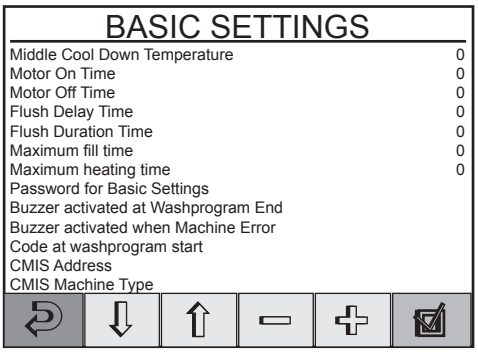
by pressing this keys.



Decrease or increase the value

by pressing this keys.

Then valid.



Basic settings

Rapid advance allowed
Allows the rapid advance function.

Water reduction allowed
Allows the water reduction function.

Number of auto restart
Allows to repeat the same program one or more time. The program will restart immediately, and the door will remain locked.

Temperature units in ° Celsius
Allows to change the temperature scale used for all temperature displayed.

Quick level cool down
Adjusts the level for cool water admission.

Out of balance level
Adjusts the level after out of balance.

Low water level
Adjusts the low level in the cage.

Medium water level
Adjusts the medium level in the cage.

High water level
Adjusts the high water level in the cage.

Middle cool down temperature
Adjusts the intermediate temperature of cool down.

Motor on time
Adjusts the motor on time in standard pace.

Motor off time
Adjusts the motor off time in standard pace.

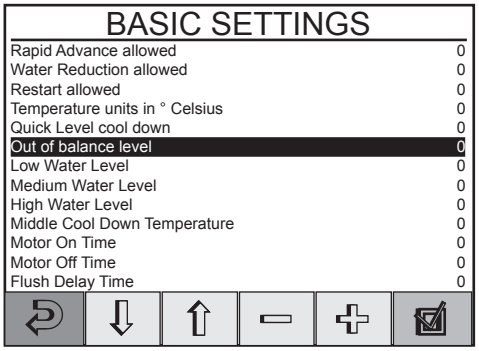
Flush delay time
Adjusts the flush delay time of the soap box.

Flush duration time
Adjusts the flush duration time.

Maximum fillig time
Adjusts the maximum fill time.

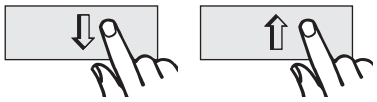
Maximum heating time
Adjusts the maximum heating time.

"BASIC SETTINGS" menu

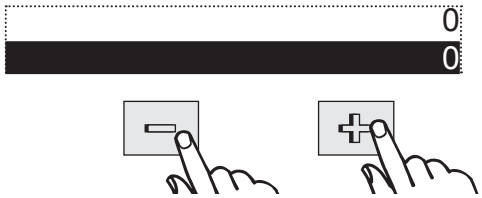


D1269

Select the wished function

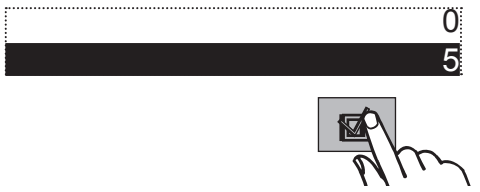


by pressing this keys.

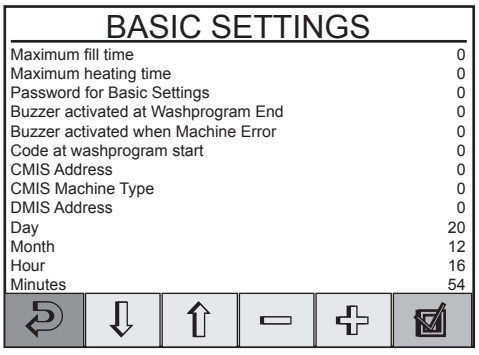


Decrease or increase the value

by pressing this keys.



Then valid.



D1269

Basic settings

Password for basic settings
: Allows to change the password for basic settings.

Buzzer activated at washprogram end
: Set the buzzer at washprogram end.

Buzzer activated when machine error
: Set the buzzer when machine error.

Code at washprogramstart
: Shield with a code at washprogramstart.

CMIS address
: Allows to adjust CMIS address.

CMIS machine type
: Allows to adjust the machine type for the CMIS (4=WPB700 ; 5=WPB900 ; 6=WPB1100).

DMIS Address
: Allows to adjust DMIS address.

Day
: Adjusts the day.

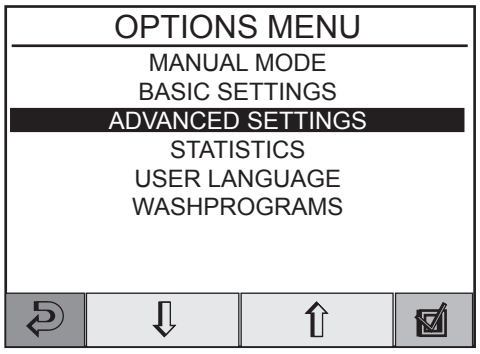
Month
: Adjusts the month.

Hour
: Adjusts the hour.

Minutes
: Adjusts the minutes.

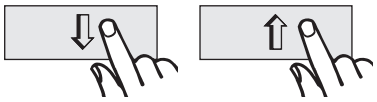
ADVANCED SETTINGS

Since the "OPTIONS MENU"



D1267

Select the **"ADVANCED SETTINGS"** menu



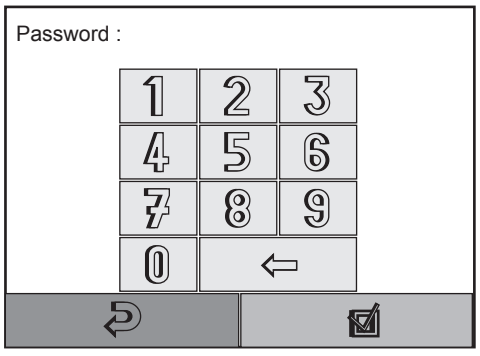
by pressing this keys.

Then valid.

"NUMERIC KEYBOARD" menu

Numeric keyboard

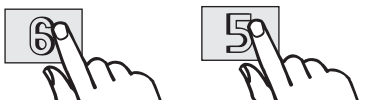
A password (a four-digit number), protects the access to the "Advanced settings" functions.



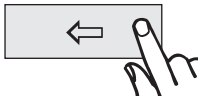
D1312

Compose the four number code with the numeric keys.

You can correct a bad capture



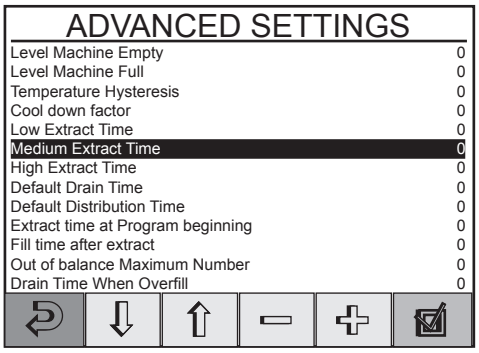
by pressing this key.



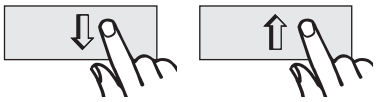
Then valid.

▶**"ADVANCED SETTINGS"** menu (following page)

"ADVANCED SETTINGS" menu



Select the wished function



by pressing this keys.

Decrease or increase the value

by pressing this keys.

Then valid.

Advanced settings

Level machine empty

Adjusts the level machine empty.

Level machine full

Adjusts the level machine full.

Temperature hysteresis

Temperature hysteresis is the number of degrees between the wash temperature and the temperature at which heating needs to restart.

Cool down rate

Adjusts the maximum temperature reduction per minute during the first cool down phase.

Default low extract time

Adjusts the low extract time.

Default medium extract time

Adjusts the medium extract time.

Default high extract time

Adjusts the medium extract time.

Default drain time

Adjusts the default drain time.

Default distribution time

Adjusts the default distribution time.

Start extract time

Actually out of service.

Rollout time

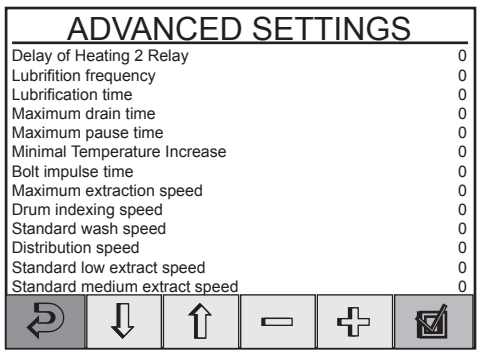
Adjusts the fill time after extract.

Maximum number of umbalances

Adjusts the out of balance max. number.

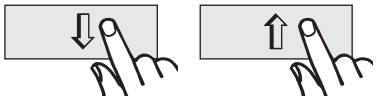
Drain time when overfill

Adjusts the drain time after overfill.



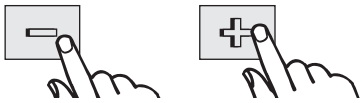
D1269

Select the wished function



by pressing this keys.

Decrease or increase the value



by pressing this keys.

Then valid.

Advanced settings

Delay heating relay 2

Actually out of service.

Oil lubrication hours

Actually out of service.

Pulse lubrication time

Actually out of service.

Maximum drain time

Adjusts the maximum drain time.

Maximum pause duration

Adjusts the maximum pause time.

Temperature increase

Adjusts the minimal temperature increase for the heating.

Door opening pulse

Actually out of service.

Maximum extract speed

Adjusts the maximum extraction speed.

Drum positionning speed

Adjusts the drum indexing speed.

Default wash speed

Adjusts the standard wash speed.

Default distribution speed

Adjusts the distribution speed.

Default low extraction speed

Adjusts the std low extract speed.

Default medium extraction speed

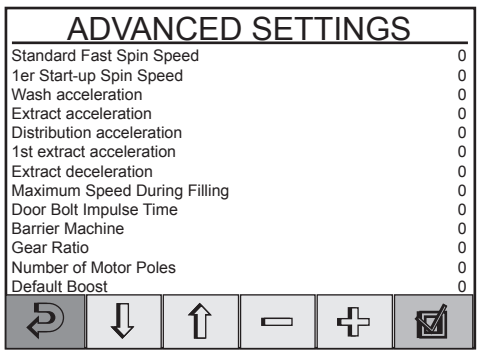
Adjusts std medium extract speed.

Default high extraction speed

Adjusts the standard fast spin speed.

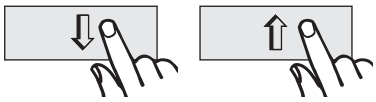
Start extract speed

Adjusts the initial spin speed.



D1269

Select the wished function

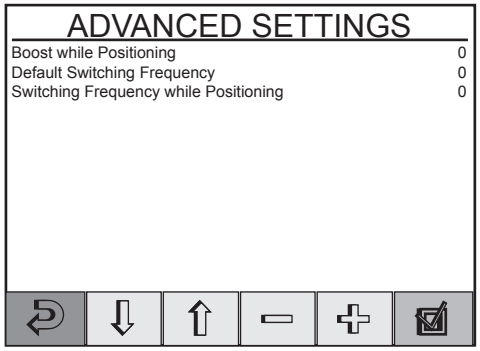


by pressing this keys.

Decrease or increase the value

by pressing this keys.

Then valid.



D1269

Advanced settings

Wash acceleration

Adjusts the wash acceleration.

Extract acceleration

Adjusts the extract acceleration.

Distribution acceleration

Adjusts the distribution acceleration.

Start extract acceleration

Adjusts the 1st extract acceleration.

Extract retardation

Adjusts the extract deceleration.

Maximum speed during filling

Adjusts the maximum speed during filling.

Door lock pulse

Actually out of service.

Barrier machine

Defines if the machine is barrier.

Gear ratio

Adjusts the gear ratio.

Number of motor poles

Adjusts the number of motor poles.

Default boost

Adjusts the default boost.

Boost while positioning

Adjusts the boost while positioning.

Default switching frequency

Adjusts the default switching frequency.

Switching frequency while positioning

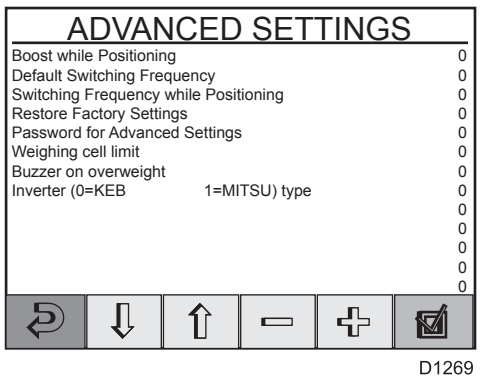
Adjusts the switching frequency while positioning.

Restore factory settings

Allows to come back to factory settings.

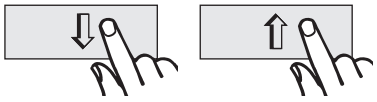
Password for advanced settings

Allows to change the password for advanced settings.



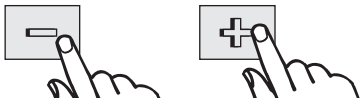
D1269

Select the wished function



by pressing this keys.

Decrease or increase the value



by pressing this keys.

Then valid.

Advanced settings

Weighing cell limit

0=start is possible if the linen quantity is over than the machine capacity (factory setting).

70=start is impossible if the linen quantity is over than 70 kg.

90=start is impossible if the linen quantity is over than 90 kg.

110=start is impossible if the linen quantity is over than 110 kg.

Buzzer on overweight

Buzzer is possible on overweight of the machine capacity.

0=buzzer unactivated (factory setting).

1=buzzer activated.

Inverter (0=KEB1=MITSU) type

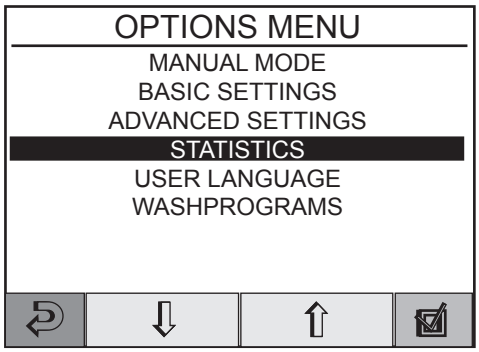
Frequency inverter management.

0=inverter KEB (factory setting).

1=inverter MITSU.

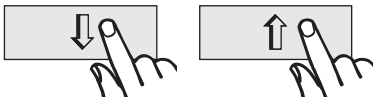
STATISTICS

Since the "OPTIONS MENU"



D1267

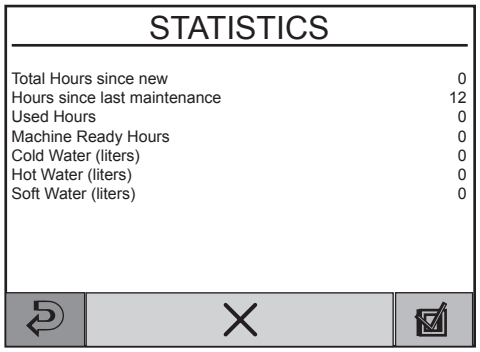
Select the **"STATISTICS"** menu



by pressing this keys.

Then valid.

"STATISTICS" display



D1578

To move back, press the :

"Valid" key

▶**"OPTIONS MENU"**

Otherwise,

push on **"Valid"** key

▶**"WASH HISTORIC"** menu (following page)

Reset the counters.

The «Statistics» function

The Statistics function gives you access to the following information :

Total hours since new

Shows the total operating time for the machine since it was installed.

Hours since last maintenance

This register shows the time elapsed since the last service. The register can also be used to generate a signal on the display to show when service is needed (see the section «Advanced settings» in the manual).

Used hours

Shows the total using time.

Machine ready hours

Shows the total using disponibility time.

Cold water (liters)

Cold water counter (0-65535 l).

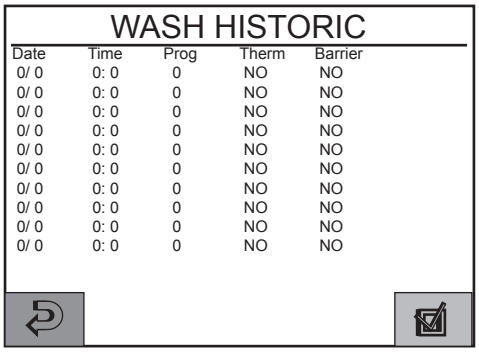
Hot water (liters)

Hot water counter (0-65535 l).

Soft water (liters)

Soft water counter (0-65535 l).

"WASH HISTORIC" menu



D1579

To escape, push on :

"Move back" key

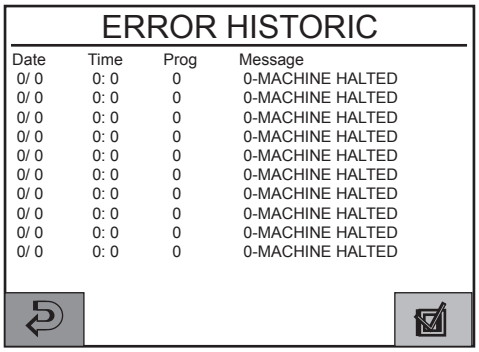
▶**"OPTIONS MENU"**

Otherwise,

push on **"Valid"** key

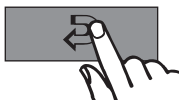
▶**"ERROR HISTORIC"** menu

"ERROR HISTORIC" menu



D1579

To escape, push on :



"Move back" key

▶**"OPTIONS MENU"**

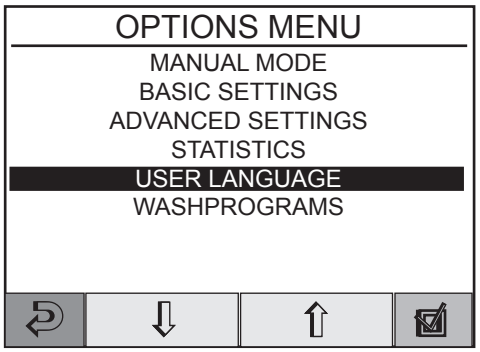
Otherwise,

push on **"Valid"** key

▶**"STATISTICS"** display (previous page)

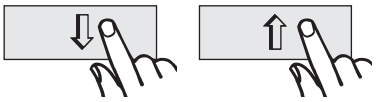
LANGUAGE SETTING

Since the "OPTIONS MENU"



D1267

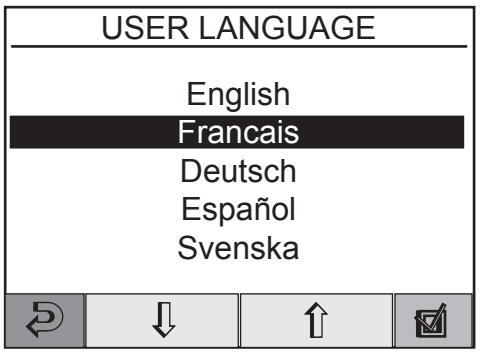
Select the **"USER LANGUAGE"** menu



by pressing this keys.

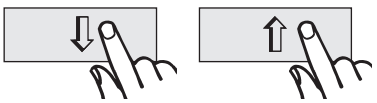
Then valid.

"USER LANGUAGE" menu



D1267

If another language is highlighted,



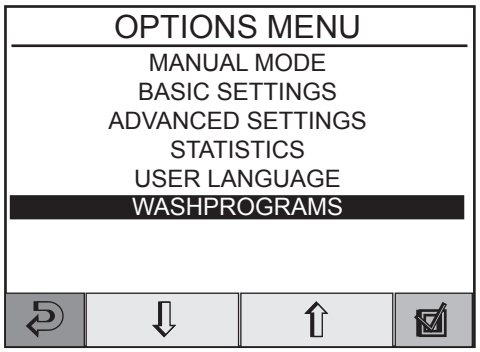
press this keys.

When the wished language is highlighted,

press this key.

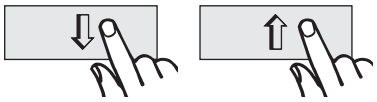
WASHPROGRAMS

Since the "OPTIONS MENU"



D1267

Select the **"WASHPROGRAMS"** menu



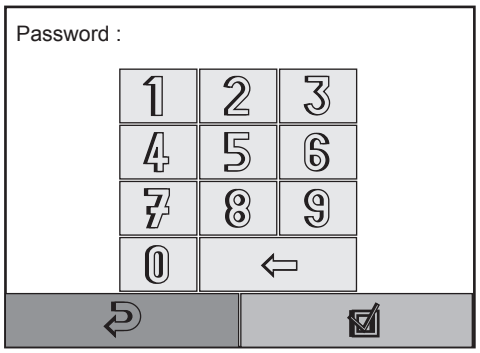
by pressing this keys.

Then valid.

"NUMERIC KEYBOARD" menu

Numeric keyboard

A password (a four-digit number), protects the access to the "Washprograms" functions.

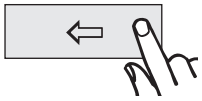


D1312

Compose the four number code with the numeric keys.

You can correct a bad capture

by pressing this key.

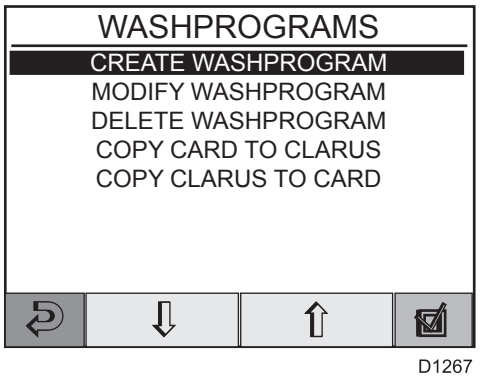


Then valid.

►**"WASHPROGRAMS"** menu (following page)

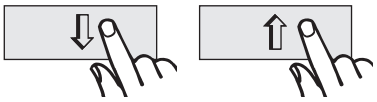
CREATE WASH PROGRAM

Since the "WASHPROGRAMS" menu



D1267

Select the **"CREATE WASH PROGRAM"** menu



by pressing this keys.

Then valid.

▶**"PROGRAM EDITION"** menu (following page)

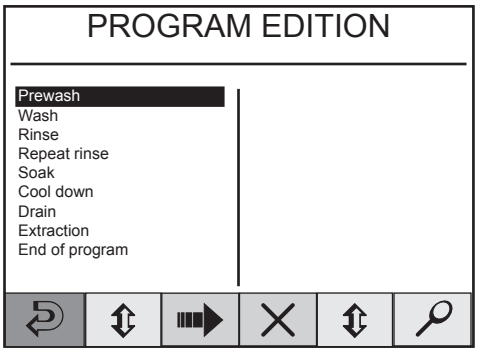
An introduction to programming

You can create a completely new wash program by programming a number of individual program modules which are arranged in a logical order to form a new program.

Wash programs can be programmed directly on the machine, via the PCU control panel, which is the method described in this manual. Wash programs can also be written on a personal computer and later transferred to the machine's PCU using a memory card. This option is described in a separate manual.

It is for you to decide which mode you wish to program in.

"PROGRAM EDITION" menu



D1456

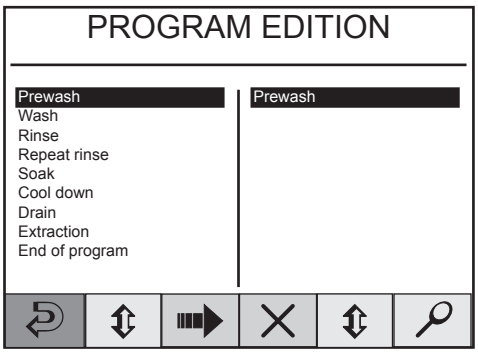
> ***Program edition***
>
> The «Program edition» display contains two parts.
>
> The left part proposes the different stages of a washprogram.
>
> The right part allows to select this stages to constitute a personalized program.
>
> The parameters of each stage are accessible and can be modified.

To escape, push on :

"Move back" key

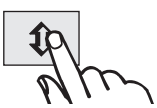
Allows to choose a program stage.

Allows to choose a stage.



D1456

Allows to delete a stage.

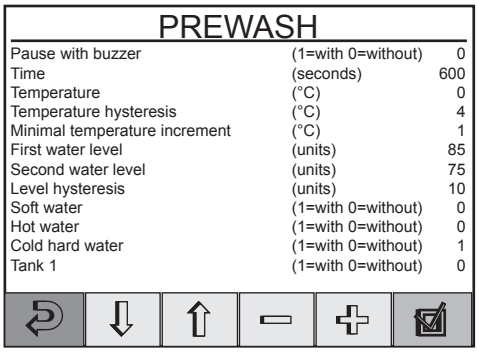


Allows to choose a stage for deleting.

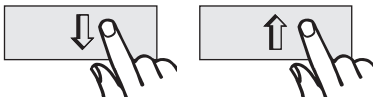
Allows to access the modifiable default values.

▶**"PROGRAM STAGE"** display (following page)

"PREWASH" stage



Select the wished function



by pressing this keys.

Decrease or increase the value

by pressing this keys.

Then valid.

▶**"PROGRAM EDITION"** menu

Prewash

Pause with buzzer

1=with, the washer extractor will stop and the buzzer will sound before the program module starts; 0=without, the program module will start without pause or buzzer.

Time

Adjusts the prewash time (from 0 to 9999 seconds).

Temperature

Adjusts the prewash temperature (from 0 to 99°C).

Temperature hysteresis

Temperature hysteresis is the number of degrees between the wash temperature and the temperature at which heating needs to restart (from 1 to 9°C).

Minimal temperature increment

This parameter, expressed in degrees per minute, is used to determine the rate at which the water may be heated to wash temperature (from 0 to 10°C).

If you program a too fast temperature increase which is to fast for the machine, the heating will be made without any interruptions.

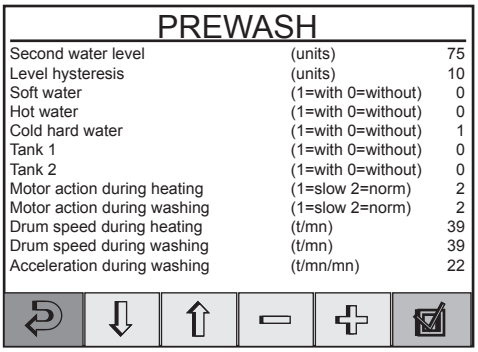
If the value is set to 0 the function is not activated and the heating is done without any interruptions.

First water level

After water is first added to a drum containing a dry load, the level always falls slightly because the load absorbs water.

For this reason you are able to program a «first level» (i.e. the initial filling level) which is slightly higher than the level used during the rest of the wash, to avoid a situation where the water has to be topped up repeatedly during the first part of the wash (from 0 to 200 units).

"PREWASH" stage



D1269

Prewash

Second water level

The «fill level» is measured in «scale units», which correspond to different water levels for different machines (from 0 to 200 units).

Level hysteresis

Once the drum has filled with water, the water level is monitored during both heating and washing.

If the water level falls below a certain level (which you determine using this function), more water will be added to achieve the correct level.

Level hysteresis is the number of «scale units» between the current water level set and the level at which filling (topping up) restarts (from 0 to 20 units).

Soft water

1=with, the drum will fill with cold water until the correct water level is reached; 0=without, no cold water filling.

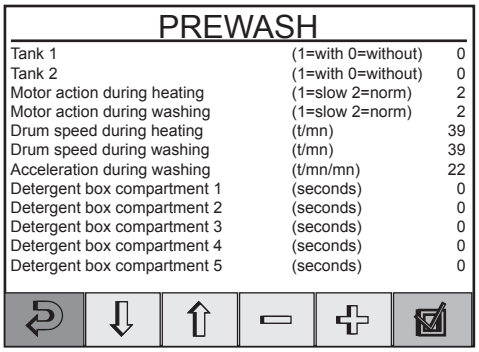
Hot water

1=with, the drumwill fill with hot water until the correct water level is reached. If only hot water valve is open and the water temperature is higher than the programmed, the cold water valve will automatically open to adjust the temperature. 0=without, no hot water filling.

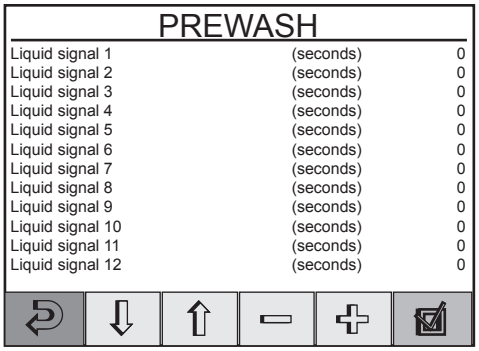
Cold hard water

1=with, the drum will fill with cold hard water until the correct water level is reached; 0=without, cold hard water will not be added.

"PREWASH" stage



D1269



D1269

Prewash

Tank 1/2

1=with, the drum will be filled from the specified tank (e.g. a tank for reuse of water or a special laundry product); 0=without, no filling from these sources.

Motor action during heating

Adjusts the motor action during heating (1=slow, 2=normal).

Motor action during washing

Adjusts the motor action during washing (1=slow, 2=normal).

Drum speed during heating

Adjusts the drum speed during heating (from 10 to 50 t/mn).

Drum speed during washing

Adjusts the drum speed during washing (from 10 to 50 t/mn).

Acceleration during washing

Allows to determine the rate of acceleration for the drum, i.e. the rpm per second at which its speed should increase until it reaches the speed you set (from 2 to 100 r/mn/mn).

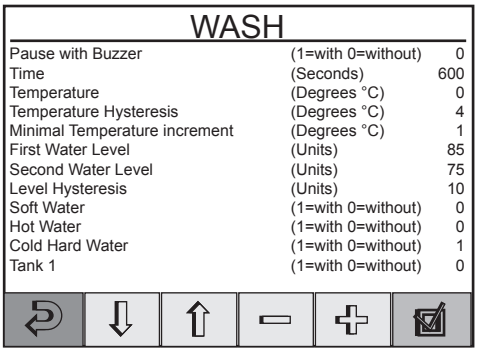
Detergent box compartment 1/2/3/4/5

Allows to determine the length of time water will be flushed through each individual compartment (from 0 to 251 seconds).

Liquid Signal 1/2/3/.../11/12/13

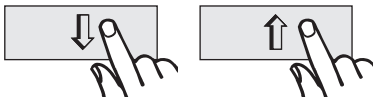
For machines with an external detergent supply system there are thirteen control signals which can open external supply valves for a specified time. The valves open for the time set, starting from when the water filling in the drum is finished (from 0 to 251 seconds).

"WASH" stage



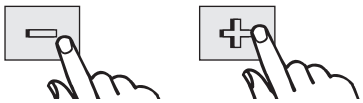
D1269

Select the wished function



by pressing this keys.

Decrease or increase the value



by pressing this keys.

Then valid.

▶**"PROGRAM EDITION"** menu

Wash

Pause with buzzer

1=with, the washer extractor will stop and the buzzer will sound before the program module starts; 0=without, the program module will start without pause or buzzer.

Time

Adjusts the prewash time (0 to 9999 seconds).

Temperature

Adjusts the prewash temperature (0 to 99°C).

Temperature hysteresis

Temperature hysteresis is the number of degrees between the wash temperature and the temperature at which heating needs to restart (1 to 9°C).

Minimal temperature increment

This parameter, expressed in degrees per minute, is used to determine the rate at which the water may be heated to wash temperature (0 to 10°C).

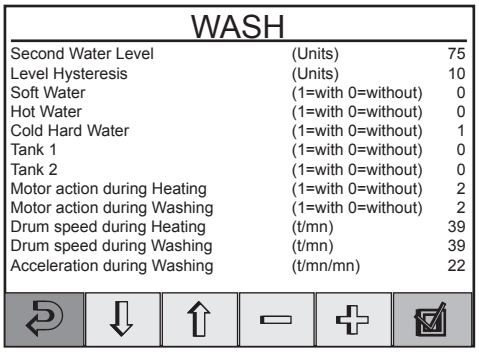
If you program a too fast temperature increase which is to fast for the machine, the heating will be made without any interruptions.

First water level

After water is first added to a drum containing a dry load, the level always falls slightly because the load absorbs water.

For this reason you are able to program a «first level» (i.e. the initial filling level) which is slightly higher than the level used during the rest of the wash, to avoid a situation where the water has to be topped up repeatedly during the first part of the wash (0 to 200 units).

"WASH" stage



D1269

Wash

Second water level

The «fill level» is measured in «scale units», which correspond to different water levels for different machines (0 to 200 units).

Level hysteresis

Once the drum has filled with water, the water level is monitored during both heating and washing.

If the water level falls below a certain level (which you determine using this function), more water will be added to achieve the correct level.

Level hysteresis is the number of «scale units» between the current water level set and the level at which filling (topping up) restarts (0 to 20 units).

Soft water

1=with, the drum will fill with cold water until the correct water level is reached; 0=without, no cold water filling.

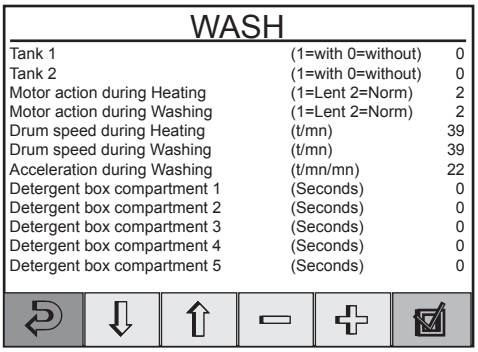
Hot water

1=with, the drumwill fill with hot water until the correct water level is reached. If only hot water valve is open and the water temperature is higher than the programmed, the cold water valve will automatically open to adjust the temperature. 0=without, no hot water filling.

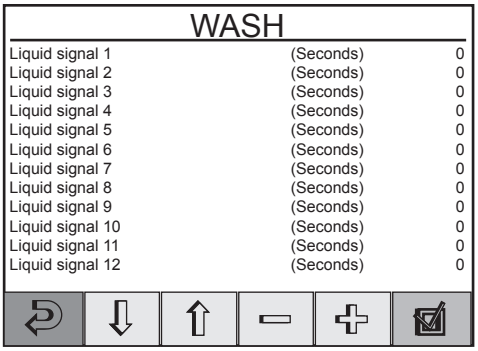
Cold hard water

1=with, the drum will fill with cold hard water until the correct water level is reached; 0=without, cold hard water will not be added.

"WASH" stage



D1269



D1269

Wash

Tank 1/2

1=with, the drum will be filled from the specified tank (e.g. a tank for reuse of water or a special laundry product); 0=without, no filling from these sources.

Motor action during heating

Adjusts the motor action during heating (1=slow, 2=normal).

Motor action during washing

Adjusts the motor action during washing (1=slow, 2=normal).

Drum speed during heating

Adjusts the drum speed during heating (10 to 50 t/mn).

Drum speed during washing

Adjusts the drum speed during washing (10 to 50 t/mn).

Acceleration during washing

Allows to determine the rate of acceleration for the drum, i.e. the rpm per second at which its speed should increase until it reaches the speed you set (from 2 to 100 r/mn/mn).

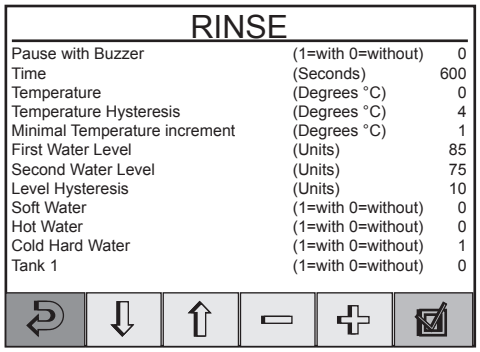
Detergent box compartment 1/2/3/4/5

Allows to determine the length of time water will be flushed through each individual compartment (from 0 to 251 seconds).

Liquid Signal 1/2/3/.../11/12/13

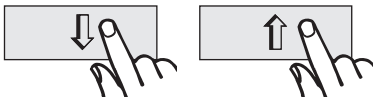
For machines with an external detergent supply system there are thirteen control signals which can open external supply valves for a specified time. The valves open for the time set, starting from when the water filling in the drum is finished (from 0 to 251 seconds).

"RINSE" stage



D1269

Select the wished function



by pressing this keys.

Decrease or increase the value

by pressing this keys.

Then valid.

▶**"PROGRAM EDITION"** menu

Rinse

Pause with buzzer

1=with, the washer extractor will stop and the buzzer will sound before the program module starts; 0=without, the program module will start without pause or buzzer.

Time

Adjusts the prewash time (from 0 to 9999 seconds).

Temperature

Adjusts the prewash temperature (from 0 to 99°C).

Temperature hysteresis

Temperature hysteresis is the number of degrees between the wash temperature and the temperature at which heating needs to restart (from 1 to 9°C).

Minimal temperature increment

This parameter, expressed in degrees per minute, is used to determine the rate at which the water may be heated to wash temperature (from 0 to 10°C).

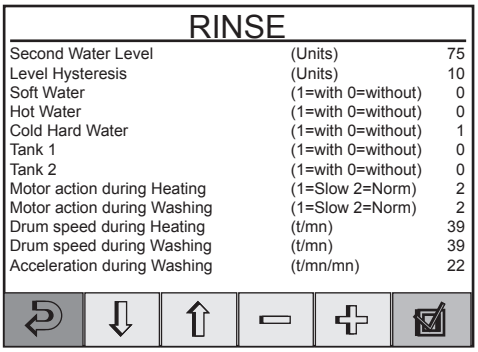
If you program a too fast temperature increase which is to fast for the machine, the heating will be made without any interruptions.

First water level

After water is first added to a drum containing a dry load, the level always falls slightly because the load absorbs water.

For this reason you are able to program a «first level» (i.e. the initial filling level) which is slightly higher than the level used during the rest of the wash, to avoid a situation where the water has to be topped up repeatedly during the first part of the wash (from 0 to 200 units).

"RINSE" stage



D1269

Rinse

Second water level

The «fill level» is measured in «scale units», which correspond to different water levels for different machines (from 0 to 200 units).

Level hysteresis

Once the drum has filled with water, the water level is monitored during both heating and washing.

If the water level falls below a certain level (which you determine using this function), more water will be added to achieve the correct level.

Level hysteresis is the number of «scale units» between the current water level set and the level at which filling (topping up) restarts (from 0 to 20 units).

Soft water

1=with, the drum will fill with cold water until the correct water level is reached; 0=without, no cold water filling.

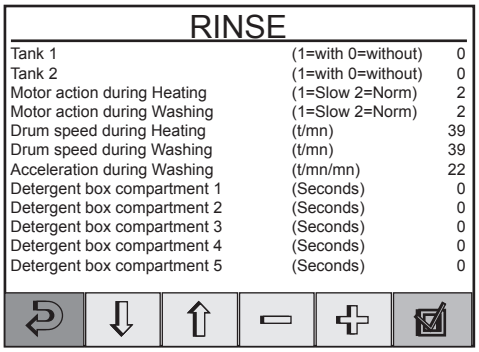
Hot water

1=with, the drumwill fill with hot water until the correct water level is reached. If only hot water valve is open and the water temperature is higher than the programmed, the cold water valve will automatically open to adjust the temperature. 0=without, no hot water filling.

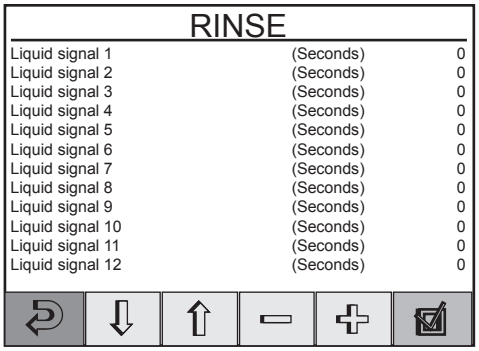
Cold hard water

1=with, the drum will fill with cold hard water until the correct water level is reached; 0=without, cold hard water will not be added.

"RINSE" stage



D1269



D1269

Rinse

Tank 1/2

1=with, the drum will be filled from the specified tank (e.g. a tank for reuse of water or a special laundry product); 0=without, no filling from these sources.

Motor action during heating

Adjusts the motor action during heating (1=slow, 2=normal).

Motor action during washing

Adjusts the motor action during washing (1=slow, 2=normal).

Drum speed during heating

Adjusts the drum speed during heating (from 10 to 50 t/mn).

Drum speed during washing

Adjusts the drum speed during washing (from 10 to 50 t/mn).

Acceleration during washing

Allows to determine the rate of acceleration for the drum, i.e. the rpm per second at which its speed should increase until it reaches the speed you set (from 2 to 100 r/mn/mn).

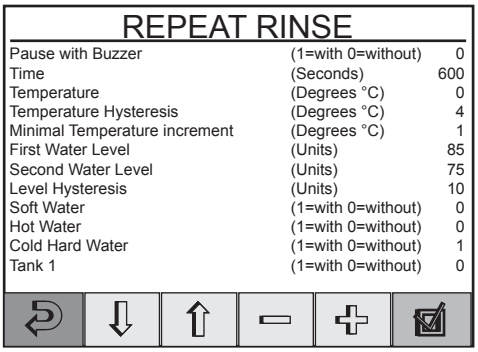
Detergent box compartment 1/2/3/4/5

Allows to determine the length of time water will be flushed through each individual compartment (from 0 to 251 seconds).

Liquid Signal 1/2/3/.../11/12/13

For machines with an external detergent supply system there are thirteen control signals which can open external supply valves for a specified time. The valves open for the time set, starting from when the water filling in the drum is finished (from 0 to 251 seconds).

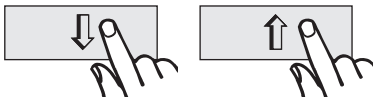
"REPEAT RINSE" stage



D1269

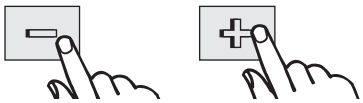
Select the wished function

by pressing this keys.



Decrease or increase the value

by pressing this keys.



Then valid.

▶**"PROGRAM EDITION"** menu

Repeat rinse

Pause with buzzer

1=with, the washer extractor will stop and the buzzer will sound before the program module starts; 0=without, the program module will start without pause or buzzer.

Time

Adjusts the prewash time (0 to 9999 seconds).

Temperature

Adjusts the prewash temperature (0 to 99°C).

Temperature hysteresis

Temperature hysteresis is the number of degrees between the wash temperature and the temperature at which heating needs to restart (1 to 9°C).

Minimal temperature increment

This parameter, expressed in degrees per minute, is used to determine the rate at which the water may be heated to wash temperature (0 to 10°C).

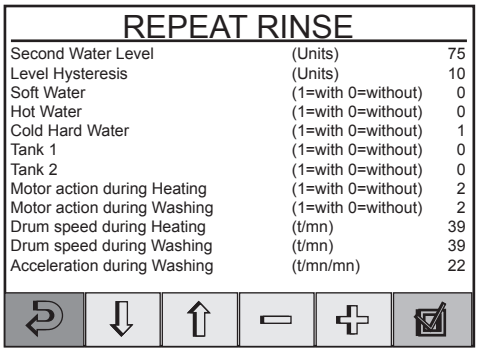
If you program a too fast temperature increase which is to fast for the machine, the heating will be made without any interruptions.

First water level

After water is first added to a drum containing a dry load, the level always falls slightly because the load absorbs water.

For this reason you are able to program a «first level» (i.e. the initial filling level) which is slightly higher than the level used during the rest of the wash, to avoid a situation where the water has to be topped up repeatedly during the first part of the wash (0 to 200 units).

"REPEAT RINSE" stage



D1269

Repeat rinse

Second water level

The «fill level» is measured in «scale units», which correspond to different water levels for different machines (0 to 200 units).

Level hysteresis

Once the drum has filled with water, the water level is monitored during both heating and washing.

If the water level falls below a certain level (which you determine using this function), more water will be added to achieve the correct level.

Level hysteresis is the number of «scale units» between the current water level set and the level at which filling (topping up) restarts (0 to 20 units).

Soft water

1=with, the drum will fill with cold water until the correct water level is reached; 0=without, no cold water filling.

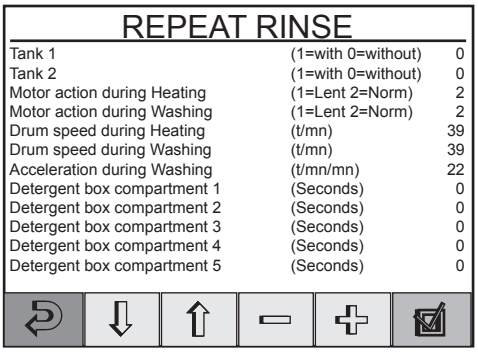
Hot water

1=with, the drumwill fill with hot water until the correct water level is reached. If only hot water valve is open and the water temperature is higher than the programmed, the cold water valve will automatically open to adjust the temperature. 0=without, no hot water filling.

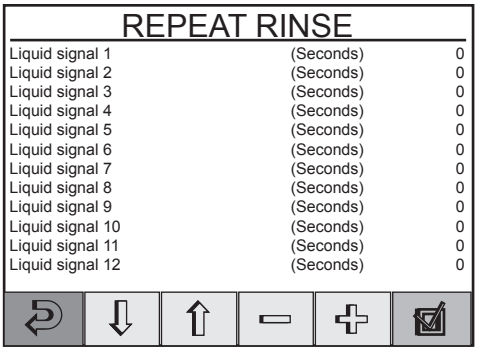
Cold hard water

1=with, the drum will fill with cold hard water until the correct water level is reached; 0=without, cold hard water will not be added.

"REPEAT RINSE" stage



D1269



D1269

Repeat rinse

Tank 1/2

1=with, the drum will be filled from the specified tank (e.g. a tank for reuse of water or a special laundry product); 0=without, no filling from these sources.

Motor action during heating

Adjusts the motor action during heating (1=slow, 2=normal).

Motor action during washing

Adjusts the motor action during washing (1=slow, 2=normal).

Drum speed during heating

Adjusts the drum speed during heating (10 to 50 t/mn).

Drum speed during washing

Adjusts the drum speed during washing (10 to 50 t/mn).

Acceleration during washing

Allows to determine the rate of acceleration for the drum, i.e. the rpm per second at which its speed should increase until it reaches the speed you set (from 2 to 100 r/mn/mn).

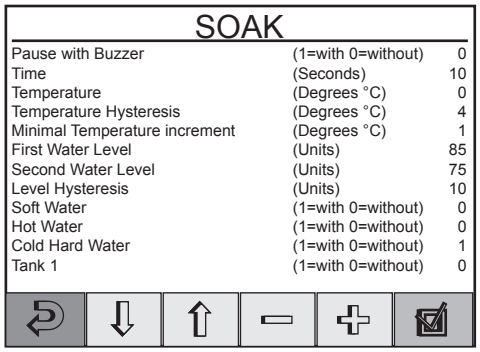
Detergent box compartment 1/2/3/4/5

Allows to determine the length of time water will be flushed through each individual compartment (from 0 to 251 seconds).

Liquid Signal 1/2/3/.../11/12/13

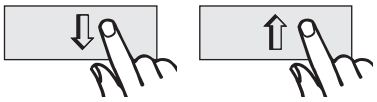
For machines with an external detergent supply system there are thirteen control signals which can open external supply valves for a specified time. The valves open for the time set, starting from when the water filling in the drum is finished (from 0 to 251 seconds).

"SOAK" stage

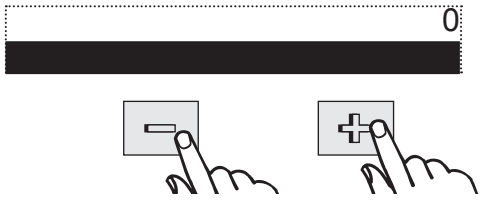


D1269

Select the wished function



by pressing this keys.



Decrease or increase the value

by pressing this keys.

Then valid.

▶**"PROGRAM EDITION"** menu

Soak

Pause with buzzer

1=with, the washer extractor will stop and the buzzer will sound before the program module starts; 0=without, the program module will start without pause or buzzer.

Time

Adjusts the prewash time (from 0 to 9999 seconds).

Temperature

Adjusts the prewash temperature (from 0 to 99°C).

Temperature hysteresis

Temperature hysteresis is the number of degrees between the wash temperature and the temperature at which heating needs to restart (from 1 to 9°C).

Minimal temperature increment

This parameter, expressed in degrees per minute, is used to determine the rate at which the water may be heated to wash temperature (from 0 to 10°C).

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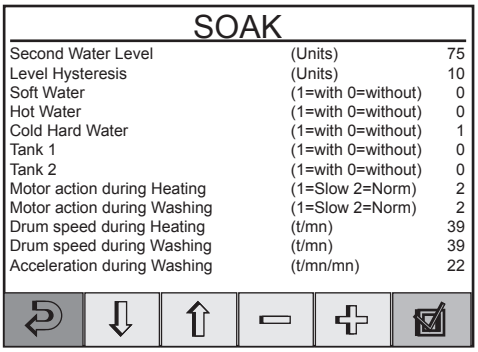
First water level

After water is first added to a drum containing a dry load, the level always falls slightly because the load absorbs water.

For this reason you are able to program a «first level» (i.e. the initial filling level) which is slightly higher than the level used during the rest of the wash, to avoid a situation where the water has to be topped up repeatedly during the first part of the wash (from 0 to 200 units).

"SOAK" stage



D1269

Soak

Second water level

The «fill level» is measured in «scale units», which correspond to different water levels for different machines (from 0 to 200 units).

Level hysteresis

Once the drum has filled with water, the water level is monitored during both heating and washing.

If the water level falls below a certain level (which you determine using this function), more water will be added to achieve the correct level.

Level hysteresis is the number of «scale units» between the current water level set and the level at which filling (topping up) restarts (from 0 to 20 units).

Soft water

1=with, the drum will fill with cold water until the correct water level is reached; 0=without, no cold water filling.

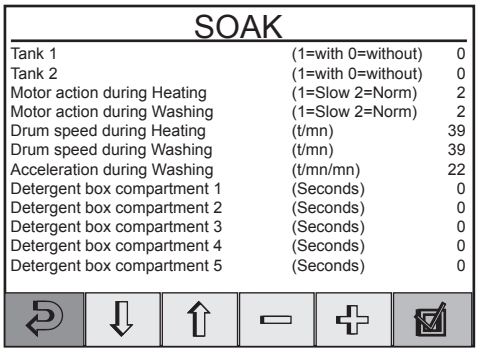
Hot water

1=with, the drumwill fill with hot water until the correct water level is reached. If only hot water valve is open and the water temperature is higher than the programmed, the cold water valve will automatically open to adjust the temperature. 0=without, no hot water filling.

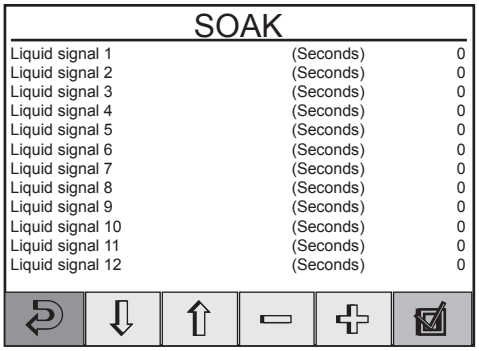
Cold hard water

1=with, the drum will fill with cold hard water until the correct water level is reached; 0=without, cold hard water will not be added.

"SOAK" stage



D1269



D1269

Soak

Tank 1/2

1=with, the drum will be filled from the specified tank (e.g. a tank for reuse of water or a special laundry product); 0=without, no filling from these sources.

Motor action during heating

Adjusts the motor action during heating (1=slow, 2=normal).

Motor action during washing

Adjusts the motor action during washing (1=slow, 2=normal).

Drum speed during heating

Adjusts the drum speed during heating (from 10 to 50 t/mn).

Drum speed during washing

Adjusts the drum speed during washing (from 10 to 50 t/mn).

Acceleration during washing

Allows to determine the rate of acceleration for the drum, i.e. the rpm per second at which its speed should increase until it reaches the speed you set (from 2 to 100 r/mn/mn).

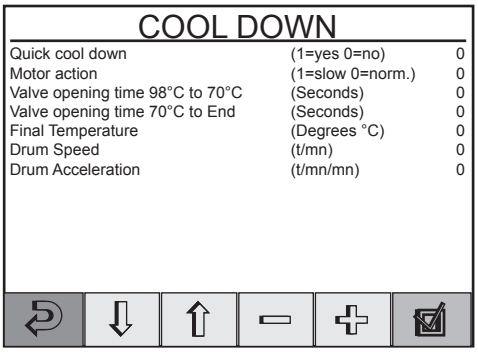
Detergent box compartment 1/2/3/4/5

Allows to determine the length of time water will be flushed through each individual compartment (from 0 to 251 seconds).

Liquid Signal 1/2/3/.../11/12/13

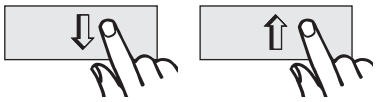
For machines with an external detergent supply system there are thirteen control signals which can open external supply valves for a specified time. The valves open for the time set, starting from when the water filling in the drum is finished (from 0 to 251 seconds).

"COOL DOWN" stage

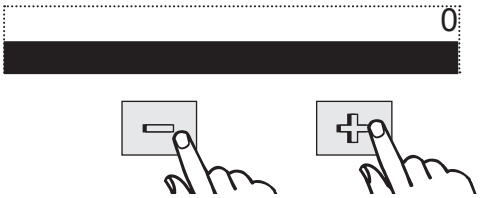


D1269

Select the wished function



by pressing this keys.



Decrease or increase the value

by pressing this keys.

Then valid.

▶**"PROGRAM EDITION"** menu

Cool down

Quick cool down

If you answer 1 (yes) :

The machine will fill with cold water to a fixed higher level. The machine does not monitor the drop in temperature of the wash water. This function is used mainly for reducing the temperature of the water before it is discharged.

Do not use this function to prevent creasing of the wash load.

If you answer 0 (no) :

The machine makes a controlled cool down as described earlier.

Motor action

Allows you to determine drum action during cool-down (1=slow, 2=normal).

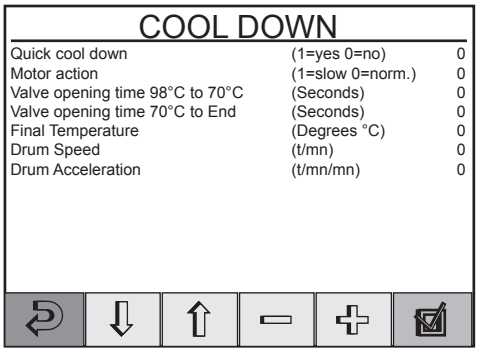
Valve opening time 98°C to 70°C

You program the length of time during which the cold water valve opens every 30 seconds, but the machine monitors constantly to ensure that the cool-down rate does not exceed the limit value, which is 4°C/minute when the machine is delivered. If the limit value is exceeded, no water will be added until the mean value is acceptable again (from 1 to 30 seconds).

Valve opening time 70°C to End

You program the length of time during which the cold water valve opens every 30 seconds. The rate of cool-down is not monitored during this stage. The valve opens and closes depending on the programming mode (from 1 to 30 seconds).

"COOL DOWN" stage



D1269

Cool down

Final Temperature

Enter the temperature you require for the water at the end of cool-down (from 1 to 90°C).

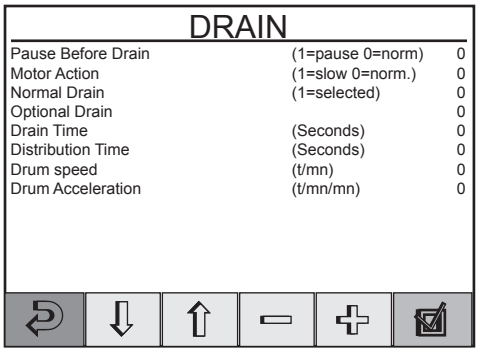
Drum Speed

You can determine the drum speed during cool-down (from 10 to 50 t/mn).

Drum Acceleration

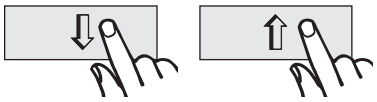
This function allows you to determine the rate of acceleration for the drum, i.e. the rpm per second at which its speed should increase until it reaches the speed you set in the last function (from 2 to 10 t/mn/mn).

"DRAIN" stage

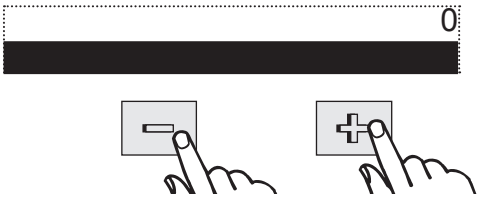


D1269

Select the wished function



by pressing this keys.



Decrease or increase the value

by pressing this keys.

Then valid.

▶**"PROGRAM EDITION"** menu

Drain

Pause before drain

If you answer 1=pause :

The washer extractor will stop and the buzzer will sound before the drain opens.

If you answer 0=normal :

The program module starts, with no pause.

Motor action

Allows you to determine drum action during drain (1=slow, 2=normal).

Normal drain

The drain will be open. The motor may be at a standstill, on gentle action. During this time the drum water will be discharged (1=selected).

Optional drain

Actually out of service (2=A 4=B 8=C 16=D).

Drain time

Here you can determine the drain time (from 0 to 250 seconds).

Distribution time

Here you can determine the length of time the drum operates at distribution speed (from 0 to 250 seconds).

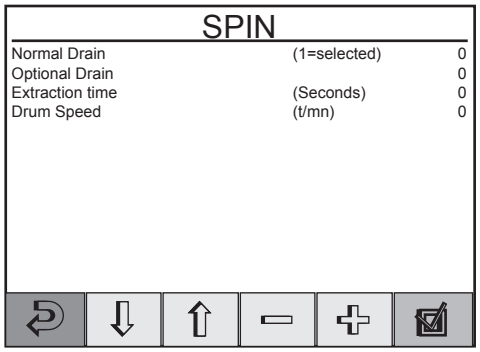
Drum speed

Here you can detemine the drum action during the time programmed for the drain cycle (from 10 to 50 t/mn).

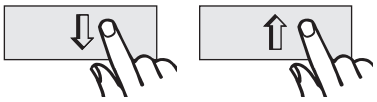
Drum acceleration

This function allows you to determine the rate of acceleration for the drum, i.e. the rpm per second at which its speed should increase until it reaches the speed you set in the last function (from 2 to 10 t/mn/mn).

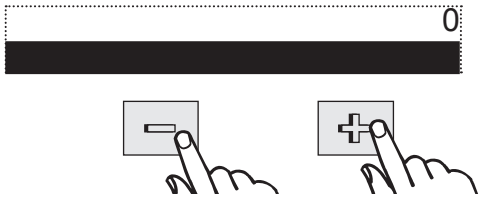
"SPIN" stage



Select the wished function

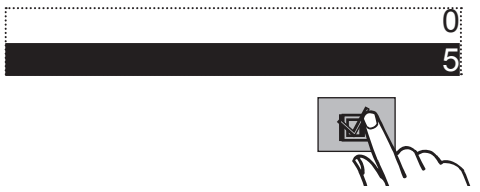


by pressing this keys.



Decrease or increase the value

by pressing this keys.



Then valid.

▶**"PROGRAM EDITION"** menu

Spin

Normal drain

The drain will be open. The motor may be at a standstill, on gentle action. During this time the drum water will be discharged (1=selected).

Optional drain

Actually out of service.

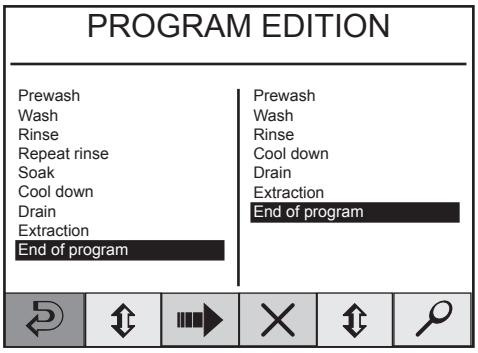
Extraction time

The period during which the drum is reaching its correct speed is not included in the extraction time (from 0 to 900 seconds).

Drum speed

Here you can detemine the drum action during the time programmed for the spin cycle (from 127 to 710 t/mn).

"END OF PROGRAM" stage



D1456

Select **"End of program"**.

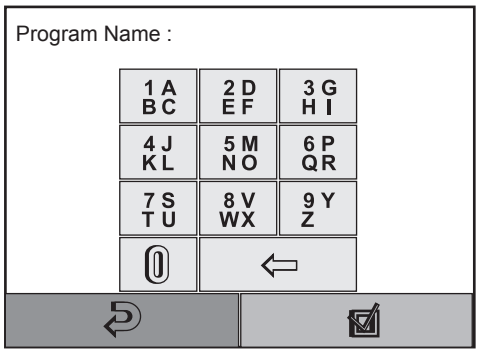
To valid, press the :

"Selection" key

Program edition

The «End of program» stage is necessary to valid the created program.

"NUMERIC KEYBOARD" menu

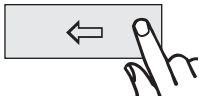


D1512

Compose your program name with the numeric keys, by pressing 1, 2 or 3 times on each key.

Program Name : FF_

You can correct a bad capture



by pressing this key.

Program Name : F_

Then valid.

Numeric keyboard

A numeric keyboard allows to give a program name (formed by letters).

Each of the numeric keys gives access to several characters as follows :

1 : abc	2 : def	3 : ghi
4 : jkl	5 : mno	6 : pqr
7 : stu	8 : vwx	9 : yz
0 :		

The first time you press a given key, the first character available through that key will appear on the display. One press on **1** produces **A**. One press on **2** produces **D**.

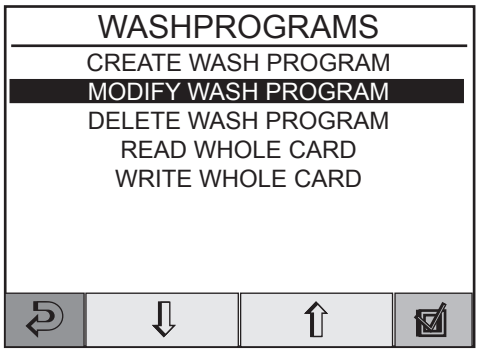
Simply press the relevant key the required number of times until the character you want appears on the display. For example, to insert the letter **C**, press key **1** three times. To insert **F**, press **2** three times.

When the character you want is on the display, wait a minute the cursor sets after.

▶**"WASHPROGRAMS"** menu

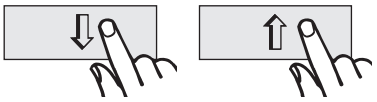
MODIFY WASH PROGRAM

Since the "WASHPROGRAMS" menu



D1267

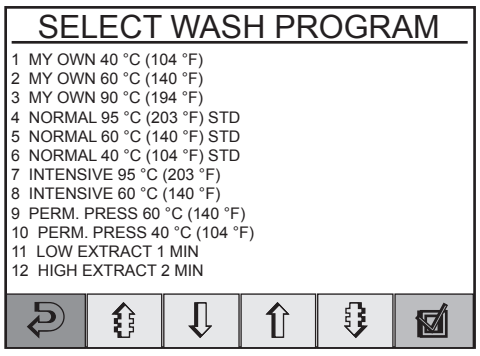
Select the **"MODIFY WASH PROGRAM"** menu



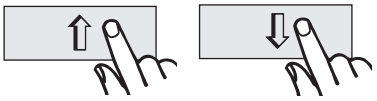
by pressing this keys.

Then valid.

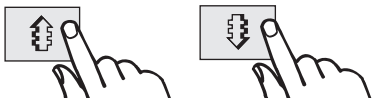
"SELECT WASH PROGRAM" menu



D1314



Allows to choose the program.



Previous and following page.

To enter, push on :

"Valid" key

An introduction to programming

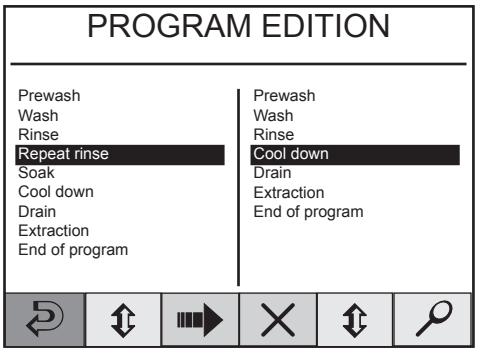
You can create a new program on the basis of an existing one by modifying, adding and deleting program modules, then saving the new program.

Wash programs can be programmed directly on the machine, via the PCU control panel, which is the method described in this manual. Wash programs can also be written on a personal computer and later transferred to the machine's PCU using a memory card. This option is described in a separate manual.

It is for you to decide which mode you wish to program in.

►**"PROGRAM EDITION"** menu (following page)

"PROGRAM EDITION" menu



D1456

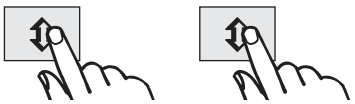
Program edition

The modification of a washprogram is realized in the same way than the creation.

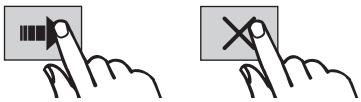
The parameters of each stage are accessible and can be modified.

The left part proposes the different washprogram stages which could be added.

The right part allows to select the stages which could be deleted.

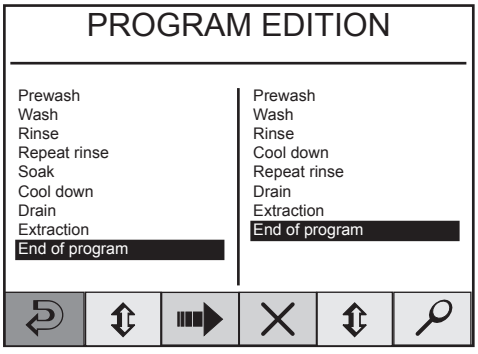


Allows to choose a stage for adding or deleting.



Allows to add or to delete a stage.

"END OF PROGRAM" stage



D1456

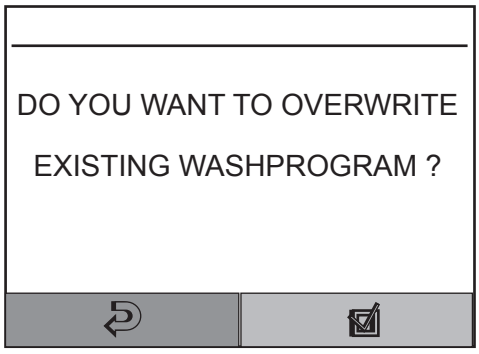
Select «End of program».

To valid, press the :

"Selection" key

▶**"KILL THE EXISTING PROGRAM"** display (following page)

"KILL THE EXISTING PROGRAM"



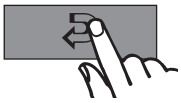
D1313

Kill an existing program

When the validation executed, the previous program is definitely lost and replaced by the new one.

the existing program ?

To escape, push on :



"Move back" key

▶**"PROGRAM EDITION"** menu (previous page)

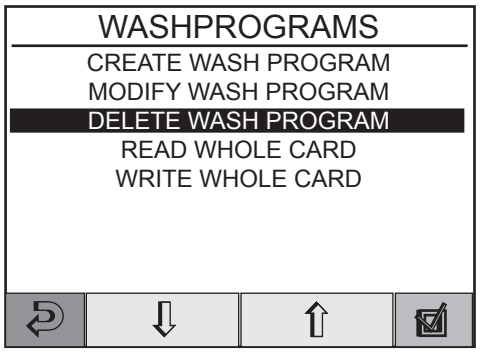
Otherwise, push on :

"Valid" key

▶**"WASHPROGRAMS"** menu

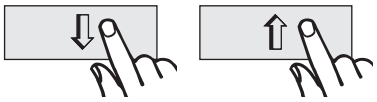
DELETE WASH PROGRAM

Since the "WASHPROGRAMS" menu



D1267

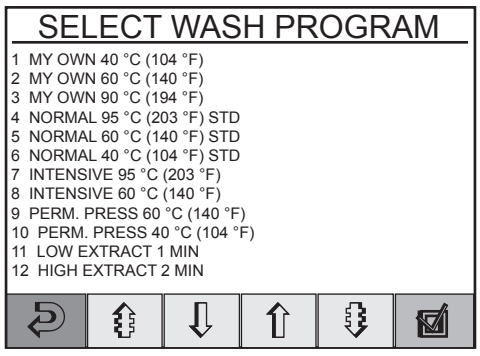
Select the **"DELETE WASH PROGRAM"** menu



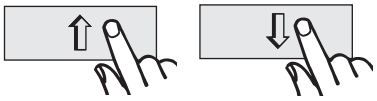
by pressing this keys.

Then valid.

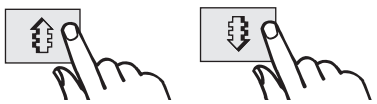
"SELECT WASH PROGRAM" menu



D1314



Allows to choose the program.



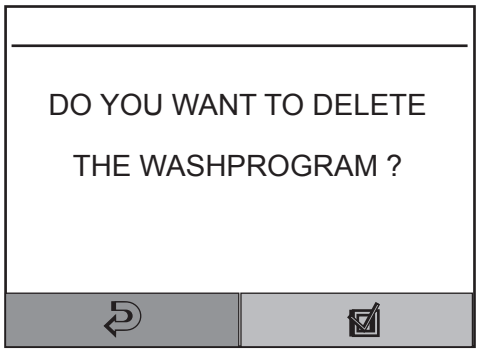
Previous and following page.

To enter, push on :

"Valid" key

▶**"DELETE THE WASHPROGRAM"** display (following page)

"DELETE THE WASHPROGRAM" display



D1313

Delete a washprogram

When the validation is executed, the program is definitely deleted.

To escape, push on :

"Move back" key

▶**"SELECT WASH PROGRAM"** menu (previous page)

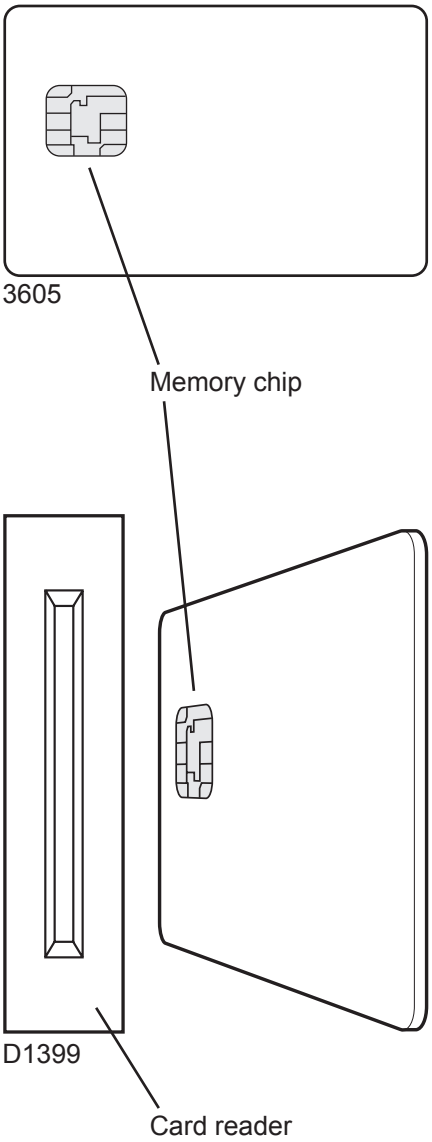
Otherwise, push on :

"Valid" key

▶**"WASHPROGRAMS"** menu

CARD READER

Memory card



Turn the memory card so its memory chip is at the far end and on the left of the card...

...then insert the memory card into the program control unit.

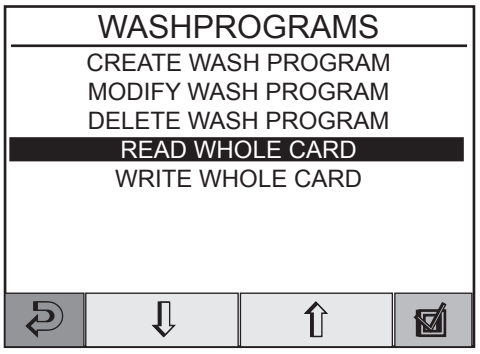
Memory card

A «memory card» is a plastic card, the size of a credit card, with an electronic memory chip inside it. This memory card is capable of storing 10 to 15 wash programs of normal size. If the programs are mostly small ones, more of them can be stored, whereas larger programs will reduce the number which can be held by the memory card. Memory cards of this type can be used to :

- Transfer wash programs from a PC to a memory card and from a memory card to a PC.
- Transfer wash programs from a memory card to a machine and from a machine to a memory card.

CARD READER

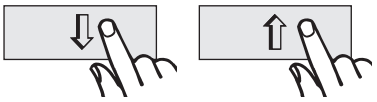
Since the "WASHPROGRAMS" menu



D1267

Select the **"READ WHOLE CARD"** menu

by pressing this keys.



Then valid.

"CARD READER" display

Card reading. Wait !

After pushing on **"Valid"** key, the opposite display appears. So the card is read**.**

What happens when a program is copied ?

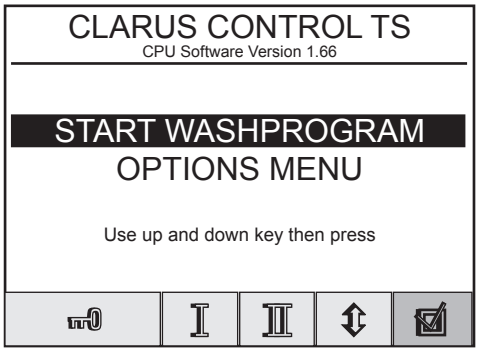
Both the memory card and the program control unit have memory chips capable of storing wash programs. The chip on the card can hold about 10 to 15 programs of normal size, while the chip in the program control unit has a capacity of several hundred programs.

When a program is copied from a memory card to the machine's program control unit, it is copied, not moved (not deleted from the card). A copy is transferred from the chip on the memory card to the storage chip of the machine program control unit.

The program remains on the memory card, but another copy of it has now been stored in the program control unit.

►**"CLARUS CONTROL TS"** menu

To start the wash program

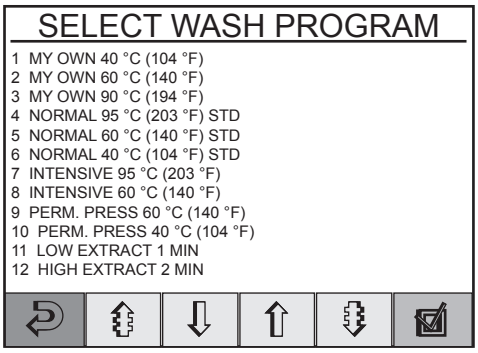


D1266

After returning to the «CLARUS CONTROL TS» menu, run a wash program as already shown on the section «To start the wash program» p.6/4.

▶**"SELECT WASH PROGRAM"** menu

"SELECT WASH PROGRAM" menu



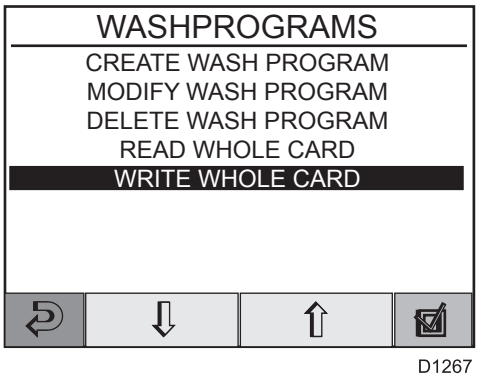
D1314

The microprocessor card can be removed from the drive and you can then choose a wash program from those saved on the machine.

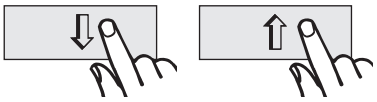
▶**"DELAYED START"** menu

CARD WRITING

Since the "WASHPROGRAMS" menu



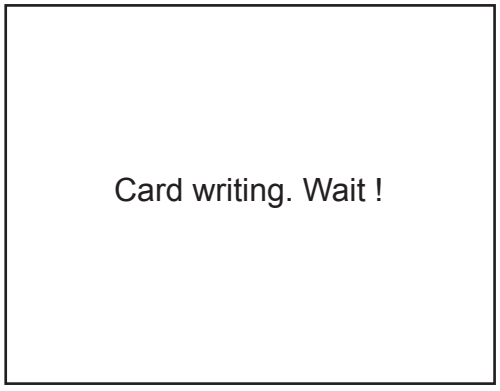
Select the **"WRITE WHOLE CARD"** menu



by pressing this keys.

Then valid.

Menu "CARD WRITING"



After pushing on **"Valid"** key, the opposite display appears. So the card is written.

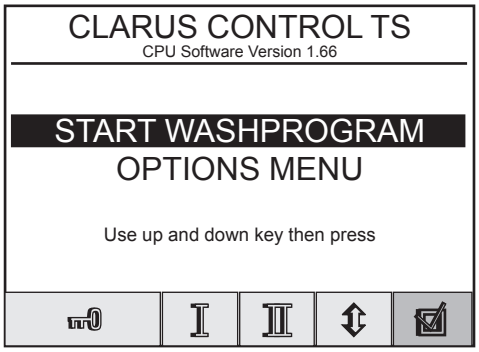
What happens when a program is copied ?

Both the memory card and the program control unit have memory chips capable of storing wash programs. The chip on the card can hold about 10 to 15 programs of normal size, while the chip in the program control unit has a capacity of several hundred programs.

When a program is copied from the machine's program control unit to a memory card, it is copied, not moved (not deleted from the program control unit). A copy is transferred from the storage chip of the machine program control unit to the chip on the memory card.

The program remains on the program control unit, but another copy of it has now been stored in the memory card.

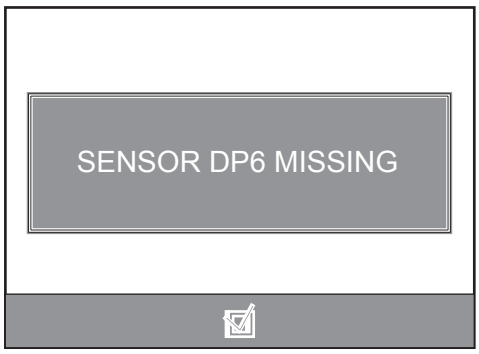
"CLARUS CONTROL TS" menu



D1266

The microprocessor card can be removed from the drive and you can then use on another machine, a wash program from those saved on the card.

"DP6 SENSOR MISSING" display



D1270

When the error is cleared, push on :

"Valid" key

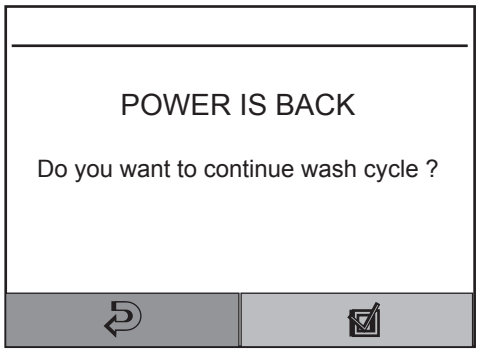
DP6 sensor

The DP6 sensor is located on the opening tappet of the unlaoding door. The error releasing indicates the tappet has not correctly come back and this can product dangerous running.

The problem must be cleared up immediately.

▶**"CLARUS CONTROL TS"** menu

"POWER IS BACK" display



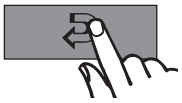
D1313

Power is back

If a power outage occurs during the execution of a program, or the main switch is moved to the «Off» position, the screen opposite is displayed after power returns or the main switch is moved to the «On» position.

To escape the program,

press **"Move back"** key



▶**"CLARUS CONTROL TS"** menu

To continue wash cycle,

press the **"Valid"** key

▶**"OPERATING CYCLE"** display

Conversion table, water level

Machine 700

Scale units	Quantity of water (litres)	Water level* (mm)	Number of loaded liters: Cotton l/kg	Sponge l/kg	Poly/C l/kg
		Unladen			
10	8				
20	16				
30	24				
40	31				
50	43	15			
55	50	30			
60	57	45			
65	67	62			
70	74	75	3	4.1	2.7
75	84	93			
80	95	109			
85	107	125			
90	118	141			
95	130	157			
100	142	172			
105	156	192			
110	166	203			
115	180	222	4.8	5.6	4.2
120	190	233			
125	205	252			
130	218	267			
135	231	282			
140	253	300	5.6	6.1	5
145	268	315			
150	286	330			
200	450	495			

*Distance above bottom of inner drum

Conversion table, water level

Machine 900

Scale units	Quantity of water (litres)	Unladen Water level* (mm)	Number of loaded liters Cotton l/kg	Sponge l/kg	Poly/C l/kg
10	10				
20	20				
35	30				
43	40				
50	50				
56	60				
61	70	44			
66	80	60			
71	90	75	3	4.1	2.7
75	100	84			
79	110	104			
83	120	110			
87	130	123			
91	140	135			
94	150	146			
98	160	160			
109	190	190			
115	225	222	5.1	5.4	4.2
129	250	275			
136	275	275			
140	290	288	5.6	6.1	5
143	300	295			
150	325	315			
168	400	370			
225	660				

*Distance above bottom of inner drum

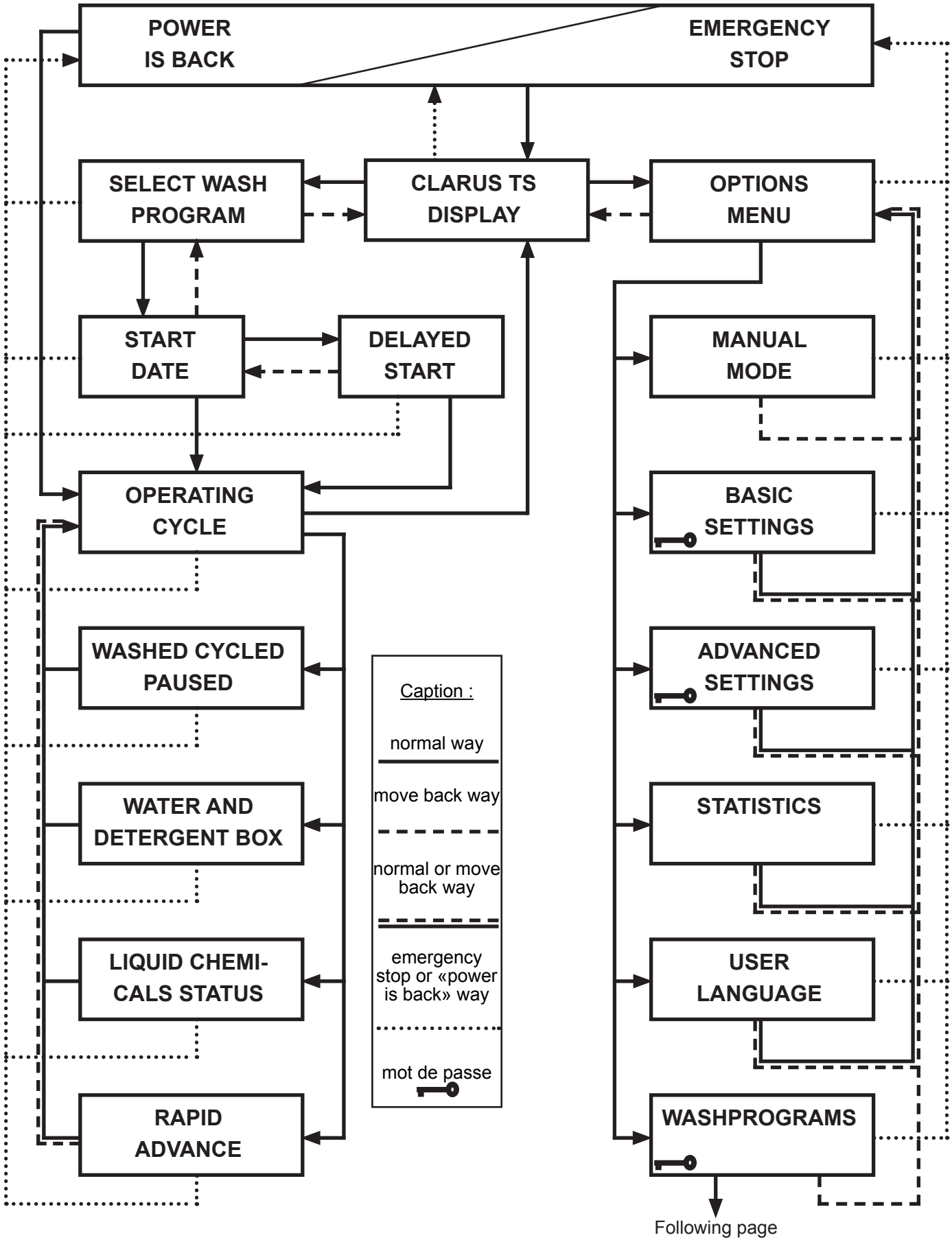
Conversion table, water level

Machine 1100

Scale units	Unladen: Quantity of water (liters)	Unladen: Water level* (mm)	Number of loaded liters: Cotton l/kg	Number of loaded liters: Sponge l/kg	Number of loaded liters: Poly/C l/kg
12	10				
26	20				
37	30				
44	40				
50	50				
56	60	22			
60	70	35			
65	80	46			
68	90	60	3	4.4	2.6
72	100	69			
75	110	82			
78	120	94			
82	130	100			
85	140	112			
89	150	124			
92	160	132			
95	170	142			
98	180	151			
101	190	158			
103	200	167			
110	225	189			
117	250	210	5	5.65	4.3
123	275	230			
126	290	240			
129	300	254			
135	325	270			
140	350	287	5.9	6.1	5.1
149	400	315			
219	735	530	overflowing level		

*Distance above bottom of inner drum

Diagram of Clarus TS menus



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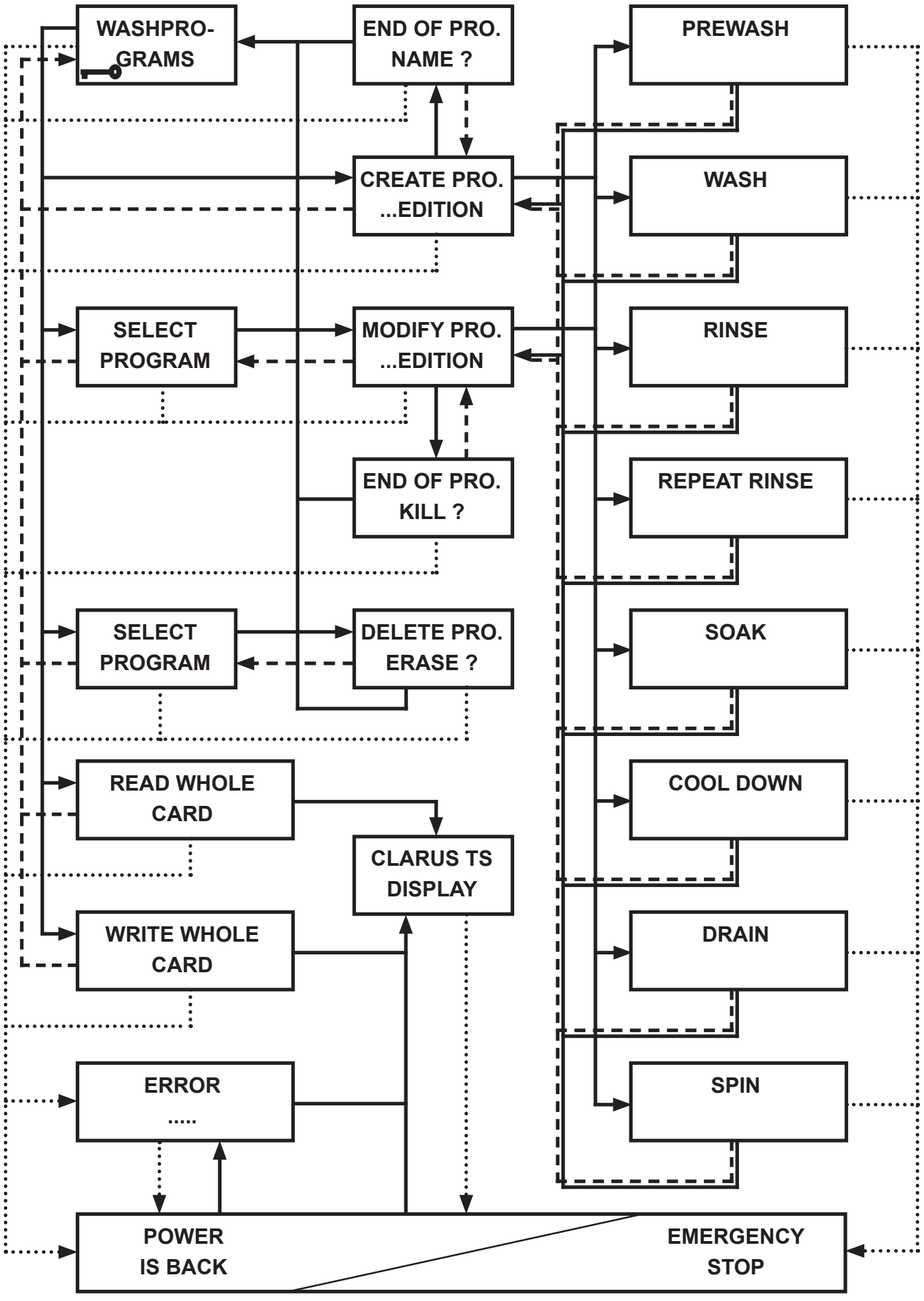
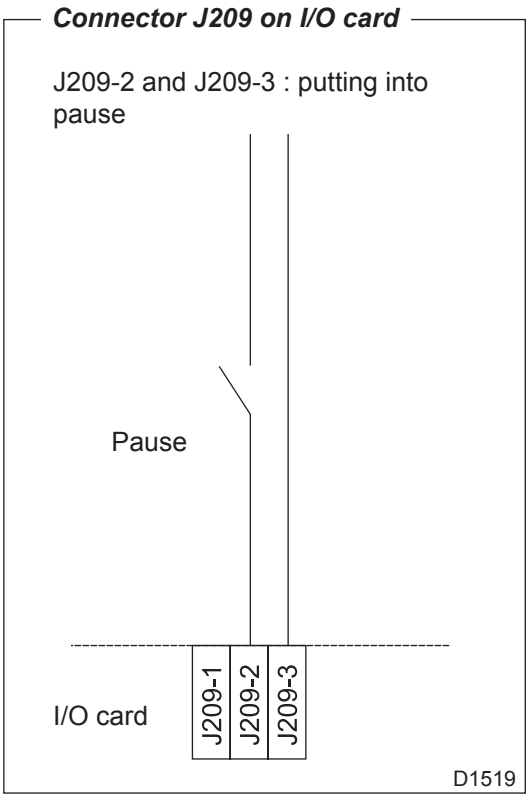

WASHPRO-GRAMS
END OF PRO. NAME ?
PREWASH
CREATE PRO. ...EDITION
WASH
SELECT PROGRAM
MODIFY PRO. ...EDITION
RINSE
END OF PRO. KILL ?
REPEAT RINSE
SELECT PROGRAM
DELETE PRO. ERASE ?
SOAK
READ WHOLE CARD
COOL DOWN
CLARUS TS DISPLAY
WRITE WHOLE CARD
DRAIN
ERROR .....
SPIN
POWER IS BACK
EMERGENCY STOP

Function «Servo-control pause» by exterior signals

Description

During a program, a servo-control pause function can be used to vary the heating or the starting of a machine in comparison to another by using an exterior signal (electric signal). This contact can be runned by the detergent supplier.



Functioning

On the electrical drawing n° 31104156/folio 3, when the 2 and 3 marks of J209 connector J209 are shunted, the machine is putting into pause and stays as long as the contact is closed between 2 and 3. The heating is cut off, the signal “servo-control pause” blocks the time deduction and the other units (rinse, emptying, spin, etc...) of the machine is still working.

When the electric signal disappears, the heating is back on.

Weighing equipment (optional equipment)

Description

The weighing equipment comprises the following units :

- A scale unit located
- Three load cells on the frame
- Wiring

The weight of the wash load is registered by the load cells, which send analogue signals to the scale unit. In the scale unit the signals are processed and converted to a weight value in an analogue-digital converter. The weight value is transmitted via a serial interface to the CPU board. The weight is then shown on the display.

Safety rules

The weighing equipment is a precision measuring device and must be treated as such.

Never spray water directly onto the load cells and scale unit.

The load cells are vulnerable to impact.

The load cells are potentially vulnerable if welding is carried out. If welding has to be done on the washer extractor, attach the earth cable clamp as close as possible to the welding site.

Component locations

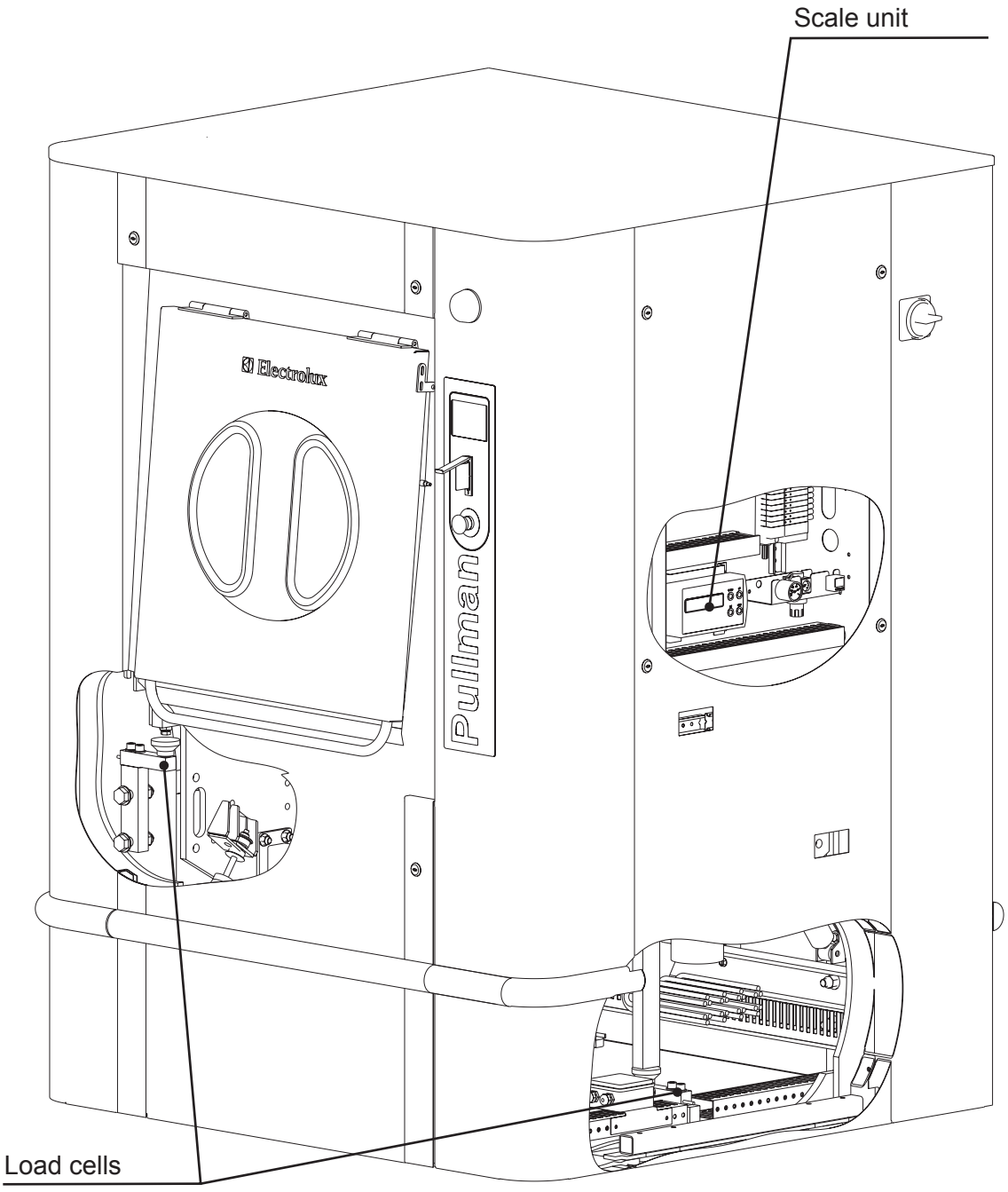
marks 1 to 6 : Load cells

marks 7 to 12 : Communication with CPU board

mark 13 : +DC - Voltage feed +10 to 35V

mark 14 : GND - Ground

marks 15 to 18 : Scale unit



D1546

Actual weight display

The TS Clarus control unit automatically detects if weighing equipment is connected, and the actual (current) weight is shown on the display, on one line of the menu.

The weight shown on the display will always be the net weight (achieved because the weighing equipment has been «tared»).

CAUTION:

To avoid disrupting the settings, never press on any of the 4 measurement unit keys.
In the event of a handling error, please contact the Electrolux Technical Service.

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Safety

Restarting the machine

After any stoppage of the machine, either due to power failure, emergency stop, motor safety, the machine can only be restarted after having pressed **"Valid"** key.

Drum doors

All of the different parts of the machine stop working automatically as soon as one of the drum doors is opened. The doors can only be opened if the cage is at a complete standstill and the programmer on end of cycle.

The drum door is kept opened by gas jacks.

On barrier machines, the loading and unloading doors cannot be opened at the same time.

For barrier machines, the unloading door opening is possible only if the wash program has been completely achieved. This guarantee the barrier process for a decontamination wash program in particular (time, temperature, water levels and detergents' inputs have been respected).

Motor protection

The motors driving our machines are of asynchronous rotor type with short circuit. They are protected by a frequency converter. A circuit breaker protect the frequency converter.

Level

Our machines are equipped with a pressure switch which controls the level of water in the machine according to the different programmes, prevents heating from taking place in the absence of water (minimum water level authorized : 10 units), and prevents from opening the door if the water level is higher than low level.

Unbalance safety device

A safety device stops the machine if the load is unbalanced (uneven distribution of linen at start of extraction).

Cage doors

If the cage doors are opened, the revolving drum is blocked mechanically.

Drum doors

Drum doors are equipped with "securit" type small windows, make of 2 tempered glasses separated by a plastic film, avoiding glass projection in case of thermic or physical shock.

Emergency stop

An emergency stop button is provided on the loading and unloading sides of the barrier machines.

Accessibility

All of the casings can be dismantled by means of a specially designed tool.

Risk analysis

The risks were assessed according to European standard EN ISO 14121-1.
The level of performance required (PLr) is satisfactory.
The machine complies with European standards and directives for safe use.

Operating incidents

In order to limit the risk of failure in the electronic controls of the programming unit of the machine, the machine should be earthed. Should interferences happen, the first thing to be checked is the earthing of the machine.

The programming unit permanently checks the machine, regarding both safety and working aspects. To make the fault finding easier, the display window indicates in clear text the origin of the failure, or the reason why the particular function cannot be used. The table below gives for each problem detected the message of the machine and the solutions to be brought.

Error/Function	Cause	Action
Displayed advertisement : **NO WATER** Water level has not reacher set level within set time.	- Electrovalve's filters are blocked.	- Clean electrovalve's filters.
	- No water in main supply.	- Check water in main supply.
	- Manual water valves (taps) are close.	- Open taps.
	- Electrovalves are faulty.	- Check function of electrovalves.
	- Drain valve is open.	- Check function of drain valve and compressed air inlet.
	- Level tube is faulty or not come loose from mother board.	- Check that level tube is sound and his raccordement.
	- Level detection function on CPU PCB faulty.	- Replace PCB.
Displayed advertisement : **LOADING DOOR OPENED** **UNLOADING DOOR OPENED** **DOORS UNLOCKED** Signal from microswitch which detects when the door is locked absent at program start.	- Door not locked.	- Test whether door really locked.
	- Fault in door lock switch, in wiring faulty or in compressed air.	- Open the door and switch off power to machine. Wait a minute or so, switch on power supply, close door again and try restarting.
		- Check compressed air inlet.
		- Check wiring or replace door lock as appropriate.
	- The PCB is faulty.	- Replace PCB.
Displayed advertisement : **LOW WATER TEMPERATURE** Temperature sensor indicating a temperature below lowest allowable value.	- This suggests open circuit (continuity fault) in sensor or wiring.	- Check the wiring temperature sensor and replace as appropriate.
	- Temperature sensor faulty.	- Replace temperature sensor.
	- Fault in temperature sensing device on CPU PCB.	- Replace PCB.

Error/Function	Cause	Action
Displayed advertisement : **HIGH WATER TEMPERATURE** Temperature sensor indicating a temperature above highest allowable value.	- This suggests short-circuit in sensor or wiring.	- Check the wiring temperature sensor and replace as appropriate.
	- Temperature sensor faulty.	- Replace temperature sensor.
	- Temperature detection function on CPU PCB faulty.	- Replace PCB.
Displayed advertisement : **WATER IN CAGE** The water level is higher than the EMPTY level at start of program.	- Waste water collector might be blocked.	- Clean waste water collector.
	- Drain valve, wiring faulty or compressed air inlet.	- Check drain valve functioning.
	- Level tube probably blocked.	- Clean or replace level tube. Clean connection of the water level control device.
	- Level detection function on CPU PCB faulty.	- Replace PCB.
	- Air vent blocked.	- Clean air vent.
Displayed advertisement : **OVERFLOWING LEVEL** The water level is above the set safety level during proram operation or manual operation.	- Transient fault or water has been added manually.	- Drain machine then restart a program or change the level in the manual program.
	- Electrovalves are faulty.	- Check function of electrovalves.
	- Level detection function on CPU PCB faulty.	- Replace PCB.
Displayed advertisement : **NO HEATING** Rate of temperature incease in water slower than minimum value allowed (normally 5°C/10 min).	- Bad water seal of the drain valve.	- Check water seal of the drain valve.
	- Elements faulty.	- Switch off power supply at wall switch. Measure resistance of elements to see if any element is faulty (open circuit). - Replace faulty element.
	- Leak at water supply.	- Check seals of water electrovalves.
	- Fault in wiring between contactor and element(s) or heating contactor faulty.	- Check wiring and replace the heating contactor.
	- Temperature detection function on CPU PCB faulty.	- Replace PCB.
Displayed advertisement : **FREQ. CONVERTER COMM.** Communication between A2-E/S card and A6 frequency converter faulty or interrupted.	- Transient fault. No action required.	- Turn the machine's wall switch off and on again. Start a program.
	- Frequency converter faulty.	- Check the frequency converter.

Error/Function	Cause	Action
Displayed advertisement : **DRAIN DEFAULT** The water level is higher than the EMPTY level after drain sequence.	- Programmed drain time too short.	- Increase drain time.
	- Level tube probably blocked.	- Clean or replace level tube. Clean connection of the water level control device.
	- Drain valve or compressed air inlet.	- Check drain valve functioning and compressed air inlet.
	- Level detection function on CPU PCB faulty.	- Replace PCB.
Displayed advertisement : **UMBALANCE SENSOR** **UMBALANCE** The unbalance safety device has been activated before spinning.	- The unbalance safety contact has been activated for at least 5 seconds during washing before a distribution. - The unbalance safety contact faulty or a suspension spring is broken. - Bad loading of machine.	- Turn the machine's wall switch off and check unbalance safety contact. - Check suspension. - Correctly load the drum or put linen in several nets.
Displayed advertisement : **LEVEL DEFAULT** An inconsistency in the water level detection (e.g. : negative level).	- Transient fault.	- Restart a program.
	- Level detection function on CPU PCB faulty.	- Replace PCB.
Displayed advertisement : **CRC DEFAULT** The A1-CPU card is faulty.	- Transient fault.	- Restart a program.
	- The PCB is faulty.	- Replace PCB.
Displayed advertisement : **I/O COMM** Communication between A2-E/S card and A3-Display card faulty or interrupted.	- Transient fault. No action required.	- Turn the machine's wall switch off and on again. Start a program. - Replace PCB.
	- The PCB is faulty.	
Displayed advertisement : **KEB ERROR 00 XXXX** A converter error has occurred.	- Internal fault in frequency converter does not function anymore.	- Refer to the service manual for a detailed description of the different converter faults.
Displayed advertisement : **EMERGENCY STOP** The emergency stop button has been pressed.	- Abnormal or dangerous running of the machine.	- After the problem which caused the emergency stop has been put right, reset the emergency stop button by turning it until it pops back out. - Check wiring.

Error/Function	Cause	Action
Displayed advertisement : **MACHINE HALTED** This message appears each time the machine is switched off.	- This message appears each time the machine is switched off.	- Push on the «Valid» key to use the machine.
Displayed advertisement : **DRUM LOCKED** The rear position of the indexing lever was not detected.	- The rear position contact of the indexing lever is defective. - The pneumatic activator is faulty.	- Replace the contact. - Check that the air is present and is correctly controlled.
Displayed advertisement : **DRUM NOT LOCKED** The indexing lever has not been pushed into its housing.	- The indexed position contact of the indexing lever is defective. - The pneumatic activator is faulty.	- Replace the contact. - Check that the air is present and is correctly controlled.
Displayed advertisement : **DRUM INDEX FAULT** The position of the indexing lever is incorrect.	- Indexing detectors defective or cabling fault.	- Replace one or more detectors at fault and check the cabling.
Displayed advertisement : **SDRAM CRC ERROR** The A1-CPU board is defective with a risk of CPU data loss.	- Transient fault. - The PCB is faulty.	- Restart a program. - Replace PCB.
Displayed advertisement : **DISPLAY COMM ERROR** Communication between A1-CPU card and A3-Display card card faulty or interrupted.	- Transient fault. No action required. - The PCB is faulty.	- Turn the machine's wall switch off and on again. Start a program. - Replace PCB.
Displayed advertisement : **NO AIR IN BUMPERS** A slight drop in cylinder air pressure has been detected.	- No air in main supply. - Manual water valves (taps) are close. - Air leak detected in the circuit at the cylinders.	- Check air in main supply. - Open taps. - Find the leak and repair it.
Displayed advertisement : **NO AIR PRESSURE** A slight drop in air pressure has been detected.	- No air in main supply. - Manual water valves (taps) are close. - Air leak in the circuit.	- Check air in main supply. - Open taps. - Find the leak and repair it.

Error	Meaning	Possible cause
Displayed advertisement : **40-ERROR EOP** Error overvoltage.	- Voltage in the DC-link circuit too high.	- Poor controller adjustment (overshooting), input voltage too high, interference voltages at the input, deceleration ramp too short, braking resistor defective or too small.
Displayed advertisement : **41-ERROR EUP** Error underpotential.	- Occurs, if DC-link voltage falls below the permissible value.	- Input voltage too low or instable, inverter rating too small, voltage losses through wrong cabling, the supply voltage through generator/transformer breaks down at very short ramps, E.UP is also displayed if no communication takes place between power circuit and control card, jump factor (Pn.56) too small, if a digital input was programmed as external error input with error message E.UP (Pn.65).
Displayed advertisement : **42-ERROR EUPh** Error phase failure.	- One phase of the input voltage is missing (ripple-detection).	.
Displayed advertisement : **43-ERROR EOC** Error overcurrent.	- Occurs, if the specified peak current is exceeded.	- Acceleration ramps too short, the load is too big at turned off acceleration stop and turned off constant current limit, short-circuit at the output, ground fault, deceleration ramp too short, motor cable too long, EMC, DC brake at high ratings active.
Displayed advertisement : **44-ERROR EOHI** Error overheat internal.	- Overheating in the interior : error can only be reset at E.nOHI, if the interior temperature has dropped by at least 3°C.	.
Displayed advertisement : **45-ERROR EnOHI** No Error overheat internal.	- No longer overheating in the interior E.OHI, interior temperature has fallen by at least 3°C.	.
Displayed advertisement : **46-ERROR EOH** Error overheat pow. mod.	- Overtemperature of power module. Error can only be reset at E.nOH.	- Insufficient air flow at the heat sink (soiled), ambient temperature too high, ventilator clogged.
Displayed advertisement : **47-ERROR EdOH** Error drive overheat.	- Overtemperature of motor PTC. Error can only be reset at E.ndOH, if PTC is again low-resistance.	- Resistance at the terminals T1/T2>1650 Ohm, motor overloaded, line breakage to the temperature sensor.

Error	Meaning	Possible cause
Displayed advertisement : **48-ERROR EndOH** No Error drive overheat.	- Motor temperature switch or PTC at the terminals T1/T2 is again in the normal operating range. The error can be reset now.	.
Displayed advertisement : **49-ERROR EPu** Error power unit.	- General power circuit fault.	.
Displayed advertisement : **50-ERROR EPUIN** Error power unit invalid.	- Software version for power circuit and control card are different. Error cannot be reset.	.
Displayed advertisement : **51-ERROR ELSF** Error load shunt fault.	- Load-shunt relay has not picked up, occurs for a short time during the switch-on phase, but must automatically be reset immediately.	- Load-shunt defective, input voltage wrong or too low, high losses in the supply cable, braking resistor wrongly connected or damaged, braking module defective.
Displayed advertisement : **52-ERROR EOL** Error overload.	- Overload error can only be reset at E.nOL, if OL-counter reaches 0% again. Occurs, if an excessive load is applied longer than for the permissible time.	- Poor control adjustment (overshooting), mechanical fault or overload in the application, inverter not correctly dimensioned, motor wrongly wired, encoder damaged.
Displayed advertisement : **53-ERROR EnOL** No Error overload.	- No more overload, OL-counter has reached 0%. After the error E.OL, a cooling phase must elapse. This message appears upon completion of the cooling phase. The error can be reset. The inverter must remain switched on during the cooling phase.	.
Displayed advertisement : **54-ERROR EBUS** Error bus.	- Ajusted monitoring time (watchdog) of communication between operator and PC/operator and inverter has been exceeded.	.
Displayed advertisement : **55-ERROR EOL2** Error overload 2.	- Occurs if the standstill constant current is exceeded. The error can only be reset if the cooling time has elapsed and E.nOL2 is displayed.	.
Displayed advertisement : **56-ERROR EnOL2** No Error overload 2.	- The cooling time has elapsed. The error can be reset.	.

Error	Meaning	Possible cause
Displayed advertisement : **57-ERROR EEEP** Error EEPROM defective.	- After reset the operation is again possible (without storage in the EEPROM).	.
Displayed advertisement : **58-ERROR EPUCO** Error power unit commun.	- Parameter value could not be written to the power circuit. Acknowledgement from PC<>OK	.
Displayed advertisement : **59-ERROR ESbuS** Error bus synchron.	- Synchronization over sercos-bus not possible. Programmed response : «Error, restart after reset».	.
Displayed advertisement : **60-ERROR EOH2** Error motor protection.	- Electronic motor protective relay has tripped.	.
Displayed advertisement : **61-ERROR EEF** Error external fault.	- External error. Is triggered, if a digital input is being programmed as external error input and trips.	.
Displayed advertisement : **62-ERROR EnC1** Error encoder.	- Cable breakage of encoder at encoder interface.	- Encoder temperature is too high, speed is too high, encoder signals are out of specification, encoder has an internal error.
Displayed advertisement : **63-ERROR EPFC** Error power factor control.	- Error in the power factor control.	.
Displayed advertisement : **64-ERROR EnOH** No Error over heat pow. mod.	- Temperature of the heat sink is again in the permissible operating range. The error can be reset now.	.
Displayed advertisement : **65-ERROR ESEt** Error set.	- It has been attempted to select a locked parameter set. Programmed response : «Error, restart after reset».	.
Displayed advertisement : **67-ERROR ESLr** Error software limit switch reverse	- The left software limit switch lies outside the defined limits. Programmed response «Error, restart after reset».	.

Error	Meaning	Possible cause
Displayed advertisement : **68-ERROR EPrF** Error prot. rot. for.	- The drive has driven onto the right limit switch. Programmed response : «Error, restart after reset».	.
Displayed advertisement : **69-ERROR EPrr** Error prot. rot. rev.	- The drive has driven onto the left limit switch. Programmed response : «Error, restart after reset».	.
Displayed advertisement : **70-ERROR EPuci** Error pow. unit code inv.	- During the initialization the power circuit could not be recognized or was identified as invalid.	.
Displayed advertisement : **71-ERROR EPuch** Error power unit changed.	- Power circuit identification was changed. With a valid power circuit this error can be reset by writing to SY.3. If the value displayed in SY.3 is written, only the power-circuit dependent parameters are reinitialized. If any other value is written, then the default set is loaded. On some systems after writing SY.3 a Power-On-Reset is necessary.	.
Displayed advertisement : **72-ERROR Edri** Error driver relay.	- Relay for driver voltage on power circuit has not picked up even though control release was given.	.
Displayed advertisement : **73-ERROR EHyB** Error hybrid.	- Invalid encoder interface identifier.	.
Displayed advertisement : **74-ERROR ECo1** Error counter overrun 1.	- Counter overflow encoder channel 1.	.
Displayed advertisement : **75-ERROR ECo2** Error counter overrun 2.	- Counter overflow encoder channel 2.	.
Displayed advertisement : **76-ERROR ECDD** Error calc. drive data.	- During the automatic motor stator resistance measurement.	.

Error	Meaning	Possible cause
Displayed advertisement : **77-ERROR EiNi** Error initialisation MFC.	- MFC not booted.	.
Displayed advertisement : **78-ERROR EOS** Error over speed.	- Real speed is bigger than the max. output speed.	.
Displayed advertisement : **79-ERROR EHyBC** Error hybrid changed.	- Encoder interface identifier has changed, it must be confirmed over ec.0 or ec.10.	.
Displayed advertisement : **80-ERROR ECDD** Error calc. drive data.	- During the automatic motor stator resistance measurement.	.

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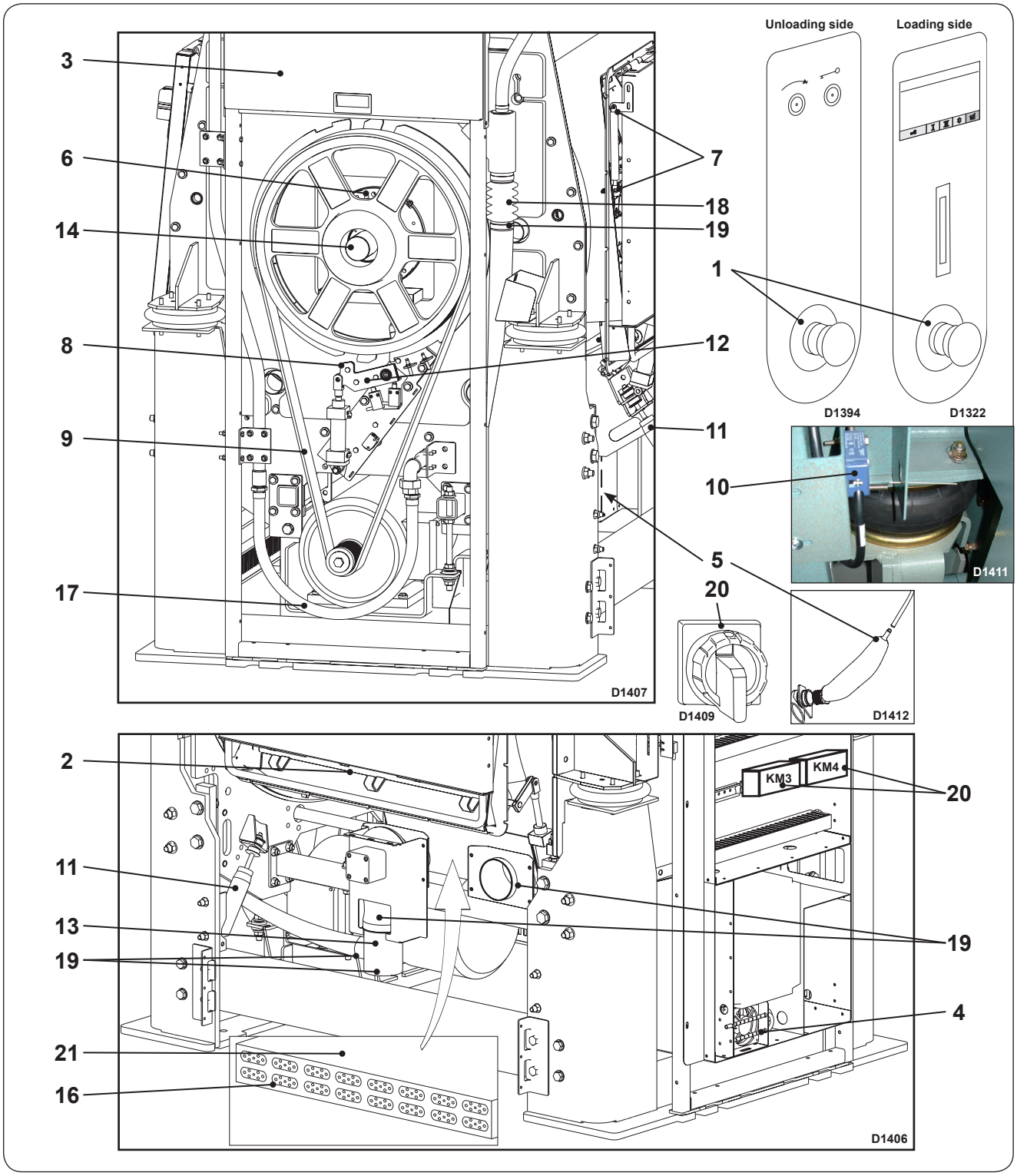
Maintenance



CAUTION

Complete the washing cycle, unload the machine and shut off the power supplies (water, electricity, steam, compressed air) before any maintenance or repair intervention is carried out.

Daily (8 hours)

1 Check that the "emergency stop button" works properly.

2 Check that the opening safety devices of the drum doors and of the outer doors are working correctly.

3 Clean the soap box (operate the rinse electrovalve : machines without detergent box).

Monthly (170 hours)

4 Clean the converter’s grill and its cooling system, as well as the cleaning tube (curved, slotted tube).
Increase the cleaning times frequency to the dirtying.

5 Clean the water intake and tube on the tank. (do not blow in the pipe towards the CPU).

6 In the absence of centralised lubrication, grease the drum bearings (two greasing points on per bearing). Use an appropriate pump and grease, avoid brutal injections. Use lithium soap grease, drop point 190 °C (374 °F) and penetration 250 / 300 (see lubrification table in the following pages).

7 Lubricate gas suspension door hinges with aerosol spray-on grease.

8 Lubricate the drum wheel locking lever notches and check that the detectors (FC1 and FC2) are working correctly.

9 Check that the belts are clean and tightened. Clean the drum pulley.

Every three months (500 hours)

10 Check that the unbalance switch works correctly : the machine should stop when the switch is manually driven.

11 Visually check the shock absorbers.

12 Check that the screws of the blocking device for drum doors are well tightened.

13 Remove and clean the drain.

14 Check the tightening couple of the 12 coupling screws with a dynamometric key (65 Nm).

15 Check that the assembly bolts are tightened on the tank flanges (12 of each side).

Every six months (1,000 hours)

16 Check the connections of the heating elements (for electric heating).

17 Check the steam heating pipes: aspect and connecting points. Clean the filter (for steam heating).

18 Check the water inlet pipes : aspect and connecting points. Clean the valve filters.

19 Check the bellows : aspects and choke collar.

20 Check that the electrical connection are correctly tightened as well on the main switch than on the electric elements contactor.

21 Remove the scale of the heating elements using the right chemical. Adapt this operation according to your need (water hardness).

CAUTION

To ensure that your machine gives the very best service, please take care that maintenance is carried strict accordance with the instructions above mentioned.

Frictional electricity
Some textiles may generate frictional electricity causing damages when calendering. In most cases, this can be avoided by using at the last rinse a softener with an antistatic agent.

Chlorine
Chlorine introduced in a rinsing bath at a temperature of more than 40°C (104°F) affects stainless steel.
The chlorometric degree should be between 47° and 50°.
(1° chlorometric degree corresponds to 3.17 g (0.11 oz) of active chlorine).
The chlorine concentration should not exceed the ratio indicated, or the stainless steel may be affected. Check the concentration ratio of your products.
The javellization should be of 10 to 15 cm^3 / kg (0.28 to 0.42 cu in/lb) of linen.

Colorants

Do not input colorant in the machine with very hot water. Very hot water react with the colorant, which creates a very corrosive solution. The colorants must be input with cold water or warm water which temperature doesn't exceed 50°C (122°F).

Lubricant table

MACHINE LUBRICATION									
USES		Rolling bearings Bearings	Rolling bearings Bearings hight temperature	Assembly paste (fretting corrosion)	Bare gears Chains shafts Thread Slides	Flange joints Union pipes Steam circuits	Reducers with wheels and screws	Reducers with gears	Circuits and pneumatic devices
TYPES OF LUBRICANTS AND STANDARDIZATION		Lithium soap grease	Lithium soap grease + silicone oil	Lithium soap paste + mineral oil + mineral solid greases	Lithium soap grease with MOS2 additive	Graphite grease mini 60% graphite, special leakproof	Extreme hight pressure oil	Extreme hight pressure oil	Inhibited oil SAE5
		Grade ISO NLGI2	Grade ISO NLGI3	Grade ISO NLGI1	Grade ISO NLGI2	Grade ISO NLGI2	Grade ISO VG150	Grade ISO VG220	Grade ISO VG22
TEMPERATURE LIMIT RANGE		-20°C + 140°C -4°F + 284°F	-40°C + 200°C -40°F + 392°F	-20°C + 150°C -4°F + 302°F	-20°C + 135°C -4°F + 275°F	-30°C + 700°C -22°F + 1292°F	0°C + 100°C 32°F + 212°F	0°C + 120°C 32°F + 248°F	+10°C + 65°C +50°F + 149°F
RECOMMENDED		**CELTIA G2**	**NTN SH44 M**	ALTEMP Q NB 50	MI-SETRAL 43N	GRACO AF 309	**REDUCTELF SP150**	**REDUCTELF SP200**	LUBRAK ATL SAE 5W
CODE PRODUCT		96 011 008	96 011 019	96 011 014	96 011 000	96 011 004	96 010 001	96 010 004	96 010 030
CORRESPONDENCE	ANTAR	ROLEXA 2			EPOXA MO 2		EPONA Z 150	EPONA Z 220	MISOLA AH
	BP	LS EP 2					ENERGOL CRXP 150	ENERGOL CRXP 220	SHF 22
	CASTROL	SPEEROL EP2					ALPHA SP 150	ALPHA SP 220	
	ELF	EP2			STATERMA MO10		REDUCTELF SP150	REDUCTELF SP220	SPINEF 22
	ESSO	BEACON EP2			MULTI PURPOSE GREASE MOLY		SPARTAN EP150	SPARTAN EP220	SPINESSO 22
	FINA	MARSON EP2					GIRAN SR150	GIRAN SR220	
	GBSA					BELLEVILLE N			
	GRAFOIL					GRACO AF 309			
	KLUBER	CENTOPLEX 2	UNISILKON L50Z	ALTEMP Q.NB50	UNIMOLY GL82	WOLFRACOAT C	LAMORA 150	LAMORA 220	CRUCOLAN 22
	MOBIL	MOBILUX					MOBILGEAR 629	MOBILGEAR 630	DTE 24
	KERNITE	LUBRA K LC			LUBRA K MP		TOP BLENB ISO 80W90	TOP BLENB ISO 220	LUBRA K ATL SAE5W
	SETRAL				MISETRAL 43N				
	SHELL	ALVANIA R2			RETINA AM		OMALA 150	OMALA 220	TELLUS 22
	TOTAL	MULTISS EP2					CARTER EP150	CARTER EP220	EQUIVIS 22
	MOLYKOTE		MOLYCOTE 44	PATE DX					
	OPAL	GEVAIR SP			SUPER MOS 2		GEAROPAL GM 65 ISO 150	GEAROPAL GM 75 ISO 220	HYDROPAL HO 110 HM++22
	ITECMA	GRL-ULTRA	VULCAIN	SILUB-P	GMO	LHT-C	DURAGEAR BL		AEROSYN
	DOW CORNING		SH 44 N						

Conversion of measurement units

The following is a list of correspondences of the main frequently used units, to avoid the need to use measurement unit conversion tables.

bar :
1 bar = 100 000 Pa
1 bar = 1.019 7 kg/cm²
1 bar = 750.06 mm Hg
1 bar = 10 197 mm H_2O
1 bar = 14.504 psi

british thermal unit :
1 Btu = 1 055.06 J
1 Btu = 0.2521kcal

calorie :
1 cal = 4.185 5 J
1 cal = 10^{-6} th
1 kcal = 3.967 Btu
1 cal/h = 0.001 163 W
1 kcal/h = 1.163 W

continental horse power :
1 ch = 0.735 5 kW
1 ch = 0.987 0 HP

cubic foot :
1 cu ft = 28.316 8 dm³
1 cu ft = 1 728 cu in

cubic inch :
1 cu in = 16.387 1 dm³

foot :
1 ft = 304.8 mm
1 ft = 12 in

gallon (U.K.) :
1 gal = 4.545 96 dm^3 or l
1 gal = 277.41 cu in

gallon (U.S.A.) :
1 gal = 3.785 33 dm^3 or l
1 gal = 231 cu in

horse power :
1 HP = 0.745 7 kW
1 HP = 1.013 9 ch

inch :
1 in = 25.4 mm

joule :
1 J = 0.000 277 8 Wh
1 J = 0.238 92 cal

kilogramme :
1 kg = 2.205 62 lb

kg/cm² :
1 kg/cm² = 98 066.5 Pa
1 kg/cm² = 0.980 665 bar
1 kg/cm² = 10 000 mm H_2O
1 kg/cm² = 735.557 6 mm Hg

pound :
1 lb = 453.592 37 g

meter :
1 m = 1.093 61 yd
1 m = 3.280 83 ft
1 m = 39.37 in

cubic meter :
1 m³ = 1 000 dm³
1 m³ = 35.314 7 cu ft
1 dm³ = 61.024 cu in
1 dm³ = 0.035 3 cu ft

pascal :
1 Pa = 1 N/m²
1 Pa = 0.007 500 6 mm Hg
1 Pa = 0.101 97 mm H_2O
1 Pa = 0.010 197 g/cm²
1 Pa = 0.000 145 psi
1 MPa = 10 bar

psi :
1 psi = 0.068 947 6 bar

thermie :
1 th = 1 000 kcal
1 th = 10^6 cal
1 th = 4.185 5 x 10^6 J
1 th = 1.162 6 kWh
1 th = 3 967 Btu

watt :
1 W = 1 J/s
1 W = 0.860 11 kcal/h

watt-hour :
1 Wh = 3600 J
1 kWh = 860 kcal

yard :
1 yd = 0.914 4 m
1 yd = 3 ft
1 yd = 36 in

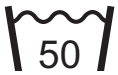
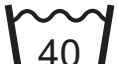
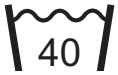
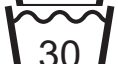
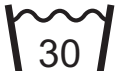
temperature degrees :
0 °K = -273.16 °C
0 °C = 273.16 °K
t °C = 5/9 (t °F-32)
t °F = 1.8 t °C + 32

Explanation of washing symbols

(ISO 3758:2005 standard)

To overcome language barriers, the following are symbols used internationally to give you guidance and recommendations when washing different textiles.

Washing *The tub symbolizes washing.*

	Max. washing temperature in °C	Mechanical action
	95	normal
	95	mild
	70	normal
	60	normal
	60	mild
	50	normal
	50	mild
	40	normal
	40	mild
	40	very mild
	30	normal
	30	mild
	30	very mild
	40	Wash by hand
		Do not wash

Bleaching *The triangle symbolizes bleaching.*

	Bleaching allowed (chlorine or oxygen).
	Bleaching allowed (only oxygen).
	Do not bleach.

Dry or water cleaning *The circle symbolizes dry or water cleaning.*

	Normal dry cleaning with perchloroethyl, solvent of hydrocarb.
	Mild dry cleaning with perchloroethyl, solvent of hydrocarb.
	Normal dry cleaning with solvent of hydrocarb.
	Mild dry cleaning with solvent of hydrocarb.
	Do not dry clean.
	Normal water cleaning.
	Mild water cleaning.
	Very mild water cleaning.

Drying *The circle in a square symbolizes tumble drying.*

	Can be put in a tumble dryer. Normal temperature.
	Can be put in a tumble dryer. Lower temperature.
	Do not put in a tumble dryer.

Ironing *The iron symbolizes the domestic ironing and pressing process.*

	Max.temperature 200°C.
	Max.temperature 150°C.
	Max. temperature 110°C. The steam can cause irreversible damages.
	Do not iron.

Thinking of you

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