Industrial washer extractors

Freestanding, high spin machines

7 kg	**8 kg**	**11 kg**
14 kg	**18 kg**	**24 kg**
28 kg	**33 kg**	**40 kg**
55 kg	**80 kg**	**100 kg**
120 kg		

Rigid-mount machines

8 kg	**11 kg**	**14 kg**	– meduim spin
18 kg	**24 kg**	**28 kg**	– medium spin
18 kg	**24 kg**	**28 kg**	– normal spin

High spin hygienic barrier machines

18 kg	**24 kg**

Original programming manual Xcontrol Plus

Machine type selection:

	Dry load capacity		"Machine type" selection
FREESTANDING, HIGH SPIN WASHER EXTRACTORS	7 kg / 15 lb	=>	FX65
	8 kg / 18 lb	=>	FX80
	11 kg / 25 lb	=>	FX105
	14 kg / 30 lb	=>	FX135
	18 kg / 40 lb	=>	FX180
	24 kg / 55 lb	=>	FX240
	28 kg / 65 lb	=>	FX280
	33 kg / 80 lb	=>	FS33
	40 kg / 100 lb	=>	FS40
	55 kg / 125 lb	=>	FS55
	80 kg / 180 lb	=>	FS800
	100 kg / 230 lb	=>	FS1000
	120 kg / 275lb	=>	FS1200
RIGID-MOUNT, MEDIUM SPIN WASHER EXTRACTORS	8 kg / 18 lb	=>	RX80M
	11 kg / 25 lb	=>	RX105M
	14 kg / 30 lb	=>	RX135M
	18 kg / 40 lb	=>	RX180M
	24 kg / 55 lb	=>	RX240M
	28 kg / 65 lb	=>	RX280M
RIGID-MOUNT, NORMAL SPIN WASHER EXTRACTORS	18 kg / 40 lb	=>	RX180N
	24 kg / 55 lb	=>	RX240N
	28 kg / 65 lb	=>	RX280N
HIGH SPIN HYGIENIC BARRIER MACHINES	18 kg / 40 lb	=>	FXB180
	24 kg / 55 lb	=>	FXB240

1. TABLE OF CONTENTS

2. WARNINGS AND SYMBOLS

2.1. WARNINGS

⚠ **BEFORE OPERATING A MACHINE CONTROLLED BY AN ELECTRONIC PROGRAMMER, READ THIS MANUAL. INCORRECT USE CAN RESULT IN SERIOUS INJURIES OR DAMAGE TO THE MACHINE CONTROLS. IGNORING INSTRUCTIONS CAN CAUSE AN INCORRECT MACHINE FUNCTION, WHICH MAY RESULT IN INJURIES OR MACHINE AND/OR LINEN DAMAGES.**

– This English version is the original version of this manual. Without this version, the instructions are incomplete. Before installation, operating and maintenance of the machine, read complete instructions thoroughly which means the following manuals: „Original Programming Manual" and „Original Installation, maintenance and user's manual". Follow these instructions and keep them handy for later use.

– A machine must be installed by following the „Original Installation, maintenance and user's manual". Before the first machine start, it must be initialized and tested by a qualified worker.

– The electric service line must not be affected by other electrical loading. A nominal voltage, if loaded or not must work in the range ±10% with a maximum permanent frequency deviation of 1% or a short-time one at 2% of a given frequency. Connecting or starting the machine at an incorrect voltage can damage the programmer.

– The machine must not be exposed to high humidity or extreme high and low temperatures.

– Do not tamper with the controls.

INSTRUCTIONS IN THIS MANUAL DO NOT COVER ALL DANGEROUS SITUATIONS.

IT IS UP TO THE USER TO HANDLE THE MACHINE CAREFULLY.

The manufacturer has the right to change specifications in this manual without prior notice. All the stated information is only for informative purpose and must be considered as general. It is not possible to present all the specific data of the device.

NOTE!

EVERY CIRCUIT BOARD HAS A SERIAL NUMBER AND THE CODE OF THE BOARD (Picture 9.3).

THE MODEL AND SERIAL NUMBER OF THE MACHINE, MUST BE MENTIONED IN ALL CORRESPONDENCE OR INQUIRIES ADDRESSED TO THE DISTRIBUTOR OR MANUFACTURER.

NOTE!

THE PROGRAMMER USES „MACHINE TYPE" CODES TO SELECT THE DIFFERENT PROGRAMMABLE MACHINES EXECUTIONS.

The model number on the machine doesn't indicate the „machine type" but must be linked with the description of the „machine type" letters.

2.2. SYMBOLS USED

❑ **BUTTONS**
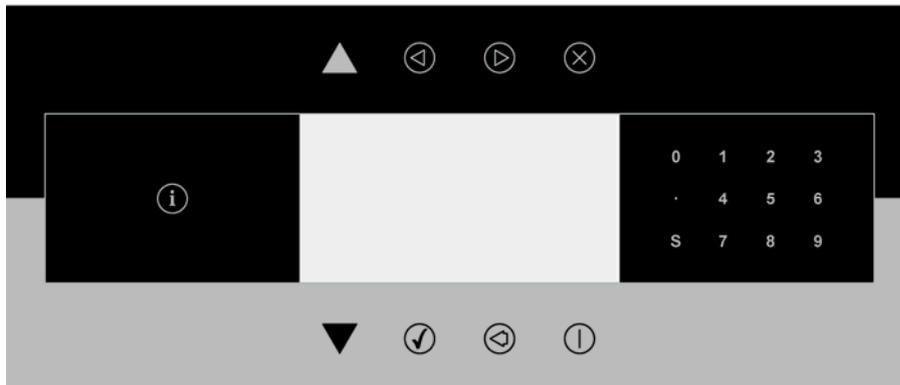
�	**START** (**ADVANCE** function)
⊗	**STOP** (program interruption)
✓	**CONFIRM THE SELECTION (ENTER)**
◁	**CANCEL THE SELECTION**
▲	**MOVE UP**
▼	**MOVE DOWN**
◁	**SELECTION NO** **DECREASING THE TIME SEQUENCE**
▷	**SELECTION YES** **INCREASING THE TIME SEQUENCE**
ⓘ	**INFO** (overview of available wash programs and program information)
S	**SERVIS INFO** (servicing information)
.	**DELAYED START FUNCTION** (the delay starts running upon the pressing of the "start" button)
0 až 9	**NUMERIC KEYPAD**

Main Menu

Initialisation Menu
- Initialisation Menu
- Program Menu
- Service Menu
- Configuration Menu
- Advanced Menu

Initialisation Menu
- Language: English
- Service Interval: 3000
- Buzzer time: 5 sec
- Allow Advance: Yes
- Automatic Cooldown: Yes
- Wait for Temperature: Yes
- Manual override: No
- Temperature balance: No
- Motor On Time: 12 Sec
- Motor Off Time: 3 Sec
- Smart Motion: No
- Hot Water Heater temp: 60 °C
- Temp Overshoot Protection: 00%
- Max. Heating Time : 60 Min
- Max. WaterFill Time : 10 Min
- Overfill Detection : 5 Units
- External Wait Control: Off
- (Door Position Dirty Tune: 5)
- (Door Position Hyg. Tune: 5)
- Prewash Soap Info: No
- Wash Liq. Soap Info: Yes
- Main Water Pressure: High
- Step Info: No
- Initialisation Menu   Exit

Program Menu
- Initialisation Menu
- Program Menu
- Service Menu
- Configuration Menu
- Advanced Menu

Program Menu
See Corresponding flowchart
How to Create and Adjust a Wash Program.

Service Menu
- Initialisation Menu
- Program Menu
- Service Menu
- Configuration Menu
- Advanced Menu

Service Menu
- Software: XXX.YYY.Z
- Diagnostic Progr...
- Start Cycle: No
- Faults...
  - View Fault Messages ....
  - Erase Fault Messages: No
  - View Fault Statistics ...
- Toolbox...
  - View Input States ...
  - Imbalance Statist ...
  - Inverter Power: Off
  - (Brake: On)
  - Reset Service Counts : No
  - RTC Time: XX:YY:ZZ
  - RTC Date: AA:BB:CC
  - Adjust Clock....
- Service Menu   Exit

Configuration Menu
- Initialisation Menu
- Program Menu
- Service Menu
- Configuration Menu
- Advanced Menu

Configuration Menu
- PassWord 3 2 1
- Machine type FX65
- Reset Defaults ?
- Brightness Display: 12
- Inverter Menu ...
  - Supply Volt: XXXX-XXXX+X
  - Load Param ...
- Total Number of Inlets: 2
- Drain Val.1 Inverted: No
- Drain Valve 2: No
- Water recycle inlets: 0
- Supply sign. A: Box
- Liquid Soap Supply: No
- Min. Level Start Sup.: 0
- Temperature: Celcius
- Full Heating: 1%
- Wet Cleaning: No
- Ultrabal. Settings: 10
- (Non-barrier Model: No)
- Erase All Wash Prog...
- Load StandardPrograms ...
  - Load Program 1-20 ? No
  - Load Program >20 ? No
- Communicaton Address: 255
- Configuration Menu   Exit

Advanced Menu
- Initialisation Menu
- Program Menu
- Service Menu
- Configuration Menu
- Advanced Menu

Advanced Menu
- Hygienic Cycle ...
- Strict Temp. Control: No
- Temp. Calib. Offset: 0
- Hygienic Water Level: No
- Program Mode Lock ...
  - Password ...
  - Edit Password ...
    - New Password ...
    - Old Password ...
    - No Password ...
  - Password ...
- Program Lock...
  - Password ...
  - Programs ...
    - Program 1: Unlocked
  - Edit Password ...
    - New Password ...
    - Old Password ...
    - No Password ...
- Traceability...
  - Enable Traceability: No
  - Traceability report: Data DAQ
  - PC Comm. Timeout: 15 sec
  - PC Data Time Limit: 60 sec
  - Disable Traceabil. Errors: No
- Weighing...
  - Weighing System: No
  - Main units: kg
  - Help units: %
  - Load Cell Calibration...
  - Expected Free Weight: XXXX
  - Water Level: Units
  - Correct Linen Absorpt: No
  - Automatic Level Adjust.: No
  - Automatic Soap Adjust.: No
  - Scale stabilization: 3
  - Calibration coefficient: 100
- Tilting system...
  - Tilting system: Off
  - Stabilization time: 25
- Data Export/Import...
  - Data Export: No
  - Programs Import: No
  - Conf. Import: No
- Special...
  - SopaLink Comm.: No
- Advanced Menu   Exit

Selecting the menu item : Press button **UP** or **DOWN**.

Selection list : Press button **LEFT** or **RIGH**.

Selecting a new Program Sub-menu and go to this Sub-menu : **ENTER** button

Confirming a menu item and go to the next menu item : **ENTER** button.

Insert a value or Select another List element

◄►
▲▼
↵
➡
––

① - Select the Initialisation, Program, Service, Configuration or Advanced Menu.

② - Change the Settings at the Menu items.

Attention !!!
Depending the machine type, some items will not be displayed.

548236D

3. BASIC DESCRIPTION OF CONTROLS

3.1. GENERAL

❑ **THE CONTROL OFFERS :**

- 99 programmable programs (including 20 pre-programmed ones).
- Control of signal voltages for external pumps or liquid supply dispensers.
- Redistribution of the garments to avoid imbalance.
- Automatic temperature balance during the water fill process.
- Setting the machine options and configuration.
- Multiple languages can be selected (one at a time).

❑ **IN OPERATION THE FOLLOWING DATA IS DISPLAYED :**

- The selected program.
- The active wash step.
- The remaining program time.
- Wash cycle progression bar.
- Indication of wait for heat (if selected).
- Diagnostic messages.

❑ **THE OPERATION MENU :**

- A program can be manually Shortened, Extended, Stopped.
- A pause can be programmed.
- A direct operation of selected components (water valves, etc.).
- Program overview.
- Service information.

❑ **THE HARDWARE AND SOFTWARE OF THE WASH COMPUTER**

- Easy operation by a comprehensive keypad.
- The hardware contains 2 electronic board.
- The wash computer with graphic LCD display.
- The control software of the washing machine is stored in the internal memory of the wash computer and it can be easily adjusted (USB flash drive).
- The Wash Programs are kept in EEPROM memory (non-volatile memory).

3.2. SPECIFIC

❑ **The PROGRAM Menu is designated for:**
  ◆ the creation of a specific **name** for a wash program.
  ◆ the creation and implementation of a **new** wash program step by step.
  ◆ **editing** a wash program step by step.
  ◆ **inserting** and **deleting** steps in the wash program.
  ◆ **copying** a wash program.
  ◆ **deleting** a wash program.
  ◆ inspecting the wash program by the **view** function.

❑ **The CONFIGURATION Menu is designated for :**
  ◆ the selection of the **machine type**.
  ◆ **loading** the default **factory settings** for the CONFIGURATION and INITIALIZATION menu.
  ◆ the selection of the **Brightness** of the **display**.
  ◆ the selection of the **power supply voltage** of the washing machine.
  ◆ **loading** the frequency **inverter parameters**.
  ◆ **erasing** all the programmed **wash programs** (reset Wash program EEPROM memory).
  ◆ **loading** the **standard wash programs**.
  ◆ the selection of the **number** of wash machine **water supply inlets**.
  ◆ the selection of a **second drain valve**. (water recycling system)
  ◆ the selection if **external liquid pumps** have been connected to the washing machine.
  ◆ the selection if the **temperature** must be displayed in degrees **Celsius** or degrees **Fahrenheit**.
  ◆ the selection **Full Heating**.
  ◆ the selection of **Wet Cleaning** (very low programmable water levels).
  ◆ the selection of the **minimum level start supplies**.

❑ **The INITIALIZATION Menu is designated for :**
  ◆ the selection of the displayed **Language**.
  ◆ programming the **Service due** value.
  ◆ the selection of the **Buzzer time** interval.
  ◆ the selection of the **Advance** function.
  ◆ the selection of the **Wait for temperature** function.
  ◆ the selection of the **Manual override** function.
  ◆ the selection of the **Temperature balance** function.
  ◆ programming the **Default Motor On** and **Off times** for reversing wash action.
  ◆ the selection of the **Automatic Cool-down** function.
  ◆ programming the **Boiler temperature** (hot water supply).
  ◆ programming the **Temperature Overshoot Protection** value.
  ◆ programming the **Maximum Heating time** value.
  ◆ programming the **Maximum Fill time** value.
  ◆ programming the **Maximum Level overfill** value.

❑ **The SERVICE Menu is designated for :**
  ◆ the inspection of the **error messages** log register and the list with statistics.
  ◆ activating the **power** of the frequency inverter.
  ◆ the inspection of the functionality of the electric **input** signals.
  ◆ resetting the **Cycle counter**.

❑ **The DIAGNOSTIC Menu is designated for :**
  ◆ running a **Diagnostic Program**.

❑ **The ADVANCED Menu is designated for :**
  ◆ special optional applications

3.3. HOW TO GET INTO THE SETUP MODE

S   Press the SERVICE INFO button on the keypad.

▼   Press the Arrow Down Button several times until you see the screen with the Menu Selection:
"To program mode press 0"

SERVICE INFO
To pogram mode   Press 0
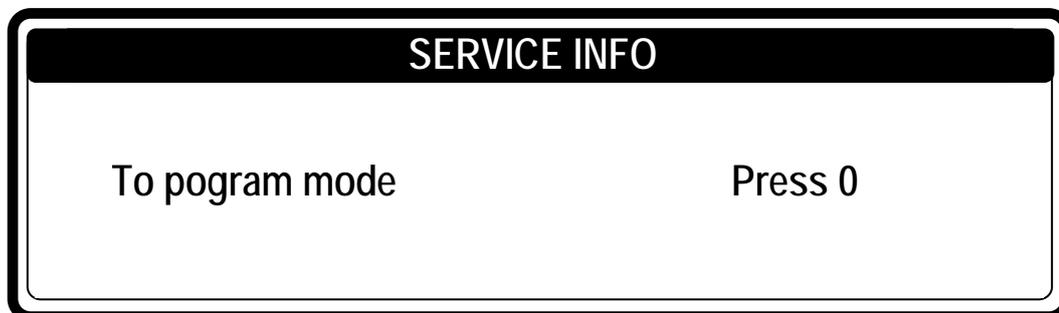
Press 0 (the Zero button). You will see the Main Menu Screen.
If a Password was enabled first you have to Enter the right Password.

To Program Mode
▶ Password   ....
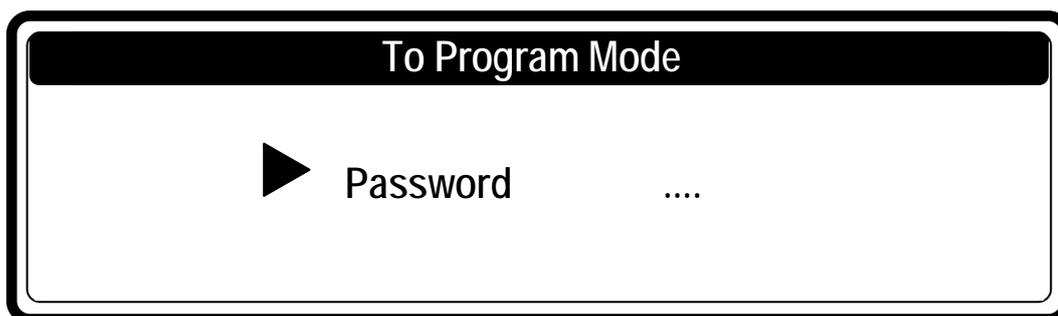
How to leave a setup mode

When the „Main Menu" screen is shown.

S   Press the SERVICE INFO button on the keypad. Then you will return to "Run Mode" and „SELECT CYCLE" is shown.

99 Wash Programs - 99 Steps

Program 1	Program 2	Program 3	. . .	Program 99
Name Prog	**Name Prog**	**Name Prog**		**Name Prog**

Step 1	**Step 1**	**Step 1**	. . .	**Step 1**
Wash Sequence	Wash Sequence	Wash Sequence		Wash Sequence
Drain/ Extraction Sequence	Drain/ Extraction Sequence	Drain/ Extraction Sequence		Drain/ Extraction Sequence

Step 2	**Step 2**	. . .	**Step 2**
Wash Sequence	Wash Sequence		Wash Sequence
Drain/ Extraction Sequence	Drain/ Extraction Sequence		Drain/ Extraction Sequence

Step 3	. . .	**Step 3**
Wash Sequence		Wash Sequence
Drain/ Extraction Sequence		Drain/ Extraction Sequence

. . .   . . .

Step 99	**Step 99**
Wash Sequence	Wash Sequence
Drain/ Extraction Sequence	Drain/ Extraction Sequence

Tumble Sequence	Tumble Sequence	Tumble Sequence	. . .	Tumble Sequence

Available Wash Sequences : Prewash, Wash, Cooldown, Rinse, Final Rinse, Soak, Spray, No Wash

AVAILABLE DRAIN/EXTRACTION SEQUENCES : **DRAIN, EXTRACT, NO DRAIN, STATIC DRAIN, REV DRAIN**

3.4. THE CREATION OF A WASH PROGRAM

- **A Wash Program is built up step by step.**
- **Each step always consists of a Wash sequence and a Drain/Extraction sequence.**

❑ **Programming the Wash sequence :**

- First choose the type of Wash sequence.

Washing machine with top soap dispenser	Washing machine with front (or side) Soap Dispenser
548221	A B C D E 101009
◆ **PREWASH**	◆ **WASH**
◆ **WASH**	◆ **COOLDOWN**
◆ **COOLDOWN**	◆ **RINSE**
◆ **RINSE**	◆ **SOAK**
◆ **FINAL RINSE**	◆ **SPRAY**
◆ **SOAK**	◆ **No WASH**
◆ **SPRAY**	
◆ **No WASH**	

- Then program all the related functions of the sequence.

  The available functions are :
  - **Temperature**
  - **Water Level**
  - **Water Inlet Valves**
  - **The Wash Speed**
  - **The Reversing Interval times**
  - **Supplies**
  - **Sequence Time (length of step)**
  - **Drain valve 1 – 2**
  - **Pause Signal**

- You will notice that each step has default settings.
  This feature is very helpful as most of the newly created programs will not require changes to be made to the suggested values.

❑ Programming the Drain sequence :

◆ After programming the Wash sequence, next program the Drain/Extraction sequence.

- ◆ **DRAIN**
- ◆ **EXTRACTION**
- ◆ **No DRAIN**
- ◆ **STATIC DRAIN**
- ◆ **REVERSING DRAIN**

◆ Then program all the related functions of the Drain/Extraction sequence.

The available functions are :

- ◆ **Sequence Time** (length of step)
- ◆ **Speed**
- ◆ **Drain valve 1 - 2**

◆ As you will notice it's also possible to skip a sequence between two other sequences by programming **No WASH** or **No Drain**.

Example : The No drain sequence should be programmed between a wash and a cool-down sequence.

⚠ **ATTENTION!**
A MORE DETAILED EXPLANATION FOR THE SPECIFIC SEQUENCES CAN BE FOUND IN CHAPTER 5.

❑ The Tumble sequence :

- ◆ The wash cycle will always end with the Tumble sequence.
- ◆ The tumble sequence takes 30 Seconds, then the program is finished and the door can be opened.
- ◆ **The Tumble sequence cannot be skipped**.

3.5. PROGRAMMING THE FUNCTIONS

❏ Limits
- ◆ To ensure the correct functionality of the washing machine you have to program values within certain limits.
- ◆ If you program a value that falls below the minimal or above the maximal programmable limit then the new value will not be accepted and the previous value stays valid.

❏ Programming the Water Temperature
- ◆ Limits
- - Minimum value : 1 °C
- - Maximum value : 45°C for the PREWASH and SOAK and 92°C for the WASH sequence.
- - For RINSE, FINAL RINSE and SPRAY no Temperature can be programmed.

❏ Programming the Water Inlet valves
- ◆ Depending on the programmed temperature the water inlet valves are suggested.
- ◆ While the tub is filling with water, the computer controls the water temperature. By switching on and off the hot and cold water inlet valves the correct water temperature is obtained.
- ◆ For machines with a Top Soap Dispenser you have to consider that by programming the water inlet valves, at the same time, you are also selecting the soap Box at which the soap must be added.
- ◆ If you want to program a wash sequence with :
- - Cold Water :   only Cold Inlet Valves must be programmed
- - Warm or Hot water :   Cold **and** Hot Inlet Valves must be programmed

❏ Top Soap Dispenser washing machines

The cold water inlet valves

Inlet Valve 1	corresponds with	soap box for a Prewash
Inlet Valve 2	corresponds with	soap box for a Wash - detergent
Inlet Valve 3	corresponds with	soap box for a Wash - liquid soap
Inlet Valve 4	corresponds with	soap box for a Final Rinse
Inlet Valve 7	is a direct Inlet Valve and speeds up the water fill process	

The hot water inlet valves

Inlet Valve 5	corresponds with	soap box for a Prewash
Inlet Valve 6	corresponds with	soap box for a Wash - detergent
Inlet Valve 8	corresponds with	soap box for a Wash - liquid soap

How to select inlet valves : EXAMPLE

- ◆ For a Prewash : Programmable temperature: 1 - 45°C
  Inlet Valve 1 (cold) and/or 5 (hot)   soap box for a Prewash
  and/or 7 (cold)   direct Inlets

- ◆ For a Wash : Programmable temperature: 1 - 92°C
  Inlet Valve 2 (cold) and/or 6 (hot)   soap box for a Wash - detergent
  and/or 7 (cold)   direct Inlets

- ◆ For a Rinse : Inlet valves 1+2+7 (cold)   No detergent is added

- ◆ For a Final Rinse : Inlet valve 4   soap box for a Final rinse
  and/or 7 (cold)   direct inlets

> ⚠ **ATTENTION!**
> FOR MACHINES WITH LIQUID SUPPLY PUMPS, DIRECT WATER INLET VALVE 7 MUST BE
> PROGRAMMED BECAUSE THE LIQUID IS ADDED AT THE DIRECT WATER INLET CHANNEL.
> FOR WASHING MACHINES WITH WATER RECYCLING, THE WATER RECYCLING SUPPLY MUST
> BE CONNECTED TO INLET VALVE 5 OR 7.

Front or side soap dispenser washing machines

The cold water inlet valves
Inlet Valve 1 :   Cold Hard Water or Recycled Water
Inlet Valve 2 :   Cold Soft Water

The hot water inlet valve
Inlet Valve 3 :   Warm Soft Water

> ⚠ **ATTENTION!**
> FOR A FRONT SOAP DISPENSER WASHING MACHINE, TO ADD SOAP, THE SUPPLIES MUST BE PROGRAMMED.

❑ Programming the water level

- **– Water level Limits**
    - ✦ See table 3.5. A. The values are different for each machine type.
    - ✦ Minimum value: above the heating elements and the temperature sensor
    - ✦ Maximum value: half the wash drum
- **– Normal Low Level, Normal High Level**
    - ✦ The Normal Low Level is recommended for the PREWASH, WASH and SOAK sequences.
    - ✦ The Normal High Level is recommended for the RINSE and FINAL RINSE Sequences.
    - ✦ At the COOLDOWN sequence, the Wash Computer makes use of a low water level and is draining the water automatically.
    - ✦ At the Spray sequence, the Drain valve stays open.

- **– Wet Cleaning selection Configuration menu**
    - ✦ It's possible to program a level below default minimum programmable level. (see table 3.5.A).
    - ✦ The heating will not be functional for a water level below the standard minimum programmable water level.

> ⚠ **ATTENTION!**
> FOR WOOLENS AND OTHER DELICATE LINEN A NORMAL HIGH WATER LEVEL IS RECOMMENDED.
> THE ECONOMY WASH PROGRAMS SHOULD ONLY BE USED FOR LIGHTLY SOILED AND/OR
> SMALLER VOLUMES OF LAUNDRY. IN OTHER CASES, THE PROGRAM WILL GIVE POOR WASHING
> QUALITY.

Machine type		FX65	FX80	FX105	FX135	FX180	FX240	FX280
Programmable water level units related to the amount of water in the tub								
Programmed water LEVEL (Water level height in units)	7					8 ℓ	14,5 ℓ	11,1 ℓ
	8					10 ℓ	17,5 ℓ	14,1 ℓ
	9	9,5 ℓ	10,5 ℓ	10,5 ℓ	12 ℓ	12,5 ℓ	21 ℓ	17,2 ℓ
	10	11 ℓ	12 ℓ	12 ℓ	14,5 ℓ	14,5 ℓ	24 ℓ	21,1 ℓ
	11	① 13 ℓ	13,5 ℓ	14 ℓ	16,5 ℓ	17 ℓ	28 ℓ	24,4 ℓ
	12	② 14,5 ℓ	① 15,5 ℓ	① 16 ℓ	① 19 ℓ	19,5 ℓ	31,5 ℓ	28,4 ℓ
	13	③ 16 ℓ	② 17 ℓ	② 18 ℓ	② 21,5 ℓ	22 ℓ	33,5 ℓ	32,3 ℓ
	14	④ 18 ℓ	③ 19 ℓ	③ 20 ℓ	24 ℓ	25 ℓ	37 ℓ	36,5 ℓ
	15	19,5 ℓ	④ 21 ℓ	④ 22 ℓ	③ 27 ℓ	28 ℓ	41 ℓ	41 ℓ
	16	21,5 ℓ	23 ℓ	24,5 ℓ	④ 29,5 ℓ	① 31,5 ℓ	① 45 ℓ	① 44,8 ℓ
	17	23,5 ℓ	25,5 ℓ	27 ℓ	32,5 ℓ	② 34,5 ℓ	② 48,5 ℓ	② 49,9 ℓ
	18	25,5 ℓ	27,5 ℓ	29,5 ℓ	36 ℓ	③ 38 ℓ	③ 52 ℓ	③ 54,9 ℓ
	19	27,5 ℓ	29,5 ℓ	32 ℓ	39 ℓ	④ 41 ℓ	④ 54,5 ℓ	④ 59,8 ℓ
	20	29 ℓ	31,5 ℓ	34 ℓ	42,5 ℓ	44,5 ℓ	59,5 ℓ	64,9 ℓ
	21	31 ℓ	33,5 ℓ	37 ℓ	45,5 ℓ	48 ℓ	64 ℓ	69,4 ℓ
	22	33,5 ℓ	36 ℓ	39,5 ℓ	48,5 ℓ	51,5 ℓ	68,5 ℓ	74,4 ℓ
	23	36 ℓ	38,5 ℓ	42 ℓ	52 ℓ	55 ℓ	73 ℓ	80 ℓ
	24	38,5 ℓ	40,5 ℓ	45 ℓ	55 ℓ	58,5 ℓ	77,5 ℓ	85,1 ℓ
	25	40,5 ℓ	43 ℓ	48 ℓ	58,5 ℓ	62,5 ℓ	83 ℓ	90 ℓ
	26	43 ℓ	46 ℓ	51 ℓ	62 ℓ	66 ℓ	86,5 ℓ	95,4 ℓ
	27	46 ℓ	49 ℓ	54 ℓ	65 ℓ	69,5 ℓ	91 ℓ	100,7 ℓ
	28	49 ℓ	52 ℓ	57 ℓ	68,5 ℓ	73 ℓ	95,5 ℓ	104,9 ℓ
	29	52 ℓ	55 ℓ	60,5 ℓ	71,5 ℓ	76,5 ℓ	100,5 ℓ	110,1 ℓ
	30			63,5 ℓ	75 ℓ	80 ℓ	105 ℓ	115,7 ℓ

① **Economic Low Level**   ③ **Normal Low Level**
② **Economic High Level**   ④ **Normal High Level**

Machine type	RX80M	RX105M	RX135M	RX180N RX180M	RX240N RX240M	RX280N RX280M
Programmable water level units related to the amount of water in the tub						
7				7,6 ℓ	9,1 ℓ	8,2 ℓ
8				9,6 ℓ	11,6 ℓ	10,9 ℓ
9	9 ℓ	10 ℓ	10,5 ℓ	12 ℓ	14,5 ℓ	13,6 ℓ
10	10,5 ℓ	12 ℓ	12,5 ℓ	14,3 ℓ	17 ℓ	16,9 ℓ
11	12,5 ℓ	14 ℓ	15,5 ℓ	16,6 ℓ	20,3 ℓ	20,3 ℓ
12	① 14,5 ℓ	① 16 ℓ	① 17,5 ℓ	19,3 ℓ	23,6 ℓ	24,1 ℓ
13	② 16 ℓ	② 18 ℓ	② 20 ℓ	21,7 ℓ	27,3 ℓ	27,8 ℓ
14	③ 18,5 ℓ	③ 20 ℓ	22,5 ℓ	24,8 ℓ	31,3 ℓ	31,8 ℓ
15	④ 20,5 ℓ	④ 22,5 ℓ	③ 25,5 ℓ	27,5 ℓ	34,6 ℓ	35,8 ℓ
16	22,5 ℓ	25 ℓ	④ 28,5 ℓ	① 30,5 ℓ	① 38,6 ℓ	① 40,2 ℓ
17	25 ℓ	27,5 ℓ	31 ℓ	② 33,8 ℓ	② 42,6 ℓ	② 44,6 ℓ
18	27 ℓ	30 ℓ	34 ℓ	③ 37,3 ℓ	③ 46,8 ℓ	③ 49,4 ℓ
19	29 ℓ	32 ℓ	37 ℓ	④ 40,8 ℓ	④ 51,4 ℓ	④ 54 ℓ
20	31 ℓ	35 ℓ	40 ℓ	44 ℓ	54,5 ℓ	59 ℓ
21	33 ℓ	37 ℓ	43 ℓ	47,5 ℓ	59,5 ℓ	63,6 ℓ
22	35,5 ℓ	40 ℓ	46 ℓ	50,4 ℓ	63,7 ℓ	68,5 ℓ
23	37,5 ℓ	42,5 ℓ	49,5 ℓ	53,9 ℓ	68,5 ℓ	73,6 ℓ
24	40 ℓ	45 ℓ	53 ℓ	57,4 ℓ	73 ℓ	78,5 ℓ
25	42 ℓ	47,5 ℓ	56 ℓ	61,1 ℓ	77,7 ℓ	83,8 ℓ
26	44,5 ℓ	50 ℓ	59,5 ℓ	64,5 ℓ	82,3 ℓ	89,7 ℓ
27	46,5 ℓ	52,5 ℓ	62,5 ℓ	68,3 ℓ	86,7 ℓ	94,6 ℓ
28	48,5 ℓ	55 ℓ	65,5 ℓ	71,7 ℓ	91,4 ℓ	99,7 ℓ
29	51 ℓ	57,5 ℓ	68,5 ℓ	75,4 ℓ	96,1 ℓ	104,9 ℓ
30		60 ℓ	72 ℓ	79,1 ℓ	100,8 ℓ	110,5 ℓ

Left row label: **Programmed water LEVEL (Water level height in units)**

① **Economic Low Level**   ③ **Normal Low Level**
② **Economic High Level**   ④ **Normal High Level**

		Programmable water level units related to the amount of water in the tub	
Machine type		**FXB180**	**FXB240**
Programmed water LEVEL (Water level height in units)	7		
	8		
	9	14 ℓ	14,1 ℓ
	10	16,7 ℓ	17,2 ℓ
	11	19,7 ℓ	20,5 ℓ
	12	22,6 ℓ	24,2 ℓ
	13	① ② 26 ℓ	① ② 28,1 ℓ
	14	29,4 ℓ	32 ℓ
	15	32,8 ℓ	36,1 ℓ
	16	36,2 ℓ	40,5 ℓ
	17	③ 39,9 ℓ	③ 44,9 ℓ
	18	43,5 ℓ	49,6 ℓ
	19	47,3 ℓ	54,2 ℓ
	20	④ 51,3 ℓ	④ 59,1 ℓ
	21	55,1 ℓ	64 ℓ
	22	59,3 ℓ	69 ℓ
	23	63,3 ℓ	74 ℓ
	24	67,4 ℓ	79,5 ℓ
	25	71,5 ℓ	84,6 ℓ
	26	75,7 ℓ	89,7 ℓ
	27	80,1 ℓ	95,3 ℓ
	28	84,4 ℓ	100,7 ℓ
	29	88,8 ℓ	106,1 ℓ
	30	93,5 ℓ	111,6 ℓ

① **Economic Low Level**   ③ **Normal Low Level**
② **Economic High Level**   ④ **Normal High Level**

Programmable water level units related to the amount of water in the tub

Machine type	FS33	FS40	FS55	FS800	FS1000	FS1200
27				130 ℓ		
28				138 ℓ		
29				143 ℓ		
30				150 ℓ	145 ℓ	162 ℓ
31				157 ℓ	152 ℓ	173 ℓ
32				165 ℓ	① 160 ℓ	183 ℓ
33	27 ℓ			① 172 ℓ	168 ℓ	193 ℓ
34	30 ℓ	43 ℓ	45 ℓ	180 ℓ	180 ℓ	① 200 ℓ
35	33 ℓ	46 ℓ	49 ℓ	189 ℓ	191 ℓ	212 ℓ
36	36 ℓ	50 ℓ	53 ℓ	② 200 ℓ	② 201 ℓ	224 ℓ
37	39 ℓ	54 ℓ	57 ℓ	210 ℓ	210 ℓ	234 ℓ
38	① 43 ℓ	① 58 ℓ	① 62 ℓ	221 ℓ	219 ℓ	242 ℓ
39	47 ℓ	62 ℓ	66 ℓ	229 ℓ	228 ℓ	② 251 ℓ
40	② 51 ℓ	② 66 ℓ	② 70 ℓ	237 ℓ	237 ℓ	264 ℓ
41	55 ℓ	70 ℓ	76 ℓ	245 ℓ	249 ℓ	275 ℓ
42	59 ℓ	74 ℓ	82 ℓ	256 ℓ	264 ℓ	290 ℓ
43	63 ℓ	78 ℓ	88 ℓ	268 ℓ	③ 274 ℓ	303 ℓ
44	67 ℓ	83 ℓ	95 ℓ	③ 277 ℓ	289 ℓ	315 ℓ
45	70 ℓ	88 ℓ	101 ℓ	285 ℓ	298 ℓ	325 ℓ
46	74 ℓ	93 ℓ	107 ℓ	293 ℓ	305 ℓ	③ 334 ℓ
47	78 ℓ	③ 99 ℓ	③ 115 ℓ	305 ℓ	④ 316 ℓ	350 ℓ
48	③ 83 ℓ	105 ℓ	122 ℓ	316 ℓ	327 ℓ	363 ℓ
49	88 ℓ	111 ℓ	130 ℓ	④ 330 ℓ	340 ℓ	372 ℓ
50	④ 93 ℓ	④ 118 ℓ	138 ℓ	342 ℓ	348 ℓ	383 ℓ
51	97 ℓ	123 ℓ	144 ℓ	353 ℓ	358 ℓ	392 ℓ
52	101 ℓ	128 ℓ	④ 150 ℓ	360 ℓ	368 ℓ	④ 407 ℓ
53	105 ℓ	133 ℓ	156 ℓ	368 ℓ	380 ℓ	420 ℓ
54	109 ℓ	139 ℓ	164 ℓ	382 ℓ	396 ℓ	436 ℓ
55	114 ℓ	145 ℓ	172 ℓ	393 ℓ	405 ℓ	451 ℓ
56	119 ℓ	152 ℓ	181 ℓ	401 ℓ	415 ℓ	460 ℓ
57	123 ℓ	158 ℓ	188 ℓ	410 ℓ	425 ℓ	471 ℓ
58	127 ℓ	164 ℓ	195 ℓ	420 ℓ	439 ℓ	480 ℓ
59	132 ℓ	171 ℓ	203 ℓ	431 ℓ	454 ℓ	497 ℓ
60	137 ℓ	175 ℓ	210 ℓ	445 ℓ	467 ℓ	514 ℓ
61	142 ℓ	179 ℓ	218 ℓ	453 ℓ	481 ℓ	524 ℓ
62	148 ℓ	184 ℓ	226 ℓ	462 ℓ	490 ℓ	533 ℓ
63	153 ℓ	191 ℓ	233 ℓ	471 ℓ	500 ℓ	542 ℓ
64	158 ℓ	198 ℓ	240 ℓ	483 ℓ	509 ℓ	560 ℓ
65	163 ℓ	205 ℓ	248 ℓ	495 ℓ	525 ℓ	576 ℓ
66	168 ℓ	211 ℓ	256 ℓ	503 ℓ	540 ℓ	585 ℓ
67	173 ℓ	217 ℓ	265 ℓ	511 ℓ	553 ℓ	594 ℓ
68	179 ℓ	224 ℓ	274 ℓ	520 ℓ	567 ℓ	604 ℓ
69	184 ℓ	229 ℓ	280 ℓ	533 ℓ	578 ℓ	620 ℓ
70	189 ℓ	234 ℓ	287 ℓ	546 ℓ	587 ℓ	637 ℓ
71	195 ℓ	239 ℓ	294 ℓ	555 ℓ		
72	200 ℓ	246 ℓ	302 ℓ	565 ℓ		
73	206 ℓ	253 ℓ	310 ℓ			
74	212 ℓ	261 ℓ	318 ℓ			
75	216 ℓ	266 ℓ	326 ℓ			
76	220 ℓ	272 ℓ	334 ℓ			
77	225 ℓ	278 ℓ	343 ℓ			
78	230 ℓ	282 ℓ	350 ℓ			
79	235 ℓ	287 ℓ	358 ℓ			
80	240 ℓ	292 ℓ	366 ℓ			

Programmed water LEVEL (Water level height in units)

① Economic Low Level   ③ Normal Low Level
② Economic High Level   ④ Normal High Level

Machine type	Minimum programmable level	Normal Low Level Default value	Normal High Level Default value	Maximum programmable level
FX65	9	13	14	29
FX80	9	14	15	29
FX105	9	14	15	30
FX135	9	15	16	30
FX180	7	18	19	30
FX240	7	18	19	30
FX280	7	18	19	30
RX80M	9	14	15	29
RX105M	9	14	15	30
RX135M	9	15	16	30
RX180N, RX180M	7	18	19	30
RX240N, RX240M	7	18	19	30
RX280N, RX280M	7	18	19	30
FXB180	9	17	20	30
FXB240	9	17	20	30
FS33	33	48	50	80
FS40	34	47	50	80
FS55	34	47	52	80
FS800	27	44	49	72
FS1000	30	43	47	70
FS1200	30	46	52	70

Tab.3.5.A. Programmable water Level

Machine type	Wash Speed			Spin Speed				Low spin speed
	default RPM	min RPM	max RPM	default RPM	min RPM	locking RPM	max RPM	default RPM
FX65	50	10	60	1120	150	91-149	1165	250
FX80	50	10	60	1120	150	91-149	1165	250
FX105	46	10	60	1035	150	91-149	1075	250
FX135	46	10	60	1035	150	91-149	1075	250
FX180	42	10	60	940	150	91-149	980	250
FX240	42	10	60	940	150	91-149	980	250
FX280	42	10	55	880	150	91-149	915	250
RX80M	50	10	60	780	150	91-149	820	250
RX105M	46	10	60	720	150	91-149	760	250
RX135M	46	10	60	720	150	91-149	760	250
RX180N	42	10	55	440	150	91-149	490	250
RX240N	42	10	55	440	150	91-149	490	250
RX280N	42	10	55	440	150	91-149	490	250
RX180M	42	10	55	640	150	91-149	690	250.
RX240M	42	10	55	640	150	91-149	690	250
RX280M	42	10	55	640	150	91-149	690	250
FXB180	42	10	60	900	150	91-149	939	370
FXB240	42	10	60	900	150	91-149	939	370
FS33	038	010	045	790	75	351-449	830	550
FS40	038	010	045	790	75	351-449	830	550
FS55	038	010	045	790	75	351-449	830	550
FS800	036	010	045	720	75	351-449	750	550
FS1000	033	010	045	690	75	351-449	722	550
FS1200	032	010	045	660	75	351-449	695	550

Tab.3.5.B. Speed of machines with frequency inverter.

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❑ Programming the Wash Speed

- ◆ Standard reversing wash speed is between ≅ 40 and 50 RPM. (≅ Verify exact value at table 3.5.B.)
- ◆ For some special applications the drum should only turn very slowly.

– Speed Limits
- ◆ The minimum programmable wash speed is 10 RPM.
- ◆ The maximum programmable wash speed is 40 - 60 RPM, depending on machine size.

❑ Programming Extraction speed

Extraction ≅ [150 - 1165] RPM

- ◆ Between 90 and 150 RPM (≅ Verify exact value at table 3.5.B.) it's not allowed to program a steady speed, as the machine could VIBRATE TOO MUCH.

– Speed Limits
- ◆ Check table 3.5.B with the minimum and maximum speed limits. The limits differ depending on the maximum allowed g-force at high spin for each washing machine type.

❑ Programming Supplies

- ◆ Up to 4 Supplies can be programmed at the same time in a sequence.
- ◆ For front soap dispenser washing machines, supplies A, B, C, D and E have to be programmed to inject the soap by the boxes.
- ◆ If Liquid soap pumps have been installed on the washing machine, then these pumps will be activated by programming a time value for the corresponding supply signal 1, 2, 3, 4, 5, 6, 7, 8.

– Time Limits
- ◆ The maximum programmable time is 99 Seconds
- ◆ If the time is 0 Seconds then the supply will NOT be activated at the wash process.

⚠ **ATTENTION!**
IF FOR SOME SPECIAL APPLICATION MORE THAN 4 SUPPLIES MUST BE PROGRAMMED IN THE SAME SEQUENCE, THIS CAN BE SOLVED BY PROGRAMMING THE SAME SEQUENCE TWICE; ONE AFTER THE OTHER. SPLIT THE WATER LEVEL (SO IT WILL TAKE WATER FOR THE SECOND FILL, say 60%, 100%), STEP TIME, AND THE NUMBER OF SUPPLIES, OVER THE TWO SUBSEQUENT SEQUENCES. PROGRAM A „NO DRAIN" BETWEEN THE TWO SEQUENCES TO AVOID DRAINING THE WATER. SET TEMPERATURE THE SAME FOR BOTH PARTS.

❑ Programming the Motor On and Off times for Reversing

- ◆ The standard Reversing Motor On and Off times at Wash speed is 12 Seconds On and 3 Seconds Off.
- ◆ For Delicates and Woolens it's recommended to program a gentle wash action with a Reversing On time of 3 Seconds and an Off time of 12 Seconds.

❑ Programming the Sequence time.

- ◆ The sequence time starts running after the water level is reached.
- ◆ If wait for Temperature has been selected, the sequence time starts only running once the programmed temperature has been reached at the heating process.
- ◆ For a Cooldown Sequence, the programmed time corresponds with the time for decreasing the water temperature.

Recommendation :

At least a cooldown of 3 minutes must be programmed. And to avoid the shrinking of the garments, it's recommended to program the time so that the temperature will decrease with about 3°C for each minute.

⚠ **ATTENTION!**
FOR A SPRAY SEQUENCE, IF A SUPPLY HAS BEEN PROGRAMMED, THE SEQUENCE TIME CORRESPONDS WITH THE PROGRAMMED SUPPLY TIME.

❑ Signal

- ◆ The signal should be programmed when a running wash cycle has to be interrupted.
- ◆ The Buzzer will be activated to alert the operator.
- ◆ For most cases, the operator interrupts a program to fill the soap box an additional time.
- ◆ The program interruption will always occur at the end of a step.

4. INITIALIZING THE MACHINE

Initializing the machine goes in four steps:

1. Install the machine mechanically. (See Installation Manual)
2. Select the machine specific settings in the Configuration Menu.
3. Select the operator specific settings in the Initialization Menu.
4. Adjust standard Programs or create new Programs at the Program Menu.

⚠ **ATTENTION!**
THE INITIALIZATION SHOULD BE PERFORMED BY QUALIFIED PERSONNEL ONLY. AN INCORRECT INITIALIZATION MAY CAUSE SERIOUS INJURIES AND SERIOUS DAMAGE TO THE MACHINE!

⚠ **ATTENTION!**
BEFORE MAKING CHANGES IN THE CONFIGURATION AND INITIALIZATION MENU READ THIS MANUAL CAREFULLY.
CHANGES YOU HAVE MADE WILL INFLUENCE THE WASH PROGRAM PROCESSES.
WE RECOMMEND BEFORE MAKING CHANGES TO CAREFULLY WRITE DOWN WHAT THE PREVIOUS SETTINGS WERE.

AS THE WASH COMPUTER IS USED FOR A WHOLE RANGE OF WASHING MACHINES, AFTER THE INSTALLATION OF A NEW WASH COMPUTER, YOU NEED TO PROGRAM MACHINE SPECIFIC SETTINGS INTO THE CONFIGURATION MENU. SEE PARAGRAPH 4.2.

AT THE INSTALLATION OF NEW SOFTWARE, AFTER LOADING THE FACTORY SETTINGS (SEE PARAGRAPH 4.2) YOU NEED TO CHECK THE DEFAULT SETTINGS ONE BY ONE TO FIND OUT IF THEY CORRESPOND WITH THE SETUP AS YOU PREFER.
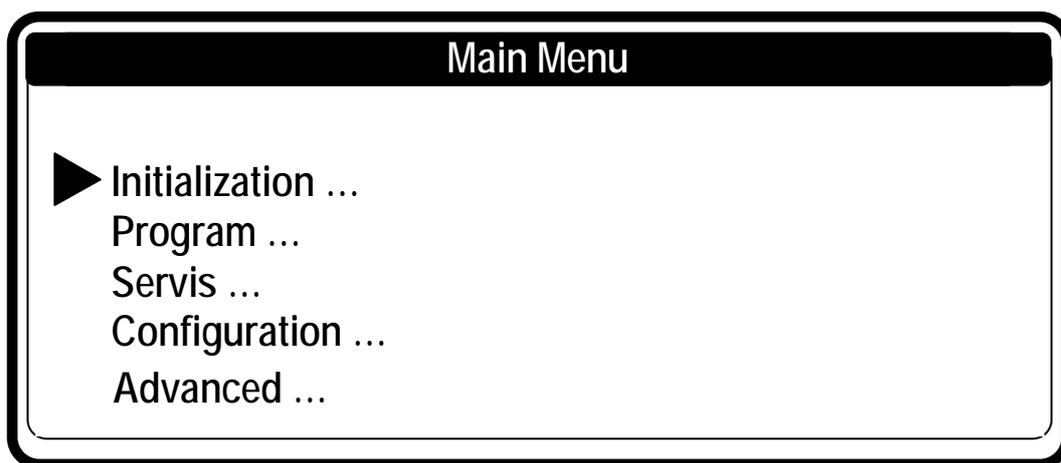
THE CONFIGURATION AND INITIALIZATION OF THE WASHING MACHINE HAS BEEN DONE AT THE FACTORY. FOR THE CREATION OF NEW PROGRAMS, NO CHANGES HAVE TO BE MADE IN THE INITIALIZATION OR CONFIGURATION MENUS.

4.1 INITIALIZATION MENU
❏ HOW TO GET INTO THE INITIALIZATION MENU

The initialization menu can only be accessed when the machine is in standby (the power is switched on, but no program is started).

- ◆ **Select Cycle** is displayed.
- ◆ Switch the machine to the setup mode (see chapter 3.3).
- ◆ The Main menu is now available.
- ◆ The Initialization Menu is the first Menu.

```
┌─────────────────────────────────────────────┐
│                 Main Menu                     │
├─────────────────────────────────────────────┤
│                                               │
│  ▶ Initialization …                           │
│     Program …                                 │
│     Servis …                                  │
│     Configuration …                           │
│     Advanced …                                │
│                                               │
└─────────────────────────────────────────────┘
```

- ◆ Press the **ENTER** button to make your selection.
- ◆ Now you will see the first menu item.
- ◆ By pressing the **ARROW DOWN** or **UP** button you can select the menu items one by one.

Menu Item	Default	Info	Limits
Language	English	Language selection: English, Spanish, French,…	List
Service Interval	3000	Number of cycles at which maintenance is required. 3000 : top soap dispenser machines 9990 : front soap dispenser machines 9999: the servicing interval is ignored	1 - 9999
Buzzer Time	5 Sec	The time the Buzzer is beeping at end of wash cycle while „Unload" is displayed.	0 - 99
Allow Advance	Yes	The Advance function allows to Skip a Sequence or to extend & decrease the time of a sequence.	No / Yes
Automatic Cooldown	Yes	Automatic Cooldown selection. (see info (*)).	No / Yes
Wait for Temperature	Yes	Wash Process time is put on Hold as long as the programmed temperature hasn't been reached. Once the temperature has been reached, the wash cycle time will decrease.	No / Yes
Manual Override	Yes	Activates special functions in the Servis Info menu. The operator can directly operate the water inlet, drain, heating and spin speed functions. ⚠ **Attention!** **The particular functions can only be used if the safety conditions are fulfilled. For example: if there is no water in the drum, the heating function cannot be activated.**	No / Yes

Menu Item	Default	Info	Limits
Temperature Balance	No	The right water temperature at the water fill process is obtained by switching the cold and hot water inlet valves. For high temperatures extra heating will be required after the fill process. For some special customer applications, it is allowed to switch off the automatic Temperature Balance control. **FS33, FS40, FS55, FS800, FS1000, FS1200: Yes**	No / Yes
Motor On Time	12 Sec	At normal wash action, drum turns for 12 seconds. Recommended 3 Sec for Gentle wash action. (= suggested values for the program menu)	1 - 99 Sec
Motor Off Time	3 Sec	At normal wash action, drum is stopped for 3 seconds. Recommended 12 Sec for Gentle wash action. (= suggested values for the program menu) **FS800, FS1000, FS1200: 5s off time**	1 - 99 Sec
Smart Motion	No	This option decreases the drum R.P.M. during water filling therefore the laundry absorps water more quickly and washing efficiency increases. **FS33, FS40, FS55, FS800, FS1000, FS1200: Yes**	No / Yes
Hot Water Heater Temp.	60 °C	The Hot Water Heater Temperature should correspond with the hot water supply of the washing machine. The value of the hot water supply temperature is required to obtain a correct bath temperature at the water fill process.	50 - 80 °C
Temp. Overshoot Prot.	0 %	To avoid temperature overshoot at steam heating, the % value is the reduced temperature at which the heating is switching off before reaching the target value. In the tub cold and hot water gets mixed and if after 30 seconds the programmed target temperature is not reached, the heating will be started again.	0 - 30 %
Max. Heating Time	60 Min	A diagnostic message is generated by the wash computer when the water hasn't reached the programmed temperature in 60 Minutes. (Err 14) ⚠ **Attention!** **If 99 minutes has been selected, NO error message will be generated at all, even if the heating time exceeds 99 minutes. The machine will only stop heating when the programmed temperature has been reached.**	10 - 90 Min

Menu Item	Default	Info	Limits
Max. Water Fill Time	10 Min	A diagnostic message is generated by the wash computer when the water hasn't reached the programmed level in 10 Minutes. (Err 11) ⚠ **Attention!** **If 99 minutes has been selected, NO error message will be generated at all, even if the heating time exceeds 99 minutes. The machine will only stop filling when the programmed water level has been reached.**	5 - 99 Min
Overfill Detection	5 units	A diagnostic message is generated by the wash computer when the water has reached the programmed level + 5 units. (Err 12) ⚠ **Attention!** **It's strongly recommended that the heating power of the steam installation has enough power to heat the bath quickly. Otherwise the tub will be filled with extra water and an error message will occur that the machine takes more then 5 units extra water. This will also increase the water, energy and detergent supply consumption.** To solve the problem in another way, reduce the programmed target water level so that less energy is needed to heat up the bath and with the extra water of the condensed steam you will wash with a normal amount of water. **FS33, FS40, FS55 - 10 units** **FS800, FS1000, FS1200 - 25 units**	3 - 25 units
External Wait Control	Off	Liquid soap supply system: Slection for a washing machine connected to a central liquid soap supply system. Some washing machines are connected to a central liquid soap supply system which can only provide 1 washing machine at a time with liquid soap. This central pump system is able to let Wait the washing machine before continuing the wash process until the central pump system is free to pump the liquid soap supply into the machine. Heating, (for installations with limited power supply): You can disable the heating system of the machine by an external signal. The heating will switch on again and the wash process will continue as soon as the external signal is switched off. **Wait:** External signal suspends the whole wash process until the external signal gets switched off. **Time:** External signal stops the count-down of washing process. All functions of wash cycle continue. When the external signal stops, the count-down will continue in a standard manner.	Off / Soap / Heating / Wait Time

Menu Item	Default	Info	Limits
Door Position Dirty Tune Door Position Hyg. Tune	5 5	FXB only At the end of the wash cycle the drum is automatically positioned for loading & unloading. By the value „Door Position Dirty Tune" & „Door Position Hyg. Tune", the angle between the drum door and cabinet door can be adjusted. (To allow easier loading & unloading.)	0 - 9
Prewash Soap Info	Yes	Selection whether the information on soap dosage for prewash should be shown or not.	No / Yes
Wash Liquid Soap Info	Yes	Selection whether the information on liquid soap dosage for the main wash should be shown or not.	No / Yes
Main Water Pressure	High	Front Soap Dispenser machines only. If the main water supply pressure is low, it can happen that the plastic soap boxes don't fall during the water intake sequence. In this case you should select „Main Water Pressure" : „Low" (main water inlet is closed before the plastic soap box falls down) „High" => the main water inlet stays open.	Low / Medium / High
Step info	No	Selection whether the current operating step shall be viewed on the display.	No / Yes
Exit		Return to Main Menu	

(*) Automatic Cooldown

- To avoid mechanical temperature shock and to extend the life time of your washing machine, after a hot wash, cold water is injected bit by bit. As a result at the end of the hot wash, the temperature will be lowered to about 65°C.
- The automatic cooldown function will only be functional if a hot wash with a temperature above 65°C has been programmed and if a cold water inlet valve is programmed in the next step. When a Cooldown sequence has been programmed, the automatic cooldown will not function.
- The automatic cooldown differs from a normal cooldown sequence. The purpose of a normal cooldown sequence is to avoid the shrinking of the garments. (Takes more time)
See Chapter 5.

4.2 CONFIGURATION MENU

This electronic wash computer has been specially constructed for a wide range of washing machines.
For that reason it must be individually set up with important parameters for various machine types.
Basic machine adjusting is made in the factory.

⚠ **WARNING!**
ONLY A QUALIFIED TECHNICIAN SHOULD CHANGE THE CONFIGURATION SET UP. AN INCORRECT CONFIGURATION CAN CAUSE INJURIES AND SERIOUS MACHINE DAMAGE.

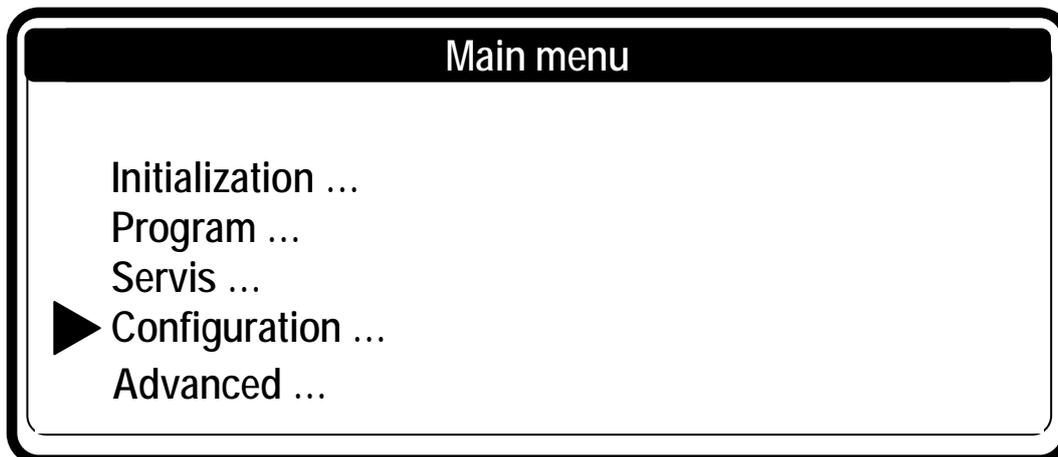### ❏ HOW TO GET INTO THE CONFIGURATION MENU

The configuration menu can only be accessed when the machine is in standby (the power is switched on, but no program is started).

SELECT CYCLE is displayed.

Switch the machine to the setup mode (see chapter 3.3).

The Main menu is now available.

Press the **ARROW DOWN** button to select the Configuration Menu.

```
                    Main menu

        Initialization …
        Program …
        Servis …
    ▶   Configuration …
        Advanced …
```

Press the **ENTER** button to make your selection.

For the Configuration Menu a Pass-Word is required.

```
        Configuration Menu
    ▶ Password              _ _ _
```
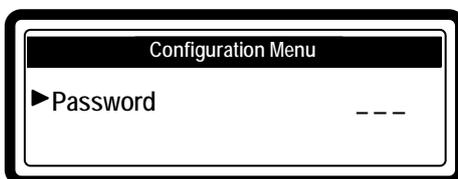
Insert **3 2 1** and Press the **ENTER** button

Now you will see the first menu item.

By pressing the **ARROW DOWN** or **UP** button you can select the menu items one by one.

Menu Item	Default	Info	Limits
Machine Type Are You Sure ?	FX65 No	The machine type was set by the manufacturer and it cannot be changed. Machine type setting can only be done on a newly installed control board which has not been configured yet. Select the right machine type. ☞ Look at Machine Name Plate at the rear of the washing machine. ☞ Confirm selection of the machine type. ⚠ **Attention!** **Reset Defaults must (only) be executed for each new installed wash Computer and after selecting a new machine type, to ensure correct EEPROM memory configuration!** ⚠ **Attention!** **MAKE SURE THAT YOU HAVE SELECTED THE CORRECT MACHINE TYPE, OTHERWISE THE MACHINE WILL NOT FUNCTION PROPERLY.**	List No / Yes
Reset Defaults ? Are You Sure ?	No No	All the Initialization and Configuration Menu Settings will be reset to its default Factory settings. Should only be used at SETUP of a new wash computer. ☞ Confirm that you want to Reset Defaults. ⚠ **Attention!** **Reset Defaults must (only) be executed for each new installed wash Computer and after selecting a new machine type, to ensure correct EEPROM memory configuration!** ⚠ **Attention!** **BE SURE YOU WANT TO ERASE THE OLD SETTINGS, AS THEY CAN'T BE RECAPTURED.**	No / Yes No / Yes

Menu Item	Default	Info	Limits
Brightness Display	12	The brightness of the display is changed by adjusting the contrast of the optimal viewing angle.	1 - 20
Inverter Menu…		⚠ **Attention!** **The washing machine can only operate correctly if the right inverter (same as washing machine) has been set in the Configuration menu.**	
Supply Voltage XXXXXXX (Inverter Type)		Select the right inverter. ☞ Look at Machine Name Plate on the rear of the washing machine. ☞ Select the Supply Voltage as shown on the Machine Name Plate. The frequency inverter will be selected by default. ☞ Check Inverter Type ⚠ **Attention!** **The washing machine can only perform properly if the inverter contains the right list of inverter parameters. By the wash computer it is possible to load the list of parameters in the inverter. Make sure that the correct Supply Voltage has been selected first.**	List

Load Param…
  Are You Sure ?
	No	⚠ **Attention!**
		Loading parameters is only required after installing a new inverter.
		
		Load the inverter Parameters.
		☞ Door must be closed.
		☞ Check if the SETUP is correct.
		  - Parameter List Version
		  - machine type, inverter type, softw version
		☞ Confirm that you want to load the inverter Parameters.
		☞ Check status screen while parameters are loaded.
		  - Sending Param.: 0 - 100 %
		  - Verify Param: 0 - 100 %
			No / Yes

Menu Item	Default	Info	Limits

Total Number of Inlets	2	A washing machine can be delivered with 2 or 3 main water Inlet supplies.
		A machine with 2 main water inlet supplies is prepared for : - soft warm water
		      - soft cold water
		A machine with 3 main water inlet supplies is prepared for : - soft warm water
		      - soft cold water
		      - hard or recycled cold water
		Depending on this selection other inlet valves will be suggested at the final rinse sequence.
		Depending on this selection other inlet valves will be programmed when the standard programs are loaded.
		FS33, FS40, FS55, FS800, FS1000, FS1200: 3
			2 / 3

Drain Val.1 Inverted	No	If a drain valve 1 with inverted function (normally closed) or a pump is used on the machine, then this item must be set to "Yes".	No / Yes
Drain Valve 2	No	Some machines function with water recovery are equipped with a second drain valve. If this second drain valve is a normal Closed drain Valve, then drain valve 2 must be Selected Yes.	No / Yes
Water Recycle Inlets	0	**Front Soap Dispenser machines only.** First select menu item „Drain valve 2". By selecting „Water Recycle Inlets" 1 / 2 / 3 it's possible to program 1 / 2 / 3 extra water inlet valves I4, I5, I6 in the wash sequences and 3 extra outlet vales for water recycling combined with pump in the drain-extraction sequences. ⚠ **Attention!** **Some machines need additional electrical components to complete installation Water Recovery!** FS800, FS1000, FS1200: only two inlet valves of recycled water can be set.	0 / 1 / 2 / 3
Supply Sign. A	Box	**Front Soap Dispenser machines only.** If equipped with soap supply pump for supply signals A, B, C, D & E , the signal must be set liquid, then NO pulse will interrupt the soap supply signal. Supply Sign A corresponds with the First Soap Box. … Supply Sign E corresponds with the Fifth Soap Box.	Box / Liquid
Liquid Soap Supply	No	Some washing machines function with external Liquid soap supplies and others do not. To program External Liquid soap supplies at the Program Menu, this selection must be Yes.	No / Yes

Menu Item	Default	Info	Limits
Min. Level Start Sup.	0 units	Soap Supply signals are only started when the pre-set „Minimum water level Start Supply" has been reached. Minimum programmable level, see water consumption table 3.5.A.	0 - Minimum progr. level
Temperature	Celsius	Select Celsius or Fahrenheit, depending if you prefer that the temperature is displayed in degrees Celsius or degrees Fahrenheit.	Celsius / Fahrenheit
Full Heating	1 %	This function allows to reduce the energy consumption at long hot washes. When the heating has reached the programmed target temperature, heating will be restarted when the bath temperature goes below the temperature hysteresis. - Full Heating 100 %, the heating will be restarted until the end of the hot wash sequence. - Full Heating 1 %, the heating will not be restarted once the target temperature has been reached. - Full Heating 67 %, the heating will be switched Off 1/3 before the end of the hot wash sequence. ⚠ **Attention!** **In case of a hygienic program, 100% must be selected.** FS33, FS40, FS55, FS800, FS1000, FS1200: 67%	1 - 100 %
Wet Cleaning	No	Selection Wet Cleaning allows to program water levels below the standard minimum programmable levels. The heating will not be functional for a water level below the standard minimum programmable water level.	No / Yes
Ultrabal.Settings	10	**FX machines only:** Setting the limit of unbalance detection during the spinning sequence.	10 / 15
Non-barrier Model	No	**FXB machines only** (Medical Barrier Washers). If the machine is used as a non-barrier model (loading and unloading at the same side) then Yes must be selected.	No / Yes
Erase All Wash Prog ? Are You Sure ?	No No	Allows erasing all the wash programs at once. To be used only at the installation of a new wash computer and if you want to ensure that no old programs stay in the memory of the wash computer anymore. All the memory Blocks will be cleared one by one. ⚠ **Attention!** **Erase All Wash Programs must be executed for each new installed wash Computer, to ensure correct EEPROM memory configuration!**	No / Yes

Menu Item	Default	Info	Limits
Load Standard Programs ?	No	To use the 20 wash computer Standard Wash programs, these standard programs must be loaded into the Wash Program Memory of the wash computer.	No / Yes
Language	English	Choose the language of the Wash Program name. The Wash Program name shows to the operator the type of wash process.	List
Load Program 1 - 20 ?	No		No / Yes
Load Program >20 ?	No	A confirmation is asked to load Standard Programs. Standard programs 1 - 20 see chapter 7. It is also possible to load 37 dedicated programs. ⚠ **Attention!** **After selecting a different machine type, best is to load again the Standard Programs in memory, this to avoid that the washing machine runs with wrong water levels, drum speed.**	No / Yes
Communication Addr.	255	Each washing machine in the serial RS485 washing machine communication network must have a unique Communication Address. (Master - Slave) ⚠ **Attention!** **If 2 or more machines have the same Communication Address the communication network will not function properly.**	1 - 255
Exit		Return to Main Menu	

4.3 ADVANCED MENU

Some special wash computer applications are only accessible by the Advanced Menu.
In the advanced menu you can find the not frequently used, optional and special applications.

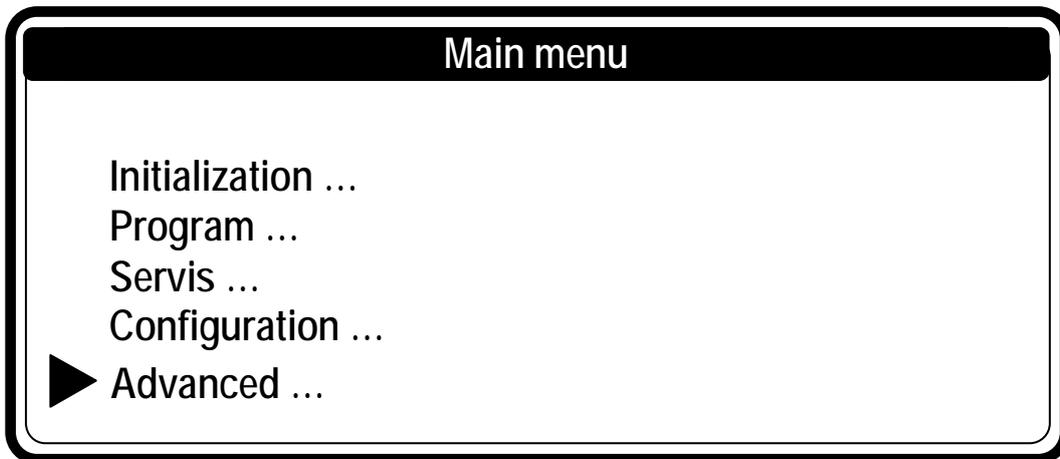### ❑ HOW TO GET INTO THE ADVANCED MENU

The Advanced menu can only be accessed when the machine is in standby (the power is switched on, but no program is started).
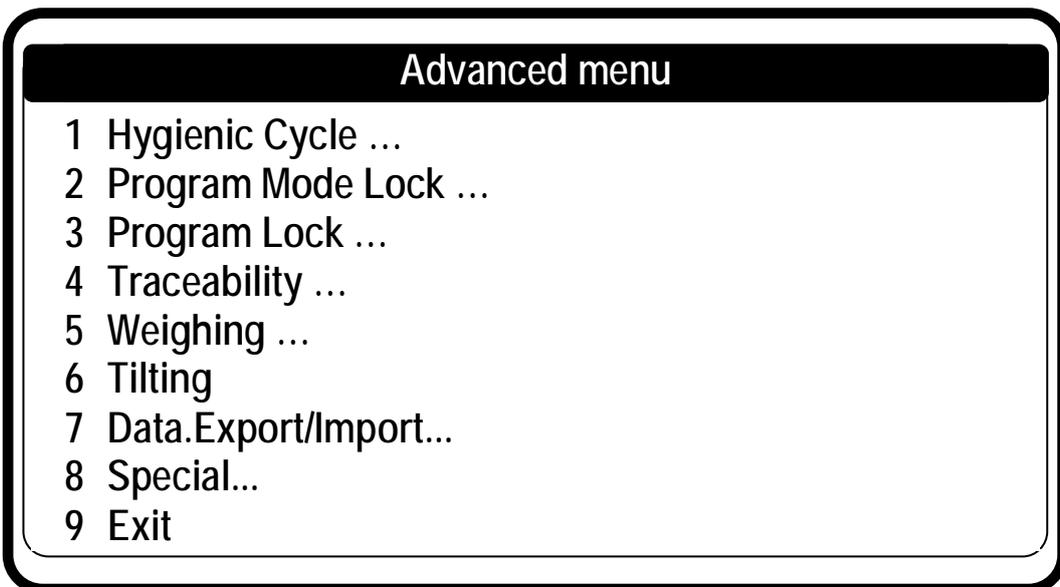
SELECT CYCLE is displayed.

Switch the machine to the setup mode (see chapter 3.3).

The Main menu is now available.

Select the Advanced Menu after turning it on in the Configuration menu.

```
┌─────────────────────────────────────────┐
│              Main menu                   │
├─────────────────────────────────────────┤
│                                          │
│     Initialization …                     │
│     Program …                            │
│     Servis …                             │
│     Configuration …                      │
│  ▶  Advanced …                           │
│                                          │
└─────────────────────────────────────────┘
```

The advanced menu contains a list of extra menu's with special functions :

```
┌─────────────────────────────────────────┐
│            Advanced menu                 │
├─────────────────────────────────────────┤
│   1  Hygienic Cycle …                    │
│   2  Program Mode Lock …                 │
│   3  Program Lock …                      │
│   4  Traceability …                      │
│   5  Weighing …                          │
│   6  Tilting                             │
│   7  Data.Export/Import...               │
│   8  Special...                          │
│   9  Exit                                │
└─────────────────────────────────────────┘
```

❑ HYGIENIC CYCLE MENU

A. Strict Temperature Control

In normal operation, the washing machine heating system works with a temperature control hysteresis below the programmed target temperature value. This corresponds with line 1 at the fig.4.3.

Some washing machine operators want a strict temperature control in case of hygienic wash cycles.

Example: this means when 70°C is programmed, the linen must be washed at a temperature that doesn't drop below 70°C. This solution is possible by switching on the „Strict Temperature Control" function. In this case the wash computer works with a temperature control with a hysteresis above the programmed temperature value. See line 2 at the fig.4.3.

Strict Temperature Control is not applicable for delicates and woollens, and will not work for a programmed temperature < 30°C.
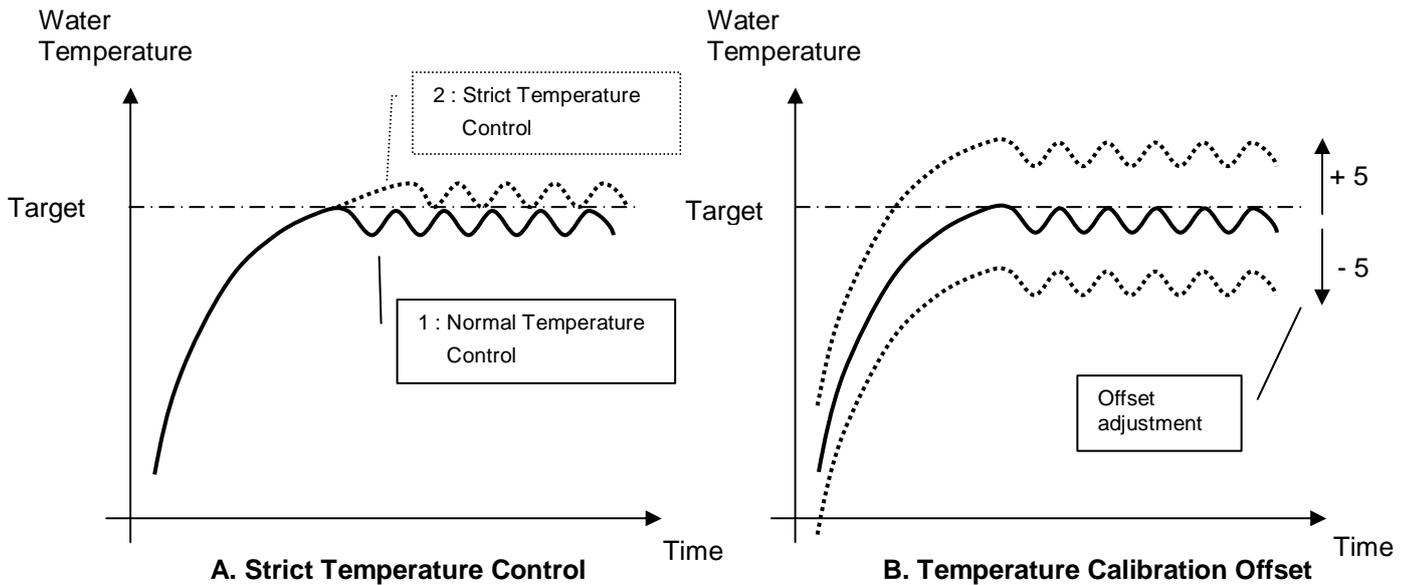

A. Strict Temperature Control

B. Temperature Calibration Offset

Fig.4.3.

❑ Water Heating graphs.

B. Temperature Calibration Offset

The temperature sensor of the washing machine can be calibrated with an external temperature measurement device as reference. The temperature sensor value can be adjusted in a range of +/- 5°C.

For normal washing machine use such calibration is not required.

Menu Item	Default	Info	Limits
Strict Temp. Control	No	The Strict Temperature Control of the wash computer makes that the fabrics is washed at same value like the programmed target temperature.	No / Yes
Temp. Calib. Offset	0	By changing the Temperature Calibration Offset value the water temperature sensor value is adjusted so that it gets equal with the value of an external reference temperature sensor.	-5 / 0 / 5
Hygienic Water Level	No	This option activates the mode of more accurate checks of the required water level during the washing procedure.	No / Yes
Exit		Return to Advanced Menu.	

❑ PROGRAM MODE LOCK MENU

The access to the Program Mode can be locked by a password.
It means that without password you can't have access to the Main Menu Screen.

Menu Item	Default	Info	Limits
Password	None	Enter a 4 digit value for the Password and press ENTER. ⚠ **Attention!** **The Password will not be requested if it has not been set.**	0000 - 99999

Edit Password …
 	
   New Password ….
 	
   No Password …
 	
   Old Password ….
		Insert a 4 digit numeric value to create a new password.
		Select the menu item „No Password" if you want to get rid of the Password.
		
		To change the Password insert first the old Password, then you are invited to create a new Password.	

Exit		Return to Advanced Menu	

❑ PROGRAM LOCK MENU

Each wash program can be locked individually.
When the program is locked, it means no settings can be changed anymore.
It avoids that programs once created get changed by somebody else.
To get access to this menu a password is needed if it has been set.

Menu Item	Default	Info	Limits
Password	None	Enter a 4 digit value for the Password and press ENTER. ⚠ **Attention!** **The Password will not be requested if it has not been set.**	0000 - 99999

Programs …
  1 HOT 90°   INTENS   Unlocked
  2 WARM 60° INTENS   Locked
    …
  99 Program 99   Unlocked
    EXIT
	Unlocked	Each program can be locked – unlocked individually.
		When the program is locked, it means no Program settings can be changed anymore.
		It avoids that programs once created get changed by somebody else.
			Unlocked / Locked

Edit Password …
 	
   New Password ….
 	
   No Password …
 	
   Old Password ….
		Insert a 4 digit numeric value to create a new password.
		Select the menu item „No Password" if you want to get rid of the Password.
		
		To change the Password insert first the old Password, then you are invited to create a new Password.	

Exit		Return to Advanced Menu	

❏ TRACEABILITY MENU

Traceability is a function to store wash cycle data outside the washing machine, to be able to prove that the laundering process has been correctly executed.

In case of any failure, the Wash Cycle must be stopped and there must be a warning that the wash cycle must be repeated correctly.

For more information about traceability see "Trace-Tech" manual.

Menu Item	Default	Info	Limits
Enable Traceability No / Yes	No	First you have to select Traceability to obtain the other menu items.	No / Yes
Traceability report	Data DAQ	A report can be created for each wash cycle. ♦ „Data DAQ": saves all the wash cycle data into the DAQ memory of the programmer device. If a PC is connected to the washer, the data is sent to the PC and saved in its memory. ♦ „Data PC": it continuously sends all wash cycle data to the PC (where the data is stored).	Data DAQ Data PC
PC Comm.Timeout	15 sec	Setting the time limit for establishing communication with a PC.	0 - 999 sec
PC Data Time Limit	60 sec	**Only for Traceability report = Data PC** Setting of time limit for data transfer into the monitoring system.	0 - 999 sec
Disable Traceability Errors	No	Err 81 and Err 82 can be switched off if they disturb to often the wash process.	No / Yes
Exit		Return to Advanced Menu.	

❏ WEIGHING MENU

Menu Item	Default	Info	Limits
Weighing System	No	No - without weighing system Auto - Automatic linen-weighing system Manual - manual entering of the linen weight	No / Auto / Manual
Main units	kg	The weight unit may be displayed in kg or as a percentage value (of the machine capacity). ♦ Main units correspond to the largest figures on the display.	kg / %
Help units	%	The weight unit may be displayed in kg or as a percentage value (of the machine capacity). ♦ The secondary units correspond to the smallest figures on the display.	% / kg / vypnuto
Load Cell Calibration ...		Load cell calibration shows current weight which is applied to each oft the load cells. When the sign "Calibrated" appears in the middle of the screen, it means that the calibration process has finished. For further information please read the weighing system manual.	

Menu Item	Default	Info	Limits
Expected Free Weight	XXXX	This value states the weight of the washer. This value is used to verify correct function of the weighing system. In case that the currently measured weight is out of range, a diagnostic error appears.	0 - 9999
Water Level	Units	Water consumption programmable in (units) or litres. In case that units are selected, the water consumption is higher than when litres are selected. The system measures the exact amount of water in litres when litres are selected.	Units / Litres
Correct Linen Absorpt.	No	In case that litres are selected, it might occur that there won't be sufficient amount of water as required for the pre-wash because dry linen may absorb large amount of water. This problem may be solved by selecting "Linen absorption correction". An increased amount of water will then be fed into the washer for the pre-wash cycle.	No / Yes
Automatic Level Adjust.	No	If the amount of weighed load in the washing machine is smaller then the capacity of the washing machine, then the washing machine will run automatically with a reduced amount of water. This will reduce the water consumption of the washing machine.	No / Yes
Automatic Soap Adjust.	No	Similar like Automatic water Level Adjustment, also the time value of the liquid soap signal is adjusted in relation with the amount of weighed load, which will reduce the liquid soap consumption of the washing machine.	No / Yes
Scale Stabilization	3	This item is used for stabilisation of the displayed weight value during the weighing process.	3 - 15
Calibration coefficient	100	This item serves the purpose of manual finishing of calibration - weighing system.	80-120
Exit		Return to Advanced Menu	

❏ TILTING SYSTEM

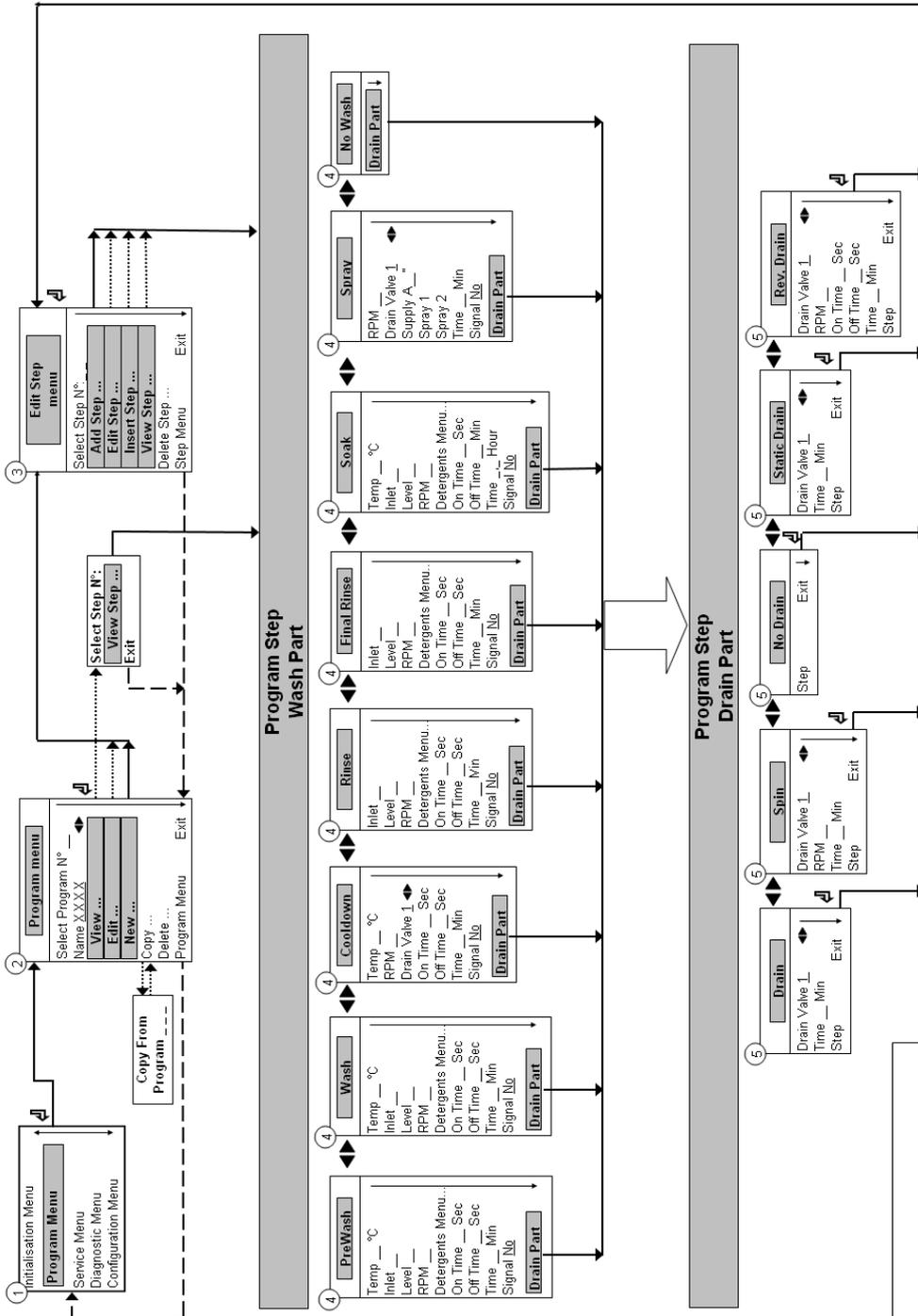| Menu Item	Default	Info	Limits
Tilting system	Off	Tilting system setting: A Off – tilting system is off 1 – One side tilting system 2 – Both side tilting system	Off / 1 / 2
Stabilization Time	25	Time delay for complete system stabilisation after tilting operation.	10-300 sec
Exit		Return to Advanced Menu	

❑ DATA EXPORT / IMPORT

Menu Item	Default	Info	Limits
Data Export	No	All wash programs and washer settings are copied from the control board internal memory onto a USB flash disk. (The USB flash disk must be inserted in the USB connector).	No / Yes
Programs Import	No	All wash programs are copied from USB flash disk into the control board internal memory. (The USB flash disk must be inserted in the USB connector). Wash programs can only be copied into the washer from the same model of washer (e.g. from FX65 machine into another FX65 machine).	No / Yes
Conf. Import	No	Settings of the machine are copied from USB flash disk into the control board internal memory. (The USB flash disk must be inserted in the USB connector). Settings can only be copied into the washer from the same model of washer (e.g. from FX65 machine into another FX65 machine).	No / Yes
Exit		Return to Advanced Menu	

❑ SPECIAL

Menu Item	Default	Info	Limits
SoapLink Comm	No	This item activates communication with dispensing PLC system.	No / Yes
Exit		Return to Advanced Menu	

Program Step Wash Part

Program Step Drain Part

548237

① Initialisation Menu
Program Menu
Service Menu
Diagnostic Menu
Configuration Menu

② **Program menu**
Select Program N° __
Name XXXX
View ...
Edit ...
New ...
Copy ...
Delete ...
Program Menu   Exit

Copy From Program _ _ _

③ **Edit Step menu**
Select Step N°.
Add Step ...
Edit Step ...
Insert Step ...
View Step ...
Delete Step ...
Step Menu   Exit

Select Step N°:
View Step ...
Exit

④ **PreWash**
Temp __ °C
Inlet __
Level __
RPM __
Detergents Menu...
On Time __ Sec
Off Time __ Sec
Time __ Min
Signal No   Drain Part

④ **Wash**
Temp __ °C
Inlet __
Level __
RPM __
Detergents Menu...
On Time __ Sec
Off Time __ Sec
Time __ Min
Signal No   Drain Part

④ **Cooldown**
Temp __ °C
RPM __
Drain Valve 1
On Time __ Sec
Off Time __ Sec
Time __ Min
Signal No   Drain Part

④ **Rinse**
Inlet __
Level __
RPM __
Detergents Menu...
On Time __ Sec
Off Time __ Sec
Time __ Min
Signal No   Drain Part

④ **Final Rinse**
Inlet __
Level __
RPM __
Detergents Menu...
On Time __ Sec
Off Time __ Sec
Time __ Min
Signal No   Drain Part

④ **Soak**
Temp __ °C
Inlet __
Level __
RPM __
Detergents Menu...
On Time __ Sec
Off Time __ Min
Time __ Hour
Signal No   Drain Part

④ **Spray**
RPM __
Drain Valve 1
Supply A "
Spray 1
Spray 2
Time __ Min
Signal No   Drain Part

④ **No Wash**
Drain Part

⑤ **Drain**
Drain Valve 1
Time __ Min
Step   Exit

⑤ **Spin**
Drain Valve 1
RPM __
Time __ Min
Step   Exit

⑤ **No Drain**
Step   Exit

⑤ **Static Drain**
Drain Valve 1
Time __ Min
Step   Exit

⑤ **Rev. Drain**
Drain Valve 1
RPM __
On Time __ Sec
Off Time __ Sec
Time __ Min
Step   Exit

Attention !
Depending the washing machine configuration and initialisation, some menu's and menu-items will not be displayed.

◆ Selecting the menu item : Press button **UP** or **DOWN**.

◆ Selection list : Press button **LEFT** or **RIGH**.

⏎ Selecting a new Program Sub-menu and go to this Sub-menu : **ENTER** button

-- Insert a value or Select another List element

① - Select the Program Menu.

② - Enter the desired Program Number.
- For a new program enter the program name.
- Select Program View, Edit, Insert, New, Copy or Delete.

③ - Select the appropriate Step function Add, Edit, Insert, View or Delete.
- Enter the desired Step Number.

④ - Select the appropriate Wash step function.
- Enter the appropriate Step function settings.

⑤ - Select the appropriate Drain function.
- Enter the appropriate Step function settings.
- Exit the step menu.

5. PROGRAMMING

5.1 GENERAL

Specific functions have been implemented in the wash computer to allow a detailed programming.

❑ **Functions for the complete program.**

– Program Number :	Selecting the wash Program.
– Name :	Insert or Modify the Name for the Program.
– View :	Inspecting the Program settings without making changes.
– Edit :	Adjusting a Program.
– New :	Creating a New Program.
– Copy :	Making a Copy of an existing Program.
– Delete :	Erase the Program.
– Exit :	Leave the Program Menu.

❑ **Functions for the program steps.**

– Step Number :	Selecting the Program Step.
– Add :	Adding a Program Step at the end of the program.
– Edit :	Adjusting the Program Step.
– Insert :	Adding a Program Step between two other steps.
– View :	Inspecting the Step settings without making changes.
– Delete :	Deleting a Step.
– Exit :	Leave the Program Step Menu.

Follow the flowchart step by step.

5.2. STEP ① : PROGRAM MENU

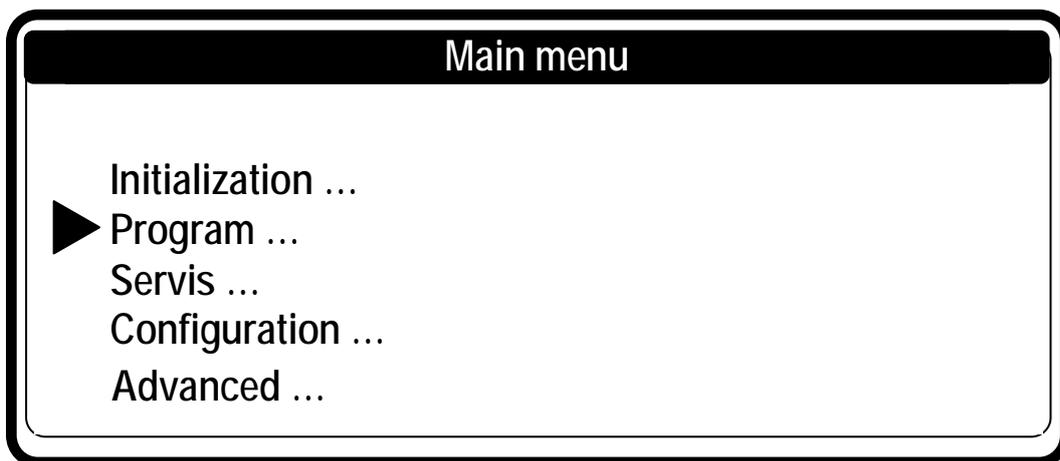## ❑ HOW TO GET INTO THE PROGRAM MENU

The Program menu can only be accessed when the machine is in standby (the machine is powered up but no program is started).

SELECT CYCLE is displayed.
Switch the machine to the setup mode (see chapter 3.3).
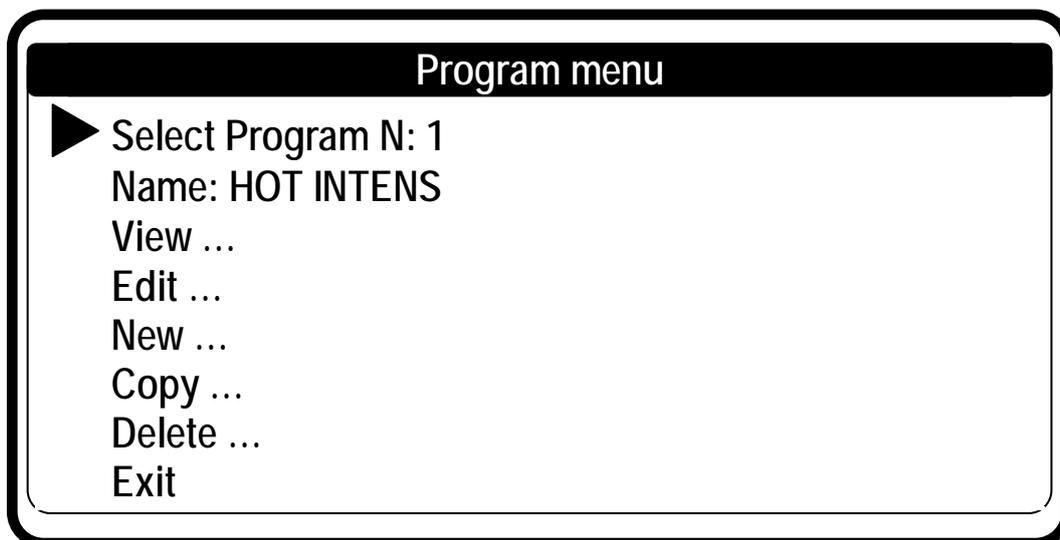The Main menu is now available.
Press the **ARROW DOWN** button to select the Program Menu.

```
┌─────────────────────────────────────────┐
│             Main menu                    │
├─────────────────────────────────────────┤
│                                          │
│      Initialization …                    │
│   ▶  Program …                           │
│      Servis …                            │
│      Configuration …                     │
│      Advanced …                          │
│                                          │
└─────────────────────────────────────────┘
```

Press the **ENTER** button to confirm your selection.
Go to ② ↳

5.3. STEP ② : PROGRAM FUNCTIONS

```
┌─────────────────────────────────────────┐
│            Program menu                  │
├─────────────────────────────────────────┤
│  ▶  Select Program N: 1                  │
│     Name: HOT INTENS                     │
│     View …                               │
│     Edit …                               │
│     New …                                │
│     Copy …                               │
│     Delete …                             │
│     Exit                                 │
└─────────────────────────────────────────┘
```

Menu Item	Info
Select Program N°: 1	Insert the desired program number. Program 1 to 99 can be selected.
Name: _ _ _ _ _ _ _ _ _ _ _ _ _ _	The Program Name gives info about the type of wash Program. With the ARROW LEFT and RIGHT button you can select the character position. With the ARROW UP and DOWN button you can select the desired character. By pressing the ENTER button, the dashes will disappear.

Menu Item	Info
View	In Program View you can look to the Program Settings, without making any changes.
Edit	Editing a program is changing the program by selecting a new element from a list or by changing values in an existing program. You can also add, insert or delete steps in an existing program.
New	To create a new program, you have to make use of the add step function. By adding steps the program will grow step by step. A confirmation is asked first to delete the old program.
Copy Copy From Program N°: XXX	Sometimes it's easier to make a copy of an existing program and to make some small changes to the copied program. A confirmation is asked first to delete the old program. Insert the desired program number from which you want to copy the program. ⚠ **Attention!** **The standard programs can be selected at the program numbers 101-120.** Program number 101 corresponds with program 1. Program number 102 corresponds with program 2. … Program number 120 corresponds with program 20. A confirmation is asked first to delete the old program.
Delete Old Program	To get rid of an existing program, use the delete program function. The complete program will be erased at once. A confirmation is asked first to delete the old program. new program, you have to make use of
Exit	Return to Main Menu

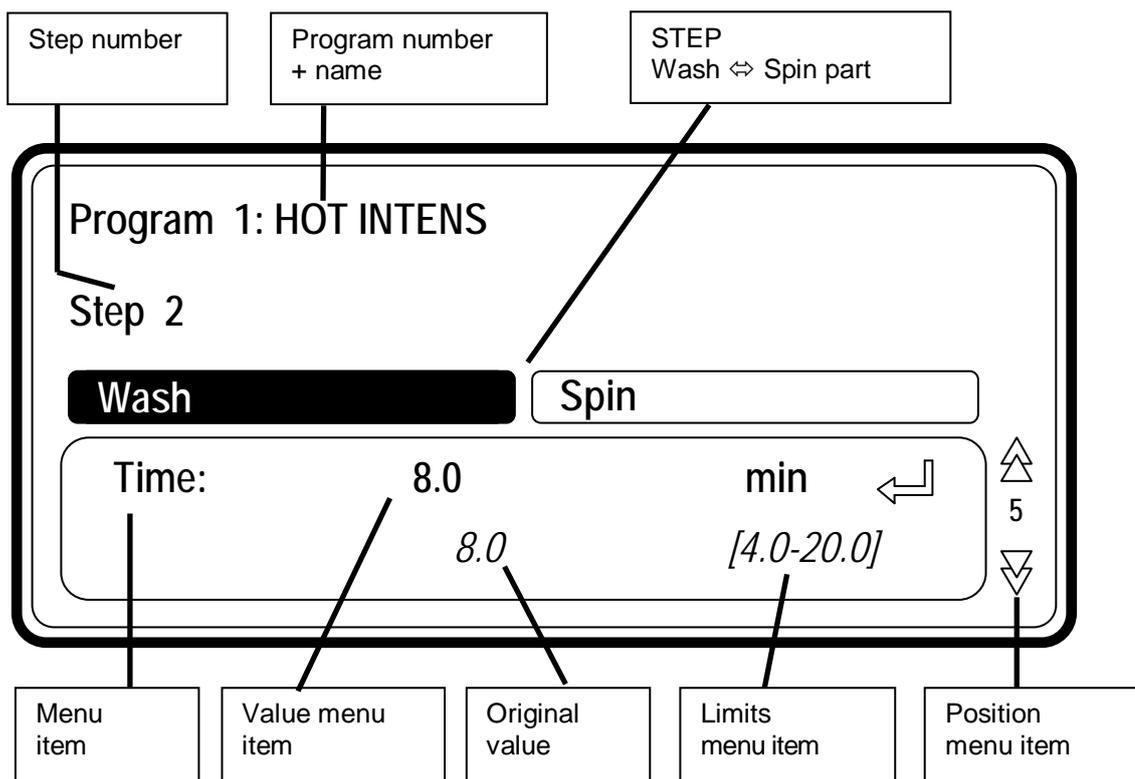In the Advanced Menu, it is possible to lock - unlock each wash program individually.

If a program is locked, a sign "Locked" is displayed in brackets next to the program number and it is not possible to change the wash programs. Only the View function will be functional and the other functions to adjust the program will be disabled.

5.4. STEP ③ : PROGRAM STEP FUNCTION

```
┌─────────────────────────────────────────────────┐
│                  Edit Step Menu                  │
│  ▉Prog. 1: HOT INTENS▉                           │
│ ▶ Select Step N:   1                             │
│   Add …                                          │
│   Edit ...                                        │
│   Insert …                                       │
│   View …                                         │
│   Delete …                                       │
│   Exit                                           │
└─────────────────────────────────────────────────┘
```
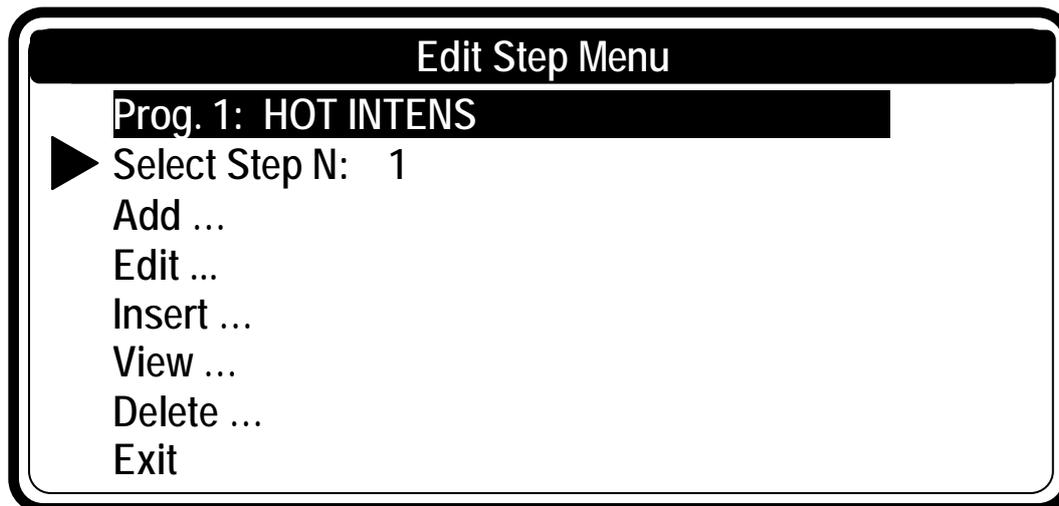
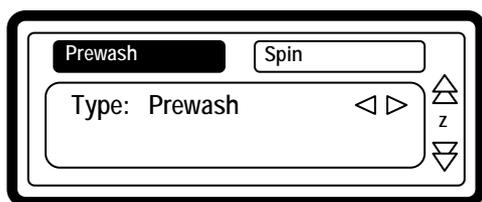| Menu Item	Info
Select Step N°: 1	Insert the desired step number. Step 1 to 99 can be selected. ⚠ **Attention!** **If the number is not accepted, this means that the step is not available.** **No Step number must be selected for „Add Step" function.**
Add Step	To create new programs, a new extra step should be added at the end of the program.
Edit Step	To change values and list elements from an existing step.
Insert Step	A new step is inserted in between two existing steps. If the number is not accepted, this means there is no step with a step number = inserted number - 1 available. A new step can only be inserted between two available steps.
View Step	Before making changes in a wash program, it's recommended to have a look at the actual settings by the view function. No changes can be made at the View Step function.
Delete Step	An existing Step in the program disappears when it's deleted. A confirmation is asked first before deleting the Old Step.
Exit	Return to Program Menu

5.5. STEP ④ : PROGRAMMING THE WASH PART

| Step number | Program number + name | STEP Wash ⇔ Spin part |

```
Program 1: HOT INTENS

Step 2

┌──────────────────┐  ┌──────────────────┐
│ Wash             │  │ Spin             │
└──────────────────┘  └──────────────────┘
   Time:        8.0              min    ↵    △
                                              5
                8.0         [4.0-20.0]        ▽
```

| Menu item | Value menu item | Original value | Limits menu item | Position menu item |

This paragraph gives a detailed explanation about programming the Wash Sequences.

- Each program step contains a wash part and a drain/spin part.
- First the wash part must be selected, item by item can be programmed.
- Next the drain/spin part must be selected, item by item can be programmed. See step ⑤ ⤵.
- Without making changes you can watch item by item, by pressing the **ARROW DOWN** or **UP** button.
- If you want to make changes :
  - Insert a new value.
  - Enable or disable a Setting by pressing the **YES** or **NO** button.
  - Select a list element by pressing the **ARROW LEFT** or **RIGHT** button.
  ➜ You always need to confirm by pressing the **ENTER** button.
- Each time you add or insert a new step, default values have been pre-programmed.
  So with less effort, complete programs can be programmed.
  See also chapter 3 for a general explanation concerning the creation of wash programs.
- You can recognize a list element by the LEFT and RIGHT ARROW symbol at the right side on the display.
- The arrow down symbol on the display points to the last Menu Item : EXIT.

❑ SELECTING THE WASH PART

```
┌─────────────────────────────┐
│  Prewash        Spin    ╱╲  │
│                          Z  │
│  Type: Prewash   ◁ ▷    ╲╱  │
│                             │
└─────────────────────────────┘
```

- If you have selected **Add Step**, **Edit Step** or **Insert Step**, you have to select the wash sequence now.
- Depending on the machine type, with top or front soap dispenser, you have more or less sequences available.

Washing machines with top soap dispenser

| Prewash | **Wash** | Cooldown | Rinse | Final Rinse | Soak | Spray | No wash |

Washing machines with front soap dispenser

| **Wash** | Cooldown | Rinse | Soak | Spray | No wash |

- For a new step, as a default, the first displayed function is the **Wash** sequence.
- Now by pressing the **ARROW LEFT** or **RIGHT** button, you can select the desired sequence.
- Press the **ENTER** button to confirm.
- You can also use the **ARROW DOWN** button if you accept the pre-programmed default value.

❑ THE PREWASH SEQUENCE

| **Prewash** | Wash | Cooldown | Rinse | Final Rinse | Soak | Spray | No wash |

Menu Item	Default	Info	Limits
Temperature	40 °C	The water temperature.	1 - 45 °C
Inlet (top soap dispenser) (front soap dispenser)	 I1 – I5 I2 – I3	The suggested inlet valves are related to the temperature and the soap box to be used. ⚠ **Attention!** **If you insert other inlet valves than the suggested ones, problems can occur at the water fill process.**	 I1...I8 I1...I3
Level	Normal Low	The suggested water level depends on the machine Type.	See table 3.5.A
RPM	-	The suggested RPM depends on the machineType.	See table 3.5.B
Detergents Menu… Supply 1, …, 8	 0 sec	Time selection for external liquid soap supplies. You can program up to 4 supplies at the same time. If you have programmed more then 4 supplies an error message will be generated. Put the time of the supplies back to zero until not more than 4 non-zero time values are remaining. (Liquid soap supplies must be switched on at the configuration Menu)	0 - 99 sec

Menu Item	Default	Info	Limits
On Time	12 sec	The wash action, motor On Time. Gentle wash action : 3 sec. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 sec
Off Time	3 sec	The wash action, motor Off Time. Gentle wash action : 12 sec. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 sec
Time	4.0 Min	The Prewash Sequence Time. (for 0 Minutes the Prewash sequence will be skipped) (programmable in steps of 0,5 Minutes)	0 - 99.5 Min
Signal	No	When a signal is programmed, a pause will be introduced at the end of the Wash Step. This allows the operator to add soap for the next step. A buzzer signal warns the operator that the cycle has been interrupted.	No / Yes

❑ THE WASH SEQUENCE

Prewash | **Wash** | Cooldown | Rinse | Last Rinse | Soak | Spray | No wash

Menu Item	Default	Info	Limits
Temperature	60 °C	The water temperature.	1 - 92 °C
Inlet (top soap dispenser) (front soap dispenser)	I2-I3-I6-I8 I2-I3	The suggested inlet valves are related to the temperature and the soap box to be used. ⚠ **Attention!** **If you insert other inlet valves than the suggested ones, problems can occur at the water fill process.**	I1...I8 I1...I3
Level	Normal Low	The suggested water level depends on the machine Type.	See table 3.5.A
RPM	-	The suggested RPM depends on the machine Type.	See table 3.5.B
Detergents Menu… Box A, B, C, D, E Supply 1, …, 8	0 sec 0 sec	Time selection for Soap Boxes (hopper) and external liquid soap supplies. You can program up to 4 supplies at the same time. If you have programmed more then 4 supplies an error message will be generated. Put the time of the supplies back to zero until not more than 4 non-zero time values are remaining. (Box A, B, C, D, E are only available on Front Soap Dispenser machines) (Liquid Soap Supplies Must Be Switched On At The Configuration Menu)	0 - 99 sec
On Time	12 sec	The wash action, motor On Time. Gentle wash action : 3 sec. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 sec
Off Time	3 sec	The wash action, motor Off Time. Gentle wash action : 12 sec. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 sec
Time	7.0 Min	The Wash Sequence Time. (for 0 Minutes the Wash sequence will be skipped) (programmable in steps of 0,5 Minutes)	0 - 99.5 Min
Signal	No	When a signal is programmed, a pause will be introduced at the end of the Wash Step. This allows the operator to add soap for the next step. A buzzer signal warns the operator that the cycle has been interrupted.	No / Yes

❑ THE COOLDOWN SEQUENCE

Prewash | Wash | **Cooldown** | Rinse | Final Rinse | Soak | Spray | No wash

- After a Hot wash you can program a Cool-down Sequence to avoid temperature shock and shrinking of the garments.
- The drain step after the Hot wash must be put on NO DRAIN.
- No inlets are programmable :
    - machine with three water inlets: inlet 7 is the standard inlet.
    - machine with two water inlets: inlet 1 is the standard inlet.
- The water level can't be programmed as the process of adding and draining water doesn't allow this.

> ⚠ **ATTENTION!**
> **DO NOT PROGRAM A DRAIN SEQUENCE BEFORE A COOLDOWN SEQUENCE**

Menu Item	Default	Info	Limits
Temperature	60 °C	The water temperature.	1 - 60 °C
RPM	-	The suggested RPM depends on the machine Type.	See table 3.5.B
Drain Valve	1	Only available on washing machines with both : a normal Open and normal Closed Drain valve.	1 - 2
On Time	12 sec	The wash action, motor On Time. Gentle wash action : 3 sec. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 sec
Off Time	3 sec	The wash action, motor Off Time. Gentle wash action : 12 sec. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 sec
Time	7.0 Min	The programmed time = time needed to decrease the water temperature. Once the programmed temperature has been reached, the next Sequence will be started. (for 0 Minutes the Cooldown sequence will be skipped) (programmable in steps of 0,5 Minutes) ⚠ **Attention!** **If a short time is programmed, the water temperature will decrease fast.** **Recommendation!** **Program 1 minute for each 3°C temperature drop.** **Example :** **For a hot wash of 90°C and a Cooldown Sequence of 60°C a time of about 30°C/3°C = 10 Minutes should be programmed for the Cooldown Sequence.**	0 - 99.5 Min
Signal	No	When a signal is programmed, a pause will be introduced at the end of the Wash Step. This allows the operator to add soap for the next step. A buzzer signal warns the operator that the cycle has been interrupted.	No / Yes

❏ THE RINSE SEQUENCE

Prewash | Wash | Cooldown | **Rinse** | Final Rinse | Soak | Spray | No wash

- No temperature can be programmed as a Rinse is only dedicated for cold water.

Menu Item	Default	Info	Limits
Inlet (top soap dispenser) (front soap dispenser)	I1-I2-I7 I2	3 Inlets can be programmed. The suggested inlet valves are related to the temperature and the soap box to be used. ⚠ **Attention!** **If you insert other inlet valves than the suggested ones, problems can occur at the water fill process.**	I1,2,3,4,7 I1-I2
Level	Normal High	The suggested water level depends on the machine Type.	See table 3.5.A
RPM	-	The suggested RPM depends on the machine Type.	See table 3.5.B
Detergents Menu… Box A, B, C, D, E Supply 1, …, 8	0 sec 0 sec	Time selection for Soap Boxes (hopper) and external liquid soap supplies. You can program up to 4 supplies at the same time. If you have programmed more then 4 supplies an error message will be generated. Put the time of the supplies back to zero until not more than 4 non-zero time values are remaining. (Box A, B, C, D, E are only available on Front Soap Dispenser machines) (liquid soap supplies must be switched on at the configuration menu) .	0 - 99 sec
On Time	12 sec	The wash action, motor On Time. Gentle wash action : 3 sec. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 sec
Off Time	3 sec	The wash action, motor Off Time. Gentle wash action : 12 sec. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 sec
Time	2.0 Min	The Rinse Sequence Time. (for 0 Minutes the Rinse sequence will be skipped) (programmable in steps of 0,5 Minutes)	0 - 99.5 Min
Signal	No	When a signal is programmed, a pause will be introduced at the end of the Wash Step. This allows the operator to add soap for the next step. A buzzer signal warns the operator that the cycle has been interrupted.	No / Yes

❏ THE FINAL RINSE SEQUENCE

Washing machines with top soap dispenser

| Prewash | Wash | Cooldown | Rinse | **Final Rinse** | Soak | Spray | No wash |

- No temperature can be programmed as a Last Rinse is only dedicated for cold (hard) water.

Menu Item	Default	Info	Limits
Inlet (top soap dispenser)	I4-I7 (3 inlets) I4 (4 inlets)	3 Inlets can be programmed. The suggested inlet valves are related to the temperature and the soap box to be used. ⚠ **Attention!** **If you insert other inlet valves than the suggested ones,** **problems can occur at the water fill process.**	I1,2,3,4,7
Level	Normal High	The suggested water level depends on the machine Type.	See table 3.5.A
RPM	-	The suggested RPM depends on the machine Type.	See table 3.5.B
Detergents Menu… Supply 1, …, 8	0 sec	Time selection for external liquid soap supplies. You can program up to 4 supplies at the same time. If you have programmed more then 4 supplies an error message will be generated. Put the time of the supplies back to zero until not more than 4 non-zero time values are remaining. (Liquid soap supplies must be switched on at the configuration Menu)	0 - 99 sec
On Time	12 sec	The wash action, motor On Time. Gentle wash action : 3 sec. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 sec
Off Time	3 sec	The wash action, motor Off Time. Gentle wash action : 12 sec. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 sec
Time	2.0 Min	The Final Rinse Sequence Time. (for 0 Minutes the Final Rinse sequence will be skipped) (programmable in steps of 0,5 Minutes)	0 - 99.5 Min
Signal	No	When a signal is programmed, a pause will be introduced at the end of the Wash Step. This allows the operator to add soap for the next step. A buzzer signal warns the operator that the cycle has been interrupted.	No / Yes

❑ THE SOAK SEQUENCE

Prewash | Wash | Cooldown | Rinse | Final Rinse | **Soak** | Spray | No wash

Menu Item	Default	Info	Limits
Temperature	40 °C	The water temperature.	1 - 45 °C
Inlet (top soap dispenser) (front soap dispenser)	 I1-I7 I2-I3	The suggested inlet valves are related to the temperature and the soap box to be used. ⚠ **Attention!** **If you insert other inlet valves than the suggested ones, problems can occur at the water fill process.**	 I1...I8 I1...I3
Level	Normal Low	The suggested water level depends on the machine Type.	See table 3.5.A
RPM	-	The suggested RPM depends on the machine Type.	See table 3.5.B

Detergents Menu…
 	
    Box A, B, C, D, E
    Supply 1, …, 8
	
	0 sec
	0 sec
		Time selection for Soap Boxes (hopper) and external liquid soap supplies.
		You can program up to 4 supplies at the same time. If you have programmed more then 4 supplies an error message will be generated. Put the time of the supplies back to zero until not more than 4 non-zero time values are remaining.
		(Box A, B, C, D, E are only available on Front Soap Dispenser machines)
		(Liquid soap supplies must be switched on at the configuration menu)
			0 - 99 sec

On Time	12 sec	The wash action, motor On Time. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 sec
Off Time	10 Min	The wash action, motor Off Time. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 minutes
Time	1.0 Hour	The Soak Sequence Time. (for 0 Hour the Soak sequence will be skipped) (programmable in steps of 0,1 Hour)	0 - 25.5 Hour
Signal	No	When a signal is programmed, a pause will be introduced at the end of the Wash Step. This allows the operator to add soap for the next step. A buzzer signal warns the operator that the cycle has been interrupted.	No / Yes

❏ THE SPRAY SEQUENCE

| Prewash | Wash | Cooldown | Rinse | Final Rinse | Soak | **Spray** | No wash |

- Water or Liquid is injected at Distribution or Low Spin Speed
- No standard water inlets can be programmed in this function.
- The liquid will be injected based on soap supply programming.

Menu Item	Default	Info	Limits
RPM	-	The suggested RPM depends on the machine Type.	See table 3.5.B
Drain Valve	1	Only available on washing machines with both : a normal Open and normal Closed Drain valve.	1 - 2
Detergents Menu… Box A, B, C, D, E Supply 1, …, 8	 0 sec 0 sec	Time selection for Soap Boxes (hopper) and external liquid soap supplies. The Spray sequence only functions with 1 Supply. If you have programmed more then 1 supply an error message will be generated. Put the time of the supplies back to zero until not more than 1 non-zero time value is remaining. If No supply has been programmed: the Spray sequence will be skipped. (Liquid soap supplies must be switched on at the configuration menu).	0 - 99 sec
Signal	No	When a signal is programmed, a pause will be introduced at the end of the Wash Step. This allows the operator to add soap for the next step. A buzzer signal warns the operator that the cycle has been interrupted.	No / Yes

❏ THE NO WASH SEQUENCE

| Prewash | Wash | Cooldown | Rinse | Final Rinse | Soak | Spray | **No wash** |

- In case of a No Wash Sequence, the wash function of the programmed step is skipped.
  Goto ⑤ ↘

5.6. STEP ⑤ : PROGRAMMING THE DRAIN STEP

This paragraph gives a detailed explanation about programming the Drain/Extraction Sequences.

After programming the wash step, the drain/extraction step still has to be programmed.

⚠ **ATTENTION!**
YOU DON'T HAVE TO PROGRAM A DRAIN SEQUENCE BEFORE AN EXTRACTION SEQUENCE AS THE WATER WILL AUTOMATICALLY BE DRAINED AT THE EXTRACTION SEQUENCE

❑ SELECTING THE DRAIN/EXTRACTION STEP

Depending on the machine type, you have more or less functions.

Wash	Drain

Type: Drain ◁ ▷
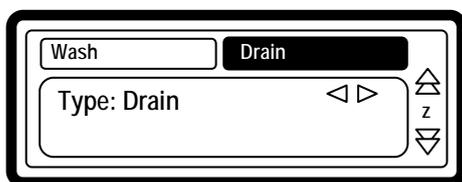
- For a new step, the first sequence that is displayed is the Drain sequence (default).
- Select the desired Drain step sequence from the list by pressing the **ARROW LEFT** or **RIGHT** button.
- Press the **ENTER** button to confirm your selection.
- You can also use the **ARROW DOWN** button if you accept the pre-programmed default value.

❑ THE DRAIN SEQUENCE

Drain | Extract | No Drain | Static Drain | Reversing Drain

Menu Item	Default	Info	Limits
Drain Valve	1	Only available on washing machines with both: a normal Open and normal Closed Drain valve.	1 - 2
Time	0.5 Min	The Drain Sequence Time. (for 0 Minutes the Drain sequence will be skipped) (programmable in steps of 0,5 Minutes)	0 - 15.0 Min
Exit		Return to Edit Program Menu.	

❑ THE EXTRACT SEQUENCE

Drain | **Extract** | No Drain | Static Drain | Reversing Drain

Menu Item	Default	Info	Limits
Drain Valve	1	Only available on washing machines with both : a normal Open and normal Closed Drain valve.	1 - 2
RPM	-	The suggested RPM depends on the machine Type.	See table 3.5.B
Time	4.5 Min	The Extract Sequence Time. (for 0 Minutes the Extract sequence will be skipped) (programmable in steps of 0,5 Minutes)	0 - 15,0 Min
Exit		Return to Edit Program Menu.	

❑ THE NO DRAIN SEQUENCE

Drain | Extract | **No Drain** | Static Drain | Reversing Drain

- The Drain/Extraction part of the programmed step is skipped.

⚠ **Attention!**
For some specific functions „No Drain" must be programmed.
Example:

If you want to program a Cool-down Sequence, then „No Drain" must be programmed between the Hot Wash and the Cool-down Sequence.

Menu Item	Default	Info	Limits
Exit		Return to Edit Program Menu.	

❑ THE STATIC DRAIN SEQUENCE

Drain | Extract | No Drain | **Static Drain** | Reversing Drain

The drum is at standstill while the water is drained.

Menu Item	Default	Info	Limits
Drain Valve	1	Only available on washing machines with both : a normal Open and normal Closed Drain valve.	1 - 2
RPM	-	The suggested RPM depends on the machine Type.	See table 3.5.B
Time	0.5 Min	The Static Drain Sequence Time. (for 0 Minutes the Static Drain sequence will be skipped) (programmable in steps of 0,5 Minutes)	0 - 15,0 Min
Exit		Return to Edit Program Menu.	

⚠ **Attention!**

It's not recommended to program a spin sequence just after a Static Drain Sequence.

At a Static Drain sequence, the garments are not distributed around the drum while the water is drained.

When the spin sequence starts, the garments are a big imbalance and the imbalance (tilt) function will be activated.

❏ THE REVERSING DRAIN SEQUENCE

Drain | Extract | No Drain | Static Drain | **Reversing Drain**

The drum is reversing while the water is drained.

Menu Item	Default	Info	Limits
Drain Valve	1	Only available on washing machines with both : a normal Open and normal Closed Drain valve.	1 - 2
RPM	-	The suggested RPM depends on the machine Type.	See table 3.5.B
On Time	12 sec	The mechanical action, motor On Time. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 sec
Off Time	3 sec	The mechanical action, motor Off Time. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 sec
Time	0.5 Min	The Static Drain Sequence Time. (for 0 Minutes the Static Drain sequence will be skipped) (programmable in steps of 0,5 Minutes)	0 - 15,0 Min
Exit		Return to Edit Program Menu.	

6. OPERATION MENU

6.1. STARTING UP

> ⚠ **ATTENTION!**
>
> **BEFORE STARTING UP THE FIRST TIME, BE SURE THAT THE MACHINE IS WELL INSTALLED. SEE INSTALLATION MANUAL.**
>
> **MAKE SURE THAT THE CONFIGURATION AND INITIALIZATION MENU HAVE THE RIGHT SETTINGS. SEE CHAPTER 4.**

6.2. SWITCHING ON THE POWER

☞ The display lights up when you switch on the power.
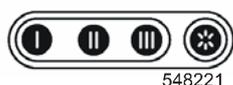   ◆ If the machine is ready to be started, **Select CYCLE** is displayed.

6.3. LOAD THE WASHING MACHINE

☞ Open the door and load the laundry into the drum. When the drum is loaded, close the door.

6.4. PUT SOAP INTO THE SOAP DISPENSER

☞ Put the correct amount of soap into the soap dispenser.

Washing machines with top soap dispenser

548221

   ◆ At the wash sequence, it depends of the pre-programmed water inlets in which the soap dispenser you have to add soap.

Washing machines with front soap dispenser

101009

   ◆ At the wash sequence, it depends of the pre-programmed soap supply signals in which boxes A, B, C, D or E you have to add soap.

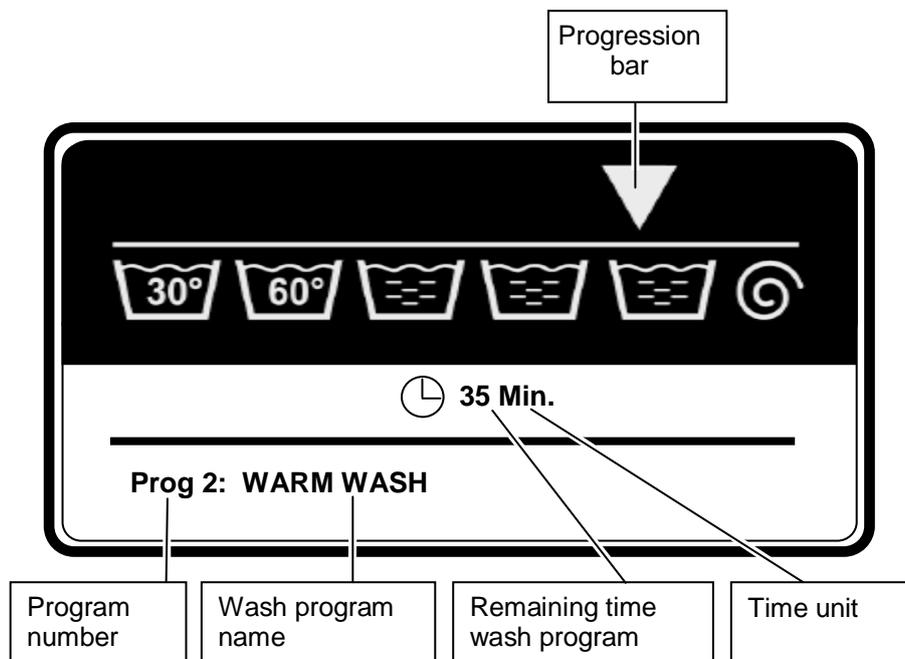➜ See paragraph 3.4. for more information.

6.5. STARTING A WASH PROGRAM

   ◆ Up to 99 programs can be selected. The first 20 are the standard Wash programs you can find in this manual at Paragraph 7.2., 7.3.

☞ Insert the program number.

☞ Press the „**START**" button.
   ◆ If there is no program available for a specific program number, **INVALID** is displayed.

6.6. PROGRAMMING A DELAY TIME

☞   Enter the selected Program Number.

☞   Press the Dot button.

    The Delay time message will be displayed.

    ➔ The door must be closed first.

☞   Now you can insert the value for a delay time

    DELAYED START _ _ : _ _

    ➔ First insert a value for the Hours, then insert a value for the Minutes

    ➔ The minimum delay time is 1 minute [00:01]

    ➔ The maximum delay time is 99 hours and 59 minutes [99:59]

☞   By pressing the **START** button, the delay time will start to decrease.

    ➔ The Door will be locked immediately.

    Once the delay time is over, the wash cycle will start automatically.

    ➔ The Delay Time Sequence can be interrupted by pressing the **Stop** button.

    The program will return to the Start Up menu: **SELECT CYCLE**.

6.7. THE ACTIVE PROGRAM

    • The cycle time will decrease minute by minute and gives you an indication how long it will take before the cycle is finished.

    • A Progression bar shows the progression of the wash cycle and the active wash step.

Progression bar

Prog 2: WARM WASH

Program number

Wash program name

Remaining time wash program

Time unit

6.8. ADVANCING A WASH PROGRAM

☞ Press the **ARROW RIGHT** button to increase the wash sequence time.

☞ Press the **ARROW LEFT** button to decrease the wash sequence time.

☞ Press the **START** button to skip the current step.

6.9. WASH TIME

* Once the program has been started, the remaining cycle time is displayed.
* The clock symbol indicates whether the time of the running cycle is being counted down or not. If the clock symbol is not flashing, it means that the cycle time is not being counted down.
* The time for which the symbol is not flashing is the extra time.
* The total wash time = programmed time (1) + the extra time (2+3+4+5)
    1. The programmed time of the processes.
    2. The extra time for taking water.
    3. The extra time for draining (if the water is not drained in 30 sec and the extended drain time is started)
    4. The extra time for heating if „Wait for temperature" is selected.
    5. The extra free run time at the end of the spin sequence.

6.10. PROGRAM END

- The time on the display counts down until 0.
- At the end of the cycle, the door lock is released, the display shows the **UNLOAD** message and it is possible to open the door (unload the laundry).

☞ Open the door and unload the machine.

- The Message **UNLOAD** will be erased and the machine is ready to start a new program.

SELECT CYCLE is displayed.

⚠ **ATTENTION!**
IN CASE OF HYGIENIC DESINFECTIVE WASH PROGRAMS IN THE INITIALIZATION MENU „MANUAL OVERRIDE" AND „ALLOW ADVANCE" MUST BE SWITCHED OFF.

6.11. WATER FILL PROCESS

- Depending on the water temperature the cold and hot inlet valves will be opened.
- The water level is measured by an electronic water level sensor.
- If the Temperature Balance function is enabled, the Wash Computer will control the water temperature until the target temperature is reached. For Hot wash programs, extra heating will be required after the fill process to reach the programmed hot water temperature.
- In the standard wash tables you will find a Normal Low and Normal High water level.
- These are the standard water levels :
  - The Normal Low water level is used for the Prewash, Wash and Soak sequence.
  - The Normal High water level is used for the Rinse and Final Rinse sequence.

- The water level can only be programmed between two limits:
  - The lower limit is above the heating elements and the temperature sensor.
  - The upper limit is in the middle of the wash drum.

6.12. HEATING PROCESS

- When „No Wait for Temperature" (No Wait for Heat) is selected:
  - The machine will heat until the time of the specific wash step is over or if the programmed temperature was reached.
  - Even if the programmed temperature is not reached, the program will start the next sequence if the time of the sequence is over.
- When „Wait for Temperature" (Wait for Heat) is selected:
  - The machine will heat until the programmed temperature is reached.
    The programmed time of the wash sequence will only start counting down from the moment that the target temperature was reached.

⚠ **ATTENTION!**
WHEN THE MACHINES DO NOT HAVE ELECTRICAL OR STEAM HEATING NO „WAIT FOR TEMPERATURE" SHOULD BE SELECTED IN THE INITIALIZATION MENU.

6.13. COOLDOWN FUNCTION

- ◆ AUTOMATIC COOLDOWN : this function avoids thermal shock in the washing machine.
  - ➔ For Hot washes above 65°C, Cold water is added at the end of the step.
- ◆ PROGRAMMED COOLDOWN : this function is recommended to avoid the shrinking of the garments.
  - ➔ Water is drained and cold water is added bit by bit. The temperature of the water in the tub will decrease slowly as a function of the programmed Cool-down Sequence (temperature and time).

6.14. SPRAY FUNCTION

- ◆ The special product is injected while the drain valve is open and depending the programmed speed, the drum will spin at distribution or low spin speed.

6.15. UNBALANCE

- ◆ When the machine is badly loaded during the spin sequence, then the safety switch or the overweight detection system will get activated.
- ◆ The spin sequence will be interrupted and the garments in the drum will be redistributed.
- ◆ The washing machine will try up to 5 times to redistribute the garments.
- ◆ In case that this does not solve the unbalance problem, the washer will reduce the maximum revolutions of the spinning sequence.

6.16. PAUSE

- ◆ When a signal has been programmed, at the end of a wash sequence, the machine will stop the Program and the message „**Pause, Press Start to Continue"** will be displayed.
- ◆ The buzzer will give a warning for the operator.
- ◆ By opening the Soap Door, the buzzer is switched off.
  (Front soap dispenser washing machines only)
- ◆ Now the operator can add Soap.
- ◆ By pressing the **START** button the PROGRAM will go on with the next Program step.

6.17. STOP

- ◆ By pressing the **STOP** button the program is interrupted.
- ◆ First the machine will go over to a safe state.
- ◆ Then the message **CONTINUE ?** is displayed.

☞ **STOP** : the program is stopped. (A tumble sequence will be executed before the door can be opened.)

☞ **START** : the program restarts the last active step, and goes on with the rest of the program.

6.18. OPEN SOAP BOX

ONLY FOR WASHING MACHINES WITH FRONT SOAP DISPENSER

- By opening the soap dispenser door, the Program is interrupted at once.
- First the machine will go over to a safe state.
- Then the message **"CLOSE SOAP DOOR"** is displayed.
- Once the soap dispenser door is closed again, the message **CONTINUE ?** will be displayed.

☞ **STOP** : the program is stopped. (A tumble sequence will be executed before the door can be opened.)

☞ **START** : the program restarts the last active step, and goes on with rest of the program.

- It's recommended to program a pause (signal) if you want to fill the same soap box twice while the program is running.

6.19. WAIT STATE

- It can occur that the normal machine operation has been interrupted and that you have to wait until the Wash Computer allows you to go on.
- You can recognize the wait state by a display that shows **WAIT** and a decreasing counter.
- This will occur when the power has been switched off and on at a running wash cycle.
- As the software doesn't know how fast the motor was spinning, a delay time is respected before the machine can be restarted.

6.20. HOW TO HANDLE FAILURE MESSAGES

- When a failure has been detected by the Wash Computer, a failure message is generated to inform the operator about the problem.

```
Out Of Order (Pr: XX St: YY)

Ask For Service

(Err ZZZ : Fault Message)
```
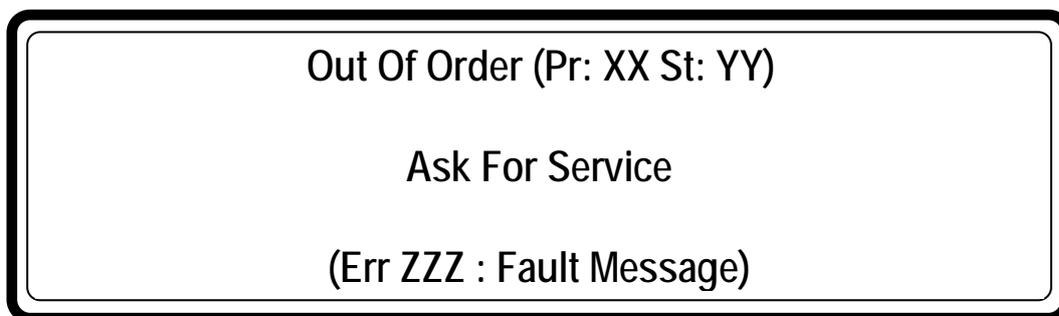
XX	: The Program number
YY	: The Step number
Err ZZZ	: The error number
Fault Message	: The name of the error message

- At the upper line, the program number and step number of the interrupted program are displayed.
- The message **UNLOAD!** will inform you if it's allowed to open the door.

❑ **Safety conditions**
- If there is still water in the drum or if the temperature is too high, it's not possible to open the door.
- The messages „**WATER IN CAGE**" or „**TOO HOT** " will be displayed together with the level and the temperature.

> ⚠ **ATTENTION!**
> **IT'S UP TO THE OPERATOR TO TAKE THE NECESSARY PRECAUTIONS IF THE DRAIN VALVE IS NOT FUNCTIONAL AND THERE IS STILL HOT WATER IN THE TUB AT THE END OF THE WASH CYCLE. ON THE DISPLAY THE ACTUAL WATER TEMPERATURE AND LEVEL WILL BE DISPLAYED. WAIT UNTIL THE WATER IS DRAINED AND UNTIL THE WATER HAS COOLED BEFORE ALL INTERVENTIONS AS HOT WATER CAN CAUSE BURNS.**

- If something goes wrong with the door lock, the program will be finished immediately.
- For safety purposes, the door will stay locked.

> ⚠ **ATTENTION!**
> **GO TO THE CHAPTER 8 TROUBLE SHOOTING TO FIND OUT MORE ABOUT ERROR HANDLING.**

6.21. HOW TO HANDLE POWER INTERRUPTIONS

See Installation, maintenance and user's manual.

6.22. SPECIAL FUNCTION BUTTONS

The Special Function buttons **Info** and **Service** are dedicated to supply the operator with more information about the wash programs and the wash machine functions.

6.22.1. INFO

☞ Press the **INFO** button if you want to find out what a program looks like.

- If no program is selected or running, an overview of all available programs is displayed.
- If a program is selected or running, a detailed overview of all the program steps is displayed.
- At each step are shown all the menu items.
- You can leave the Info menu by pressing the **INFO** button again.

6.22.2. SERVICE INFO

☞ Press the **SERVICE INFO** button if you want to inspect the actual water temperature and level.

- At the Service info you can inspect:
  - the water temperature and water level
  - the number of cycles that have been accumulated (service due)
  - the actual wash machine states at the running wash cycle
- By pressing the **ARROW DOWN** button you will see all the menu items.
- You can leave the Service info by pressing the Service info button again.

6.22.3. INLETS 1, 2, 3, 4, 5, 6, 7, 8

☞ If, during a process in operation, you want to open a water inlet, move in the Service Info menu to the last page and activate the desired inlet (valve) by pressing the corresponding button of the buttons numbered 1 to 8.

INLET 1, 2, 3, 4 , 5, 6, 7, 8.

- Only functional at a running wash sequence.
- The corresponding inlet valve will be opened while you are pressing the button.

| ⚠ ATTENTION!
ALL THE SAFETY FUNCTIONS WILL STILL BE ACTIVE, SO IT CAN OCCUR THAT YOU CAN'T
ACTIVATE THE INLETS. |
|---|

6.22.4. DRAIN

☞ If, during a process in operation, you want to open the draining valve, move in the Service Info menu to the last page and activate the draining by pressing the button 0.

- ♦ Only functional at a running **wash** sequence.
- ♦ The drain valve will be opened for the time you are pressing the button.

6.22.5. HEATING

☞ If, during a process in operation, you want to activate the heating, move in the Service Info menu to the last page and activate the heating by pressing the button 9.

- ♦ Only functional at a running wash sequence.
- ♦ The contactor of the heating will remain activated for the time for which you hold the button pressed.

| ⚠ ATTENTION!
ALL THE SAFETY FUNCTIONS WILL STILL BE ACTIVE, SO IT CAN OCCUR THAT YOU CAN'T
ACTIVATE THE HEATING. |
|---|

6.22.6. SPEED ADJUST

☞ If, during a process in operation, you want to change the rotational speed (revolutions) of the drum, move in the Service Info menu to the last page and after having pressed the "." (dot) button, enter a new rotational speed (number of revolutions).

- ♦ You can adjust the drum speed by inserting a new value.
- ♦ The speed limits will be respected depending on the washing machine type.

| ⚠ ATTENTION!
ALL THE SAFETY FUNCTIONS WILL STILL BE ACTIVE , SO IT CAN OCCUR THAT YOU CAN'T
CHANGE THE SPIN SPEED. |
|---|

6.23. EXTERNAL LIQUID SOAP BOXES

- ♦ If the washing machine is connected with external soap pumps, a signal from the soap supply reservoir can be connected to the washing machine computer.
- ♦ If the Soap box is almost empty, then the diagnostic message „Err 39 out of soap" will be shown on the display of the Wash Computer.
- ♦ So the operator does not have to check the soap supply reservoirs continuously to avoid washing without soap.

6.24. AUTOMATIC WEIGHING SYSTEM (OPTILOAD)

- FX180-280 and FS33-1200 machines can be equipped with an automatic weighing system. When the door is open, a screen with a weighing scale is displayed.
- The operator is invited to press the „0" number button (TARE) to put the scale on „0" kg. By pressing the „0" button, the message „Reference weight is set to 0" is shown.
- The operator loads the machine and can follow on the display how much linen is put in the washing machine.
- If the load exceeds the capacity of the washing machine, the wash computer shows an „Overload" message.
- At the bottom of the display is shown a progress bar as simple indicator how much linen has been loaded.
- By closing the door, the display with weighing information is replaced by the display to select a wash cycle.

```
┌────────────────────────────────────────────┐
│ TARE:     ┌──────────────────────┐  Close   │
│ Press 0   │        60            │  Door    │
│           │               kg     │          │
│           └──────────────────────┘  66 %    │
│           ▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓         │          │
└────────────────────────────────────────────┘
```
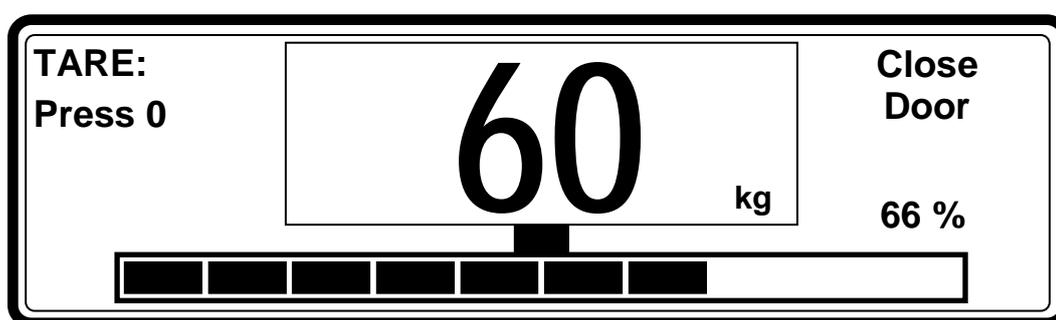
6.25. SYSTEM WITH MANUAL ENTERING OF THE LINEN WEIGHT (SMART LOAD)

- If you now the weight of the linen load (e.g. you weight it before washing), you can activate the function of manual entering of the linen weight (Advanced menu / Weighing).

- If the door is open there is shown „0kg" as the linen load weight on the display. Enter the weight value. When you close the door, you will be able to select a wash cycle.

- Depending on the entered weight value of the linen you can enable an automatic setting of the water consumption and liquid soap supply.

7. PRE-PROGRAMMED PROGRAMS

The Wash Computer contains 20 pre-programmed Standard Wash Programs.

(Standard Programs : 1 to 20.   Programs 21 to 57 are dedicated.)

⚠ **ATTENTION!**
THE PRE-PROGRAMMED PROCESSES ARE GIVEN AS AN EXAMPLE ONLY.
FOR THE CREATION OF YOUR OWN WASH PROGRAMS, CONTACT YOUR SOAP SUPPLIER.

7.1. LEGEND

❑ WATER INLETS (VALVES)

- Washing machine with top soap dispenser

- Inlet Valve **1**:	Cold Soft Water	Soap Dispenser Compartment „I"	Pre wash
- Inlet Valve **2**:	Cold Soft Water	Soap Dispenser Compartment „II"	Wash - detergent
- Inlet Valve **3**:	Cold Soft Water	Soap Dispenser Compartment „III"	Wash - liquid
- Inlet Valve **4**:	Cold Hard Water	Soap Dispenser Compartment „Fabric softener"	Last rinse
- Inlet Valve **5**:	Hot Soft Water	Soap Dispenser Compartment „I"	Pre wash
- Inlet Valve **6**:	Hot Soft Water	Soap Dispenser Compartment „II"	Wash - detergent
- Inlet Valve **7**:	Cold Hard Water	Direct Inlet	(External liquid soap)
- Inlet Valve **8**:	Hot Soft Water	Soap Dispenser Compartment „III"	Wash - liquid

- Machines with front soap dispenser
  - Inlet Valve **1** :   Cold Hard water   (Inlet Valve 1 is not operational, if no hard water is available)
  - Inlet Valve **2** :   Cold Soft water
  - Inlet Valve **3** :   Hot Soft water

❑ WATER LEVEL

- **NL**: **N**ormal **L**ow level
- **NH**: **N**ormal **H**igh level
- **EL**: **E**conomic **L**ow level
- **EH**: **E**conomic **H**igh level

❑ WASH ACTION

- Normal Wash Action
  - **A** = **12"**   12 Seconds Action
  - **R** = **3"**   3 Seconds Rest

- Gentle Wash Action
  - **A** = **3"**   3 Seconds Action
  - **R** = **12"**   12 Seconds Rest

❑ RPM (REVOLUTIONS PER MINUTE)

- **W:** Washing Speed ($\approx$ 32 - 50 RPM)
- **D:** Distribution Speed (not changeable) ($\approx$ 100 RPM)
- **L:** Low extraction speed, standard ($\approx$ 400 RPM)
- **H:** High extraction speed ($\approx$ 625 - 1165 RPM) (depending on the machine capacity)

7.2. WASH PROGRAMS FOR WASHING MACHINES WITH TOP SOAP DISPENSER
(FOR THREE WATER TYPES: COLD SOFT, COLD HARD, HOT)

NOTE!
WASH PROGRAMS FOR TWO WATER TYPES (COLD AND HOT) ARE THE SAME AS THE PROGRAMS FOR THREE WATER TYPES; THE ONLY DIFFERENCE BEING THAT THE INLET VALVE (7) ISN'T USED.

❏ WASH PROGRAM 1: HOT WASH INTENSIVE - 90°C

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Prewash / wash	1-5-7	30°C	NH	5 min	W (normal)	1=30"
	Spin	-	-	-	1 min	L	-
Step 2	Main wash	2-3-6-8	90°C	NH	10 min	W (normal)	2=30"
	Drain	-	-	-	30 s	D	
Step 3	Rinse 1	1-2-7	-	NH	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 4	Rinse 2	1-2-7	-	NH	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 5	Rinse 3	1-4-7	-	NL	4 min	W (normal)	3=30"
	Final spin/Spin	-	-	-	9 min	H	-
	Slowdown	-	-	-	x	-	-
	Tumble	-	-	-	30 s	W (5s / 5s)	-

❏ WASH PROGRAM 2: WARM WASH INTENSIVE - 60°C

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Prewash / wash	1-5-7	30°C	NH	5 min	W (normal)	1=30"
	Spin	-	-	-	1 min	L	-
Step 2	Main wash	2-3-6-8	60°C	NH	10 min	W (normal)	2=30"
	Drain	-	-	-	30 s	D	
Step 3	Rinse 1	1-2-7	-	NH	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 4	Rinse 2	1-2-7	-	NH	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 5	Rinse 3	1-4-7	-	NL	4 min	W (normal)	3=30"
	Final spin/Spin	-	-	-	9 min	H	-
	Slowdown	-	-	-	X	-	-
	Tumble	-	-	-	30 s	W (5s / 5s)	-

❑ WASH PROGRAM 3: COLORED WASH INTENSIVE - 40°C

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Prewash / wash	1-5-7	30°C	NH	5 min	W (normal)	1=30"
	Spin	-	-	-	1 min	L	-
Step 2	Main wash	2-3-6-8	40°C	NH	10 min	W (normal)	2=30"
	Drain	-	-	-	30 s	D	-
Step 3	Rinse 1	1-2-7	-	NH	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 4	Rinse 2	1-2-7	-	NH	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 5	Rinse 3	1-4-7	-	NL	4 min	W (normal)	3=30"
	Final spin/Spin	-	-	-	9 min	H	-
	Slowdown	-	-	-	x	-	-
	Tumble	-	-	-	30 s	W (5s / 5s)	-

❑ WASH PROGRAM 4: BRIGHT WASH INTENSIVE - 30°C

NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2-3-6-8	30°C	NH	10 min	W (normal)	2=30"
	Drain	-	-	-	30 sec	D	
Step 2	Rinse 1	1-2-7	-	NH	4 min	W (normal)	-
	Drain	-	-	-	1 min	D	-
Step 3	Rinse 2	1-2-7	-	NH	4 min	W (normal)	-
	Drain	-	-	-	1 min	D	-
Step 4	Rinse 3	1-4-7	-	NL	4 min	W (normal	3=30"
	Final spin/Spin	-	-	-	9 min	H	-
	Slowdown	-	-	-	x	-	-
	Tumble	-	-	-	30 sec	W (5s / 5s)	-

❏ WASH PROGRAM 5: WOOLENS - 15°C

NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2-3	15°C	NH	6 min	W (gentle)	2=30"
	Drain	-	-	-	30 s	D	
Step 2	Rinse 1	1-2-7	-	NH	2 min	W (gentle)	-
	Drain	-	-	-	30 sec	D	-
Step 3	Rinse 2	1-2-7	-	NH	2 min	W (gentle)	-
	Drain	-	-	-	30 s	D	-
Step 4	Rinse 3	1-4-7	-	NH	3 min	W (gentle)	3=30"
	Final spin/Spin	-	-	-	2,5 min	L	-
	Slowdown	-	-	-	X	-	-
	Tumble	-	-	-	30 s	W (gentle)	-

❏ WASH PROGRAM 6: HOT WASH - 90°C

NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2-3-6-8	90°C	NL (1)	20 min	W (normal)	2=30"
	Drain	-	-	-	30 s	D	
Step 2	Rinse 1	1-2-7	-	EH	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 3	Rinse 2	1-2-7	-	EH	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 4	Rinse 3	1-4-7	-	EH	6 min	W (normal)	3=30"
	Final spin/Spin	-	-	-	9 min	H	-
	Slowdown	-	-	-	X	-	-
	Tumble	-	-	-	30 s	W (5s / 5s)	-

(1) EH – FX135, RX135M

❑ WASH PROGRAM 7: WARM WASH - 60°C
NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2-3-6-8	60°C	NL (1)	20 min	W (normal)	2=30"
	Drain	-	-	-	30 s	D	
Step 2	Rinse 1	1-2-7	-	EH	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 3	Rinse 2	1-2-7	-	EH	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 4	Rinse 3	1-4-7	-	EH	6 min	W (normal)	3=30"
	Final spin/Spin	-	-	-	9 min	H	-
	Slowdown	-	-	-	x	-	-
	Tumble	-	-	-	30 s	W (5s / 5s)	-

(1) EH – FX135, RX135M

❑ WASH PROGRAM 8: COLORED WASH - 40°C
NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2-3-6-8	40°C	NL (1)	20 min	W (normal)	2=30"
	Drain	-	-	-	30 s	D	
Step 2	Rinse 1	1-2-7	-	EH	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 3	Rinse 2	1-2-7	-	EH	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 4	Rinse 3	1-4-7	-	EH	6 min	W (normal)	3=30"
	Final spin/Spin	-	-	-	9 min	H	-
	Slowdown	-	-	-	x	-	-
	Tumble	-	-	-	30 s	W (5s / 5s)	-

(1) EH – FX135, RX135M

❑ WASH PROGRAM 9: BRIGHT WASH - 30°C

NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2-3-6-8	30°C	NL (1)	20 min	W (normal)	2=30"
	Drain	-	-	-	30 s	D	
Step 2	Rinse 1	1-2-7	-	EH	4 min	W (normal)	-
	Drain	-	-	-	1 min	D	-
Step 3	Rinse 2	1-2-7	-	EH	4 min	W (normal)	-
	Drain	-	-	-	1 min	D	-
Step 4	Rinse 3	1-4-7	-	EH	6 min	W (normal)	3=30"
	Final spin/Spin	-	-	-	9 min	H	-
	Slowdown	-	-	-	x	-	-
	Tumble	-	-	-	30 s	W (5s / 5s)	-

(1) EH – FX135, RX135M

❑ WASH PROGRAM 10: ECO HOT WASH - 90°C

NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2-3-6-8	85°C	EH (1)	14 min	W (normal)	2=30"
	Drain	-	-	-	1 min	L	
Step 2	Rinse 1	1-2-7	-	EL (2)	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 3	Rinse 3	1-4-7	-	EL (3)	4 min	W (normal)	3=30"
	Final spin/Spin	-	-	-	9 min	H	-
	Slowdown	-	-	-	x	-	-
	Tumble	-	-	-	30 s	W (5s/5s)	-

(1) EL – FX135, RX135M
(2) NL – FX135, RX135M
(3) EH – FX105, FX135, RX105M, RX135M

❑ WASH PROGRAM 11: ECO WARM WASH - 60°C
NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2-3-6-8	55°C	EH (1)	14 min	W (normal)	2=30"
	Drain	-	-	-	1 min	L	
Step 2	Rinse 1	1-2-7	-	EL (2)	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 3	Rinse 3	1-4-7	-	EL (3)	4 min	W (normal)	3=30"
	Final spin/Spin	-	-	-	9 min	H	-
	Slowdown	-	-	-	X	-	-
	Tumble	-	-	-	30 s	W (5s/5s)	-

(1) EL – FX135, RX135M

(2) NL – FX135, RX135M

(3) EH – FX105, FX135, RX105M, RX135M

❑ WASH PROGRAM 12: ECO COLOR WASH - 40°C
NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2-3-6-8	40°C	EH (1)	14 min	W (normal)	2=30"
	Drain	-	-	-	1 min	L	
Step 2	Rinse 1	1-2-7	-	EL (2)	4 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 3	Rinse 3	1-4-7	-	EL (3)	4 min	W (normal)	3=30"
	Final spin/Spin	-	-	-	9 min	H	-
	Slowdown	-	-	-	X	-	-
	Tumble	-	-	-	30 s	W (5s/5s)	-

(1) EL – FX135, RX135M

(2) NL – FX135, RX135M

(3) EH – FX105, FX135, RX105M, RX135M

❑ WASH PROGRAM 13: ECO BRIGHT WASH - 30°C

NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2-3-6-8	30°C	EH (1)	14 min	W (normal)	2=30"
	Drain	-	-	-	1 min	D	
Step 2	Rinse 1	1-2-7	-	EL (2)	4 min	W (normal)	-
	Spin	-	-	-	1 min	D	-
Step 3	Rinse 3	1-4-7	-	EL (3)	4 min	W (normal)	3=30"
	Final spin/Spin	-	-	-	9 min	H	-
	Slowdown	-	-	-	x	-	-
	Tumble	-	-	-	30 s	W (5s/5s)	-

(1) EL – FX135, RX135M

(2) NL – FX135, RX135M

(3) EH – FX105, FX135, RX105M, RX135M

❑ WASH PROGRAM 14: EXTRACTION - LOW SPEED

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Rinse	1-4-7	-	NH	3 min	W (normal)	3=30"
	Final spin/Spin	-	-	-	5,5 min	L	-
	Slowdown	-	-	-	x	-	-
	Tumble	-	-	-	30 s	W (normal)	-

❑ WASH PROGRAM 15: EXTRACTION - HIGH SPEED

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Rinse	1-4-7	-	NH	3 min	W (normal)	3=30"
	Final spin/Spin	-	-	-	12 min	H	-
	Slowdown	-	-	-	X	-	-
	Tumble	-	-	-	30 s	W (normal)	-

❑ WASH PROGRAM 16: SPORT - 60°C
NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2-3-6-8	54°C	NL	6 min	W (normal)	2=30"
	Drain	-	-	-	1 min	L	
Step 2	Rinse 1	1-2-7	-	NL	2 min	W (normal)	-
	Drain	-	-	-	1 min	L	-
Step 3	Rinse 2	1-2-7	-	NL	2 min	W (normal)	-
	Drain	-	-	-	1 min	L	-
Step 4	Rinse 3	1-4-7	-	NL	2 min	W (normal)	3=30"
	Final spin/Spin	-	-	-	6 min	H	-
	Slowdown	-	-	-	X	-	-
	Tumble	-	-	-	30 s	W (5s / 5s)	-

❑ WASH PROGRAM 17: MOPS - 60°C

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Prewash / wash	1-5-7	1°C	NH	2 min	W (normal)	1=30"
	Spin	-	-	-	1 min	L	-
Step 2	Main wash	2-3-6-8	60°C	NL	10 min	W (normal)	2=30"
	Drain	-	-	-	1 min	L	
Step 3	Rinse 1	1-2-7	-	NH	2 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 4	Rinse 2	1-2-7	-	NH	2 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 5	Rinse 3	1-4-7	-	NL	3 min	W (normal)	3=30"
	Final spin/Spin	-	-	-	6 min	H	-
	Slowdown	-	-	-	x	-	-
	Tumble	-	-	-	30 s	W (5s / 5s)	-

❑ WASH PROGRAM 18: HORSE CLOTHS - 40°C

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Prewash / wash	1-5-7	28°C	NH	4 min	W (normal)	1=30"
	Spin	-	-	-	1 min	L	-
Step 2	Main wash	2-3-6-8	35°C	NH	6 min	W (normal)	2=30"
	Drain	-	-	-	30 sec	D	
Step 3	Rinse 1	1-2-7	-	NH	2 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 4	Rinse 2	1-2-7	-	NH	2 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 5	Rinse 3	1-4-7	-	NL	3 min	W (normal)	3=30"
	Final spin/Spin	-	-	-	4 min	L	-
	Slowdown	-	-	-	x	-	-
	Tumble	-	-	-	30 s	W (5s / 5s)	-

❑ WASH PROGRAM 19: JEANS - 60°C

NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2-3-6-8	52°C	NL	8 min	W (normal)	2=30"
	Drain	-	-	-	1 min	D	
Step 2	Rinse 1	1-2-7	-	NH	3 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 3	Rinse 3	1-4-7	-	NH	3 min	W (normal)	3=30"
	Final spin/Spin	-	-	-	6 min	H	-
	Slowdown	-	-	-	x	-	-
	Tumble	-	-	-	30 s	W (5s/5s)	-

❑ WASH PROGRAM 20: STARCHING

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Prewash / wash	1-5-7	28°C	NL	4 min	W (normal)	1=30"
	Spin	-	-	-	6 min	H	-
	Slowdown	-	-	-	x	-	-
	Tumble	-	-	-	30 s	W (5s / 5s)	-

7.3. WASH PROGRAMS FOR WASHING MACHINES WITH FRONT SOAP DISPENSER

❑ WASH PROGRAM 1: HOT WASH - 90°C

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Prewash / wash	2 - 3	30°C	NL	5 min	W (normal)	A=30"
	Spin		-	-	1 min	L	-
Step 2	Main wash	2 - 3	90°C	NL	10 min	W (normal)	B=30"
	Drain		-	-	30 s	D	-
Step 3	Rinse 1	2	-	NH	2 min	W (normal)	-
	Spin		-	-	1 min	L	-
Step 4	Rinse 2	2	-	NH	2 min	W (normal)	-
	Spin		-	-	1 min	L	-
Step 5	Rinse 3	1 (2)	-	NL	3 min	W (normal)	D=30"
	Final spin/Spin		-	-	5,5 min	H	-
	Slowdown		-	-	x	-	-
	Tumble		-	-	30 s	W (5s / 5s)	-

❑ WASH PROGRAM 2: WARM WASH - 60°C

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Prewash / wash	2 - 3	30°C	NL	5 min	W (normal)	A=30"
	Spin		-	-	1 min	L	-
Step 2	Main wash	2 - 3	60°C	NL	10 min	W (normal)	B=30"
	Drain		-	-	30 s	D	-
Step 3	Rinse 1	2	-	NH	2 min	W (normal)	-
	Spin		-	-	1 min	L	-
Step 4	Rinse 2	2	-	NH	2 min	W (normal)	-
	Spin		-	-	1 min	L	-
Step 5	Rinse 3	1 (2)	-	NL	3 min	W (normal)	D=30"
	Final spin/Spin		-	-	5,5 min	H	-
	Slowdown		-	-	X	-	-
	Tumble		-	-	30 s	W (5s / 5s)	-

❑ WASH PROGRAM 3: COLORED WASH - 40°C

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Prewash / wash	2 - 3	30°C	NL	5 min	W (normal)	A=30"
	Spin		-	-	1 min	L	-
Step 2	Main wash	2 - 3	40°C	NL	10 min	W (normal)	B=30"
	Drain		-	-	30 s	D	-
Step 3	Rinse 1	2	-	NH	2 min	W (normal)	-
	Spin		-	-	1 min	L	-
Step 4	Rinse 2	2	-	NH	2 min	W (normal)	-
	Spin		-	-	1 min	L	-
Step 5	Rinse 3	1 (2)	-	NL	3 min	W (normal)	D=30"
	Final spin/Spin		-	-	5,5 min	H	-
	Slowdown		-	-	x	-	-
	Tumble		-	-	30 s	W (5s / 5s)	-

❑ WASH PROGRAM 4: BRIGHT COLORED WASH - 30°C
NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2 - 3	30°C	NL	8 min	W (normal)	B=30"
	Drain		-	-	30 sec	D	-
Step 2	Rinse 1	2	-	NH	2 min	W (normal)	-
	Drain		-	-	30 sec	D	-
Step 3	Rinse 2	2	-	NH	2 min	W (normal)	-
	Drain		-	-	30 sec	D	-
Step 4	Rinse 3	1 (2)	-	NL	3 min	W (normal)	D=30"
	Final spin/Spin		-	-	4 min	H	-
	Slowdown		-	-	x	-	-
	Tumble		-	-	30 sec	W (5s / 5s)	-

❑ WASH PROGRAM 5: WOOLENS - 15°C

NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2	15°C	NH	6 min	W (jemné)	B=30"
	Drain		-	-	30 s	D	-
Step 2	Rinse 1	2	-	NH	2 min	W (jemné)	-
	Drain		-	-	30 sec	D	-
Step 3	Rinse 2	2	-	NH	2 min	W (jemné)	-
	Drain		-	-	30 s	D	-
Step 4	Rinse 3	1 (2)	-	NH	3 min	W (jemné)	D=30"
	Final spin/Spin		-	-	2,5 min	L	-
	Slowdown		-	-	X	-	-
	Tumble		-	-	30 s	W (jemné)	-

❑ WASH PROGRAM 6: ECO HOT WASH - 90°C

NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2 - 3	90°C	EL	25 min	W (normal)	B=30"
	Drain		-	-	30 s	D	-
Step 2	Rinse 1	2	-	EH	4 min	W (normal)	-
	Drain		-	-	1 min	L	-
Step 3	Rinse 2	2	-	NL	4 min	W (normal)	-
	Drain		-	-	1 min	L	-
Step 4	Rinse 3	1 (2)	-	EH	6 min	W (normal)	D=30"
	Final spin/Spin		-	-	5,5 min	H	-
	Slowdown		-	-	X	-	-
	Tumble		-	-	30 s	W (5s / 5s)	-

❑ WASH PROGRAM 7: ECO WARM WASH - 60°C

NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2 - 3	60°C	EL	20 min	W (normal)	B=30"
	Drain		-	-	30 s	D	-
Step 2	Rinse 1	2	-	EH	4 min	W (normal)	-
	Drain		-	-	1 min	L	-
Step 3	Rinse 2	2	-	NL	4 min	W (normal)	-
	Drain		-	-	1 min	L	-
Step 4	Rinse 3	1 (2)	-	EH	6 min	W (normal)	D=30"
	Final spin/Spin		-	-	5,5 min	H	-
	Slowdown		-	-	x	-	-
	Tumble		-	-	30 s	W (5s / 5s)	-

❑ WASH PROGRAM 8: ECO COLORED WASH - 40°C

NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2 - 3	43°C	EL	20 min	W (normal)	B=30"
	Drain		-	-	30 s	D	-
Step 2	Rinse 1	2	-	EH	4 min	W (normal)	-
	Drain		-	-	1 min	L	-
Step 3	Rinse 2	2	-	NL	4 min	W (normal)	-
	Drain		-	-	1 min	L	-
Step 4	Rinse 3	1 (2)	-	EH	6 min	W (normal)	D=30"
	Final spin/Spin		-	-	5,5 min	H	-
	Slowdown		-	-	x	-	-
	Tumble		-	-	30 s	W (5s / 5s)	-

❏ WASH PROGRAM 9: ECO BRIGHT COLORED WASH - 30°C

NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2 - 3	34°C	EL	20 min	W (normal)	B=30"
	Drain		-	-	30 s	D	-
Step 2	Rinse 1	2	-	EH	4 min	W (normal)	-
	Drain		-	-	1 min	D	-
Step 3	Rinse 2	2	-	NL	4 min	W (normal)	-
	Drain		-	-	1 min	D	-
Step 4	Rinse 3	1 (2)	-	EH	6 min	W (normal)	D=30"
	Final spin/Spin		-	-	4 min	H	-
	Slowdown		-	-	x	-	-
	Tumble		-	-	30 s	W (5s/5s)	-

❏ WASH PROGRAM 10: SUPER ECO HOT WASH - 90°C

NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2 - 3	90°C	EL	10 min	W (normal)	B=30"
	Drain		-	-	1 min	L	-
Step 2	Rinse 1	2	-	EH	2 min	W (normal)	-
	Drain		-	-	1 min	L	-
Step 3	Rinse 3	1 (2)	-	EH	3 min	W (normal)	D=30"
	Final spin/Spin		-	-	5,5 min	H	-
	Slowdown		-	-	x	-	-
	Tumble		-	-	30 s	W (5s/5s)	-

❑ WASH PROGRAM 11: SUPER ECO WARM WASH - 60°C
NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2 - 3	60°C	EL	10 min	W (normal)	B=30"
	Drain		-	-	1 min	L	-
Step 2	Rinse 1	2	-	EH	2 min	W (normal)	-
	Drain		-	-	1 min	L	-
Step 3	Rinse 3	1 (2)	-	EH	3 min	W (normal)	D=30"
	Final spin/Spin		-	-	5,5 min	H	-
	Slowdown		-	-	x	-	-
	Tumble		-	-	30 s	W (5s/5s)	-

❑ WASH PROGRAM 12: SUPER ECO COLOR WASH - 40°C
NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2 - 3	40°C	EL	10 min	W (normal)	B=30"
	Drain		-	-	1 min	L	-
Step 2	Rinse 1	2	-	EH	2 min	W (normal)	-
	Drain		-	-	1 min	L	-
Step 3	Rinse 3	1 (2)	-	EH	3 min	W (normal)	D=30"
	Final spin/Spin		-	-	5,5 min	H	-
	Slowdown		-	-	x	-	-
	Tumble		-	-	30 s	W (5s/5s)	-

❑ **WASH PROGRAM 13: SUPER ECO BRIGHT COLOR WASH - 30°C**

NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2 - 3	30°C	EL	8 min	W (normal)	B=30"
	Drain		-	-	1 min	D	-
Step 2	Rinse 1	2	-	EH	2 min	W (normal)	-
	Drain		-	-	1 min	D	-
Step 3	Rinse 3	1 (2)	-	EH	3 min	W (normal)	D=30"
	Final spin/Spin		-	-	4 min	H	-
	Slowdown		-	-	x	-	-
	Tumble		-	-	30 s	W (5s/5s)	-

❑ **WASH PROGRAM 14: EXTRACTION - LOW SPEED**

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Rinse	1 (2)	-	NH	3 min	W (normal)	D=30"
	Final spin/Spin		-	-	5,5 min	L	-
	Slowdown		-	-	x	-	-
	Tumble		-	-	30 s	W (normal)	-

❑ **WASH PROGRAM 15: EXTRACTION - HIGH SPEED**

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Rinse	1 (2)	-	NH	3 min	W (normal)	D=30"
	Final spin/Spin		-	-	5,5 min	H	-
	Slowdown		-	-	x	-	-
	Tumble		-	-	30 s	W (normal)	-

❑ WASH PROGRAM 16: SPORT - 60°C
NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2-3	54°C	NL	6 min	W (normal)	2=30"
	Drain	-	-	-	1 min	L	
Step 2	Rinse 1	2	-	NL	2 min	W (normal)	-
	Drain	-	-	-	1 min	L	-
Step 3	Rinse 2	2	-	NL	2 min	W (normal)	-
	Drain	-	-	-	1 min	L	-
Step 4	Rinse 3	1	-	NL	2 min	W (normal)	3=30"
	Final spin/Spin	-	-	-	6 min	H	-
	Slowdown	-	-	-	X	-	-
	Tumble	-	-	-	30 s	W (5s / 5s)	-

❑ WASH PROGRAM 17: MOPS - 60°C

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Prewash / wash	2	1°C	NH	2 min	W (normal)	1=30"
	Spin	-	-	-	1 min	L	-
Step 2	Main wash	2-3	60°C	NL	10 min	W (normal)	2=30"
	Drain	-	-	-	1 min	L	
Step 3	Rinse 1	2	-	NH	2 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 4	Rinse 2	2	-	NH	2 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 5	Rinse 3	1	-	NL	3 min	W (normal)	3=30"
	Final spin/Spin	-	-	-	6 min	H	-
	Slowdown	-	-	-	x	-	-
	Tumble	-	-	-	30 s	W (5s / 5s)	-

❏ WASH PROGRAM 18: HORSE CLOTHS - 40°C

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Prewash / wash	2-3	28°C	NH	4 min	W (normal)	1=30"
	Spin	-	-	-	1 min	L	-
Step 2	Main wash	2-3	35°C	NH	6 min	W (normal)	2=30"
	Drain	-	-	-	30 sec	D	
Step 3	Rinse 1	2	-	NH	2 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 4	Rinse 2	2	-	NH	2 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 5	Rinse 3	1	-	NL	3 min	W (normal)	3=30"
	Final spin/Spin	-	-	-	4 min	L	-
	Slowdown	-	-	-	x	-	-
	Tumble	-	-	-	30 s	W (5s / 5s)	-

❏ WASH PROGRAM 19: JEANS - 60°C

NO PREWASH

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Main wash	2-3	52°C	NL	8 min	W (normal)	2=30"
	Drain	-	-	-	1 min	D	
Step 2	Rinse 1	2	-	NH	3 min	W (normal)	-
	Spin	-	-	-	1 min	L	-
Step 3	Rinse 3	1	-	NH	3 min	W (normal)	3=30"
	Final spin/Spin	-	-	-	6 min	H	-
	Slowdown	-	-	-	x	-	-
	Tumble	-	-	-	30 s	W (5s/5s)	-

❑ WASH PROGRAM 20: STARCHING

	Sequence	Inlet	Temp.	Level	Time	R.P.M (x)	Soap Supply
Step 1	Prewash / wash	1-5-7	28°C	NL	4 min	W (normal)	1=30"
	Spin	-	-	-	6 min	H	-
	Slowdown	-	-	-	x	-	-
	Tumble	-	-	-	30 s	W (5s / 5s)	-

8. TROUBLESHOOTING

8.1. DISPLAY MESSAGES

- ⬧ Various messages may appear on the display at the start, during or at the end of a washing cycle.
- ⬧ In some specific cases, an acoustic signal will alert the operator.
- ⬧ When an error occurs the machine will automatically go over to a safe state. With the diagnostic program you can determine the problem. This program will test the individual functions of the washing machine one by one.

8.2. FAULT MESSAGES

- ⬧ If a failure occurs the computer will display a diagnostic error message.
- ⬧ The program number and step at which the interruption has occurred are displayed.
- ⬧ The fault message itself contains a number and a corresponding text label by which it's easy to find the related information in the manual.
- ⬧ If **UNLOAD** is displayed, the door can be opened.

```
            Out Of Order (Pr XX St YY)

                  Ask For Service

              (Err ZZZ : Fault Message)
```
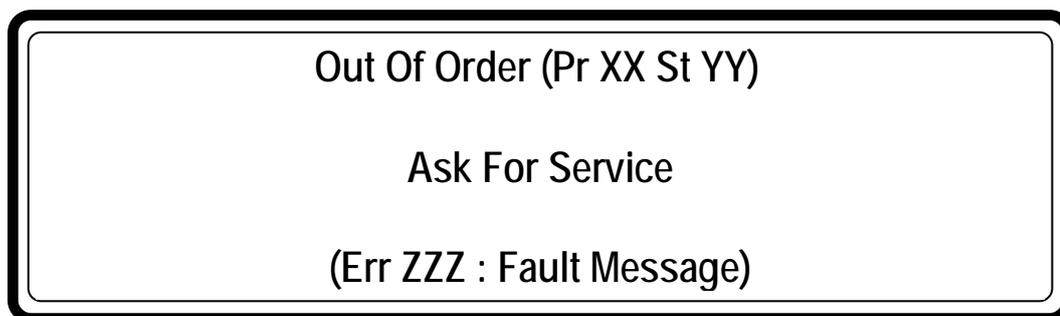
XX	: the program number
YY	: the program step number
Err ZZZ	: the number of the occurred error
Fault Message	: the text label of the error message

8.3. HOW TO HANDLE FAULT MESSAGES

> ⚠ **ATTENTION!**
> CHECK IN THE MANUAL TO SEE WHAT PROBLEM THE ERROR MESSAGE CORRESPONDS WITH.
> ASK THE ASSISTANCE OF AN EXPERIENCED TECHNICIAN TO SOLVE THE PROBLEM.
> ALL THE SAFETY PRECAUTIONS MUST BE FOLLOWED BEFORE EACH INTERVENTION.

- ◆ You can overrule and erase fault messages by:
  - ☞ pressing the **SERVIS** button
  - ☞ pressing the **STOP** or **ENTER** button

☞ switching the power off/on

☞ opening the door (fault 4 and 41)
- ◆ For safety reasons the door will not be unlocked if :
  - there is still water in the drum
  - the water temperature is above 55°C
  - the drum is still turning (a safety time will be respected until the drum comes to a standstill)
  - there is a problem with the door lock system

- ◆ Each time at the end of the cycle, the Wash computer will fulfill a safety test sequence.
- ◆ If at the end of the cycle the safety conditions are not fulfilled, the messages **TOO HOT** or **WATER IN CAGE** will be displayed.

TOO HOT XX°C	WATER IN CAGE XX°C Level YY
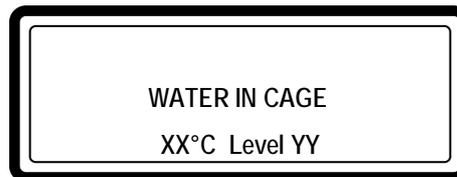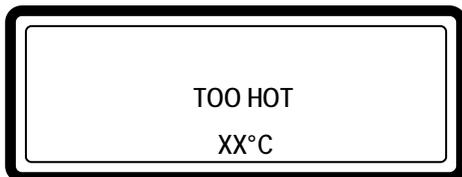
- ◆ If the problem disappears (the water has dropped below the safety level for spin or the water temperature has dropped below 55°C) the Error message **TOO HOT** or **WATER IN CAGE** will disappear automatically.

> ⚠ **ATTENTION!**
> IT'S UP TO THE OPERATOR TO TAKE THE NECESSARY PRECAUTIONS IF THE DRAIN VALVE IS
> NOT FUNCTIONAL AND IF THERE IS STILL HOT WATER IN THE TUB AT THE END OF THE WASH CYCLE.
> ON THE DISPLAY THE ACTUAL WATER TEMPERATURE AND LEVEL WILL BE DISPLAYED.
> WAIT UNTIL THE WATER IS DRAINED AND UNTIL THE WATER HAS COOLED BEFORE ALL
> INTERVENTIONS AS HOT WATER CAN CAUSE SEVERE BURNS.
> CARE MUST BE TAKEN THAT NOBODY GETS BURNED DUE TO HOT WATER.

⚠ **ATTENTION!**
THE ERROR MESSAGE TOO HOT CAN ALSO APPEAR AT THE END OF A CYCLE EVEN IF NO FAILURE HAS OCCURED
AS AN EXAMPLE, SUPPOSE A WASH PROGRAM WITH A HOT WASH.
AFTER THIS HOT WASH SEQUENCE, NO SEQUENCE WITH A LOW WATER TEMPERATURE HAS BEEN PROGRAMMED.
AT THE END OF SUCH A WASH CYCLE, THE TEMPERATURE IN THE TUB WILL STAY HIGH EVEN IF THERE IS NO WATER IN THE TUB.
AS A RESULT THE WASH COMPUTER WILL DECIDE THAT IT'S NOT SAFE TO OPEN THE DOOR AS THE MEASURED TEMPERATURE INSIDE THE TUB IS TOO HIGH.
WITHOUT INSERTING COLD WATER INSIDE THE TUB, IT CAN TAKE A LONG TIME BEFORE THE TEMPERATURE DROPS TO AN ACCEPTABLE SAFE LEVEL.
ONCE THE TEMPERATURE IN THE DRUM HAS DROPPED SUFFICIENTLY, THE FAILURE MESSAGE WILL DISAPPEAR AND THE DOOR WILL BE UNLOCKED AUTOMATICALLY.

DEPENDING ON THE FAILURE TYPE THE COMPUTER WILL START A SPECIFIC PROCEDURE:

❑ **WHEN SAFETY IS INVOLVED**

- ◆ Full stop + tumble   : the program is stopped but will run the tumble sequence
- ◆ Full stop + safety time   : the program is stopped and a safety time is started
- ◆ Don't start   : the program will not be started as long as the safety conditions are not fulfilled

❑ **WHEN SAFETY IS NOT INVOLVED**

- ◆ Full stop + request for continue : a request to **Continue ?** the program is displayed
- ◆ Skip + continue   : the actual cycle step is skipped and the program continues with the next step
- ◆ Continue   : the program continues

SPECIAL CASES :

- ◆ For **E11: Fill Time failure** and **E14: Heating time failure** after overruling and erasing the failure message, you can restart or stop the sequence, as **Continue ?** will be displayed.
  Possible cause :   - water supply inlets closed
                     - decreasing capacity of the heating elements

- ◆ Fault **31: Initialization fault inverter** and **32: Verification fault inverter** indicate that the frequency inverter is not loaded with the correct parameter settings, the washing machine can be damaged when the inverter is functioning with the wrong settings.
  Do not use the washing machine before a technician has inspected the problem.

- ◆ Fault **41: Service Due** will occur over and over again until you have reset the cycle counter.
  See Paragraph 8.5 how to reset the cycle counter.

8.4. OVERVIEW

N°	Failure message	Failure	Action	Fault occurrence
E2	No Drain End	Drain failure	Full Stop + tumble	Draining
E3	Tilt Fault	Safety switch activated	Full stop + tumble	Whole cycle, revolutions under the distribution revolutions level.
E4	Imbalance	Safety switch activated during the transition from distribution into spin sequence.	Skip + continue	Spin
E5	Tilt High Sp	Safety switch activated at high revolutions.	Full stop + safety time	High revolutions
E6	Door Switch	Door switch failure	Full stop + safety time	Whole cycle
E7	Door Coil	Door lock failure	Full stop + safety time	Whole cycle
E8	Door Start	Door lock failure in the beginning of cycle	Don't start	In the beginning of cycle
E9	Door End	Door lock opening failure at the end of cycle.	Don't start	End cycle
E11	No Fill	Fill failure	Full stop + request for Continue	While filling
E12	OverFill	Failure due to water overfill (water level above the pre-set value)	Full stop + tumble	After filling or during the filling procedure.
E13	No Heating	Heating failure	Full stop + tumble	While heating
E14	Heat. Time	Heating time failure	Full stop + request for continue	While heating
E15	Too Hot	Too Hot	Full stop + tumble	While heating
E21	OverFlow	Water level too high	Full stop + tumble	After filling or during the filling procedure
E24	Level Sens.	Defective level sensor	Continue + Don't start	Before start up
E25	Temp Sensor	Defective temperature sensor	Continue + Don't start	Before start up
E26	Mitsub. Code	Undefined frequency inverter error code	Full stop + tumble	Whole cycle
E27	Invert.Com.	Communication fault inverter	Full stop + safety time	Whole cycle
E28	THT time	THT Time out	Full stop + safety time	At spin sequence
E29	OV3/OP time	OV3 Time out / E.OP	Full stop + safety time	At spin sequence
E31	Load Par	Initialization fault frequency inverter	Don't start	When setting up parameters

N°	Failure message	Failure	Action	Fault occurrence
E32	Verify Par	Verification fault frequency inverter parameters	Don't start	At loading parameters
E35	Wrong Softw	Wrong software version	Don't start	New software version
E36	Imbalance	Unbalance detection system activated.	Reduction of spinning sequence revolutions. For Info only.	Spinning sequence
E37	No Drain Spr	Drain failure at the Spray Sequence	Full stop + tumble	Spray Sequence
E38	No Recycle	The Tank with recycle water is empty	Warning at the End. Front soap dispenser Mach. only	Wash step
E39	Out of Soap	The Soap Supplies are running Out of Soap	For Info only	Wash step
E41	Service Due	Service Due Warning	For Info only Open door = reset	End cycle
E42	Connection	No Network Connection	For Info only	Data Transfer Networking
E43	Voltage Par	Wrong Voltage Range Selection	Make correct selection	Configuration menu
E44	Model Type	Incorrect selection of machine type	Make correct selection	Configuration menu
E80	SoapTimeOut	Incorrect signal for liquid detergent dispensing	Full stop + tumble.	Whole cycle
E81	No Reheat	Heating Failure	Full stop + tumble.	Wash Step (Traceability only)
E82	No Refill	Refill failure	Full stop + request for Continue	Wash Step (Traceability only)
E83	Power Interruption	No successful wash cycle termination	Info that the wash cycle has to be repeated.	Abnormal Cycle Termination (Traceability only)
E85	RTC Reset Bat	Real Time Clock, No Battery or battery low power	For Info only.	End cycle (Traceability only)
E100	Weigh No Comm	Communication fault weighing system	Full Stop Tumble	(machines with weighing system only)
E101	Weigh Low	Weight machine is too low	Don't Start	(machines with weighing system only)
E102	Weigh High	Weight machine is too high	Don't Start	(machines with weighing system only)
E103	Weigh Balance	Weight is not balanced over 4 load cell's.	Don't Start	(machines with weighing system only)
E104	Weigh Overload	Weight on individual load cell exceeds max.	Full Stop Tumble	(machines with weighing system only)
E300-E353	Mits Err	Specific Mitsubishi Inverter Alarm	Full stop + safety time	Whole cycle
E500-E525	Memory Err	Memory Error	Full stop + safety time	Any time

N°	Failure message	Failure	Action	Fault occurrence
E550	TRACEYBILITY Write	Internal memory Error data for traceability	For Info only	Traceability function, whole cycle
E551	TRACEYBILITY Full	Internal Traceability memory is full	For Info only	Traceability function, whole cycle
E560-E563	USB Errors	Errors in communication with USB flash disk	For Info only	Only in Advanced menu Data Export/Import
E600-E628	Softw. Err	Software Error	Full stop + safety time	Any time

8.5. SERVICE MENU

In the Service menu you have some extra utilities:

- The Software Version Number.
- An overview of the 20 last failure messages.
- Statistics for 10 general error messages.
- An overview of the input states.
- Switching On the Inverter for a technical intervention.
- Reset Cycle Counter and Statistics Error Messages.

❑ HOW TO GET INTO THE SERVICE MENU

```
┌─────────────────────────────────────────────┐
│                 Main Menu                    │
│                                              │
│     Initialization …                         │
│     Program …                                │
│   ▶ Service …                                │
│     Configuration …                          │
│     Advanced …                               │
└─────────────────────────────────────────────┘
```
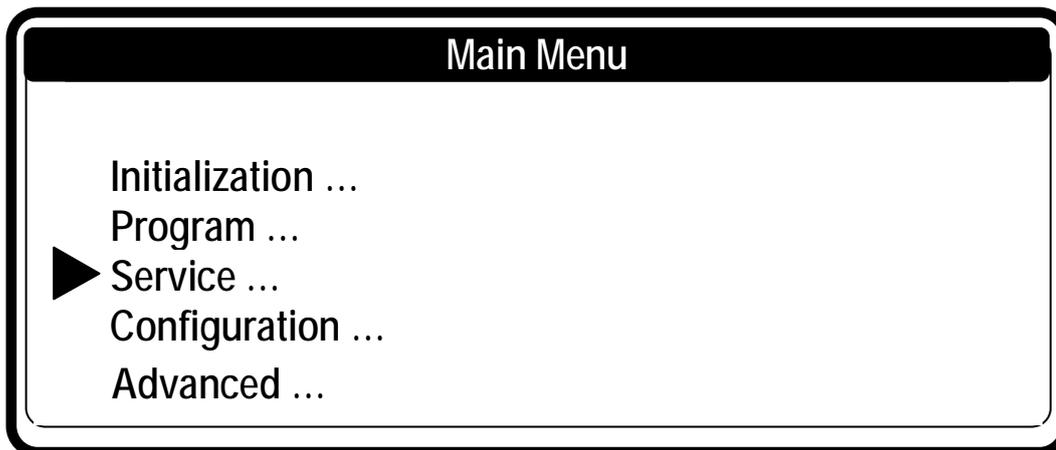
The SERVICE menu can only be accessed when the machine is in standby (the power is switched on, but no program is started).

- **SELECT CYCLE** is displayed.
- Turn the washing machine to the setup mode, (see 3.3).
- The Main menu is now available.
- Press the **ARROW DOWN** button to select the SERVICE menu.
- Press the **ENTER** button to make your selection.
- Now you will see the Service Menu Screen.

```
┌─────────────────────────────────────────────┐
│                Service menu                  │
│                                              │
│       Software version: 771.100.0            │
│                                              │
│     Diagnostic prog ...                      │
│   ▶ Faults …                                 │
│     Toolbox …                                │
│     Exit …                                   │
└─────────────────────────────────────────────┘
```

Menu Item	Info
Software XXX Version: 771.100.0	The software version number.

❑ FAULTS MENU (SERVICE FAULTS)

Menu Item	Info
View Fault Messages … 1 Fault 1: E XXX: YYYYYYYYYYYY … 20 Fault: E XXX: YYYYYYYYYYYY	- check the last 20 fault messages from the Err log Fault N° 1 : the last occurred error message … Fault N° 20 : the last - 20 occurred error message **E XXX** : The Error message number **YYYYYYYYYYYY** : The Error message name (If no messages are displayed, this means that no Errors have occurred.)
Erase Fault Messages No	- the Error log is reset by erasing the Fault Messages.
View Fault Statist … 1 No Drain 0x …	The Fault Statistics are an accumulation of Error messages that have appeared over a long period. With this information the technician has an indication on which parts an intervention should be needed. (the statistics are reset by the „Reset Service Counts" menu item in the toolbox menu) **The List with Statistics :** ◆ No Drain : E2 + E37 ◆ Door Switch : E6 + E7 + E8 + E9 ◆ No Fill : E11 + E40 ◆ No Heating : E13 + E14 ◆ Temp Sensor : E25 ◆ Level Sensor : E24 ◆ safety switch : E3 ◆ Invert Com : E27 ◆ Invert Alarm : E26 + E28 + E29 + E72 + E73 + E74 + E75 ◆ Invert OV Alarm : E303 + E304 + E305

❑ TOOLBOX MENU

The purpose of the Toolbox Menu is to give support at technical interventions.

Menu Item	Info

View Input States ?
    1 Input 1   On
    …
    20 Input 20   Off
	The Input states for Input 1, …, Input 20.
	The exact function of the inputs can be found on the electrical drawing of the washing machine programmer.
	- if the Input state is Off, the Input signal is low.
	- if the input state is On, the Input signal is high.

Imbalance Statistics …
 	
  Imbalance …
  1 …0,5   0
  …
  31 > 15   0
 	
  Current …
  1 I0   0
  …
  4 I3   0
	Diagnostic information on imbalance of the machine.

Inverter Power Off	By this function it's possible to switch on the power of the inverter if a technical intervention is needed. ⚠ **Attention!** SPECIAL CARE HAS BEEN TAKEN AT THE INITIALIZATION OF THE PARAMETERS OF THE FREQUENCY INVERTER. THE MANUFACTURER IS NOT RESPONSIBLE FOR THE WRONG BEHAVIOR OF THE WASHING MACHINE IF THE OWNER HAS INSTALLED NEW PARAMETER SETTINGS IN THE INVERTER THAT DO NOT CORRESPOND WITH THE ORIGINAL SETTINGS AT THE FACTORY.
Brake On	**FXB machines only** In case that a servicing intervention is needed (replacement of belt), this function can deactivate the motor break.
Reset Service Counts No	Once the washing machine has reached the total number of wash cycles like set at the „Service Interval" a warning is given at the end of each cycle until the Cycle Counter has been reset.
RTC Time XX:YY:ZZ	The Time value of the Real Time Clock. XX : Hours, YY : Minutes, ZZ : Seconds
RTC Date AA:BB:CC	The Date value of the Real Time Clock. AA : Day, BB : Month, CC : Year

Adjust Clock …
    Hour   XX
    Minutes   YY
    Day   AA
    Month   BB
    Year   CC
	Set the correct Date and Time for the RTC.

Exit	Return to Service Menu

8.6. DIAGNOSTIC PROGRAM

The purpose of the diagnostic program is to test the wash machine functions one by one.

❑ HOW TO GET INTO THE DIAGNOSTIC MENU

The Diagnostic menu can only be accessed when the machine is in standby (the power is switched on, but no program is started).

Select Cycle is displayed.

Turn the washing machine to the setup mode, (see 3.3).

The Main menu is now available.

Press the **ARROW DOWN** button to select the Service menu.

Select the Diagnostic Program menu at the Service menu.

```
┌─────────────────────────┐
│      Service menu       │
├─────────────────────────┤
│ ▶ Diagnostic Prog ...   │
│                         │
└─────────────────────────┘
```
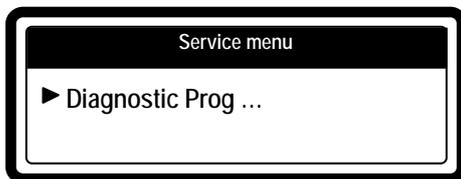
• Select diagnostic program.

```
┌─────────────────────────┐
│     Diagnostic Cycle    │
├─────────────────────────┤
│ ▶ Program          No   │
│   Exit                  │
└─────────────────────────┘
```
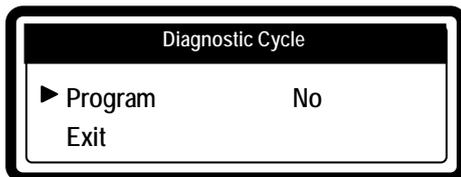
• Press **START** if you want to start the diagnostic program.

❑ TEST SEQUENCE

Diagnostic test sequence for machines with top soap dispenser.

- ◆ **Display test and door lock test**
- ◆ **Sensor test**
- ◆ **Motor test**
- ◆ **Test of outputs for external liquid detergent pumps**
- ◆ **Water fill, heating and drain test**
- ◆ **BASIC Diagnostic Wash program**

Test	Info	Explanation
1	Black display followed by a Text display.	➜ Door lock test (locks and unlocks 5 x the door) ➜ Display test
**	None	➜ Sensor test (all wash machine sensors are tested)
3	Motor Reverse	➜ Wash speed (inverse direction high spin)
4	Motor Stop	⇒ Standstill motor
5	Motor Forward	➜ Wash speed (same direction high spin)
6	Motor Distribute	➜ Distribution speed (same direction high spin)
7	Motor Low spin	➜ Low spin speed (same direction high spin)
8	Motor High spin	➜ High spin speed
9	Motor Stop	➜ Free run or controlled deceleration
15	Detergents 1..8	➜ The external liquid detergent pumps get activated one by one
20	Inlet I1	➜ The machine takes water by inlet 1
21	Drain 1	➜ The water is drained by drain valve 1
22	Inlet I2	➜ The machine takes water by inlet 2 until the safety level for heating is reached ➜ Heating activated (only if **Wait temp = on**)
23	Drain 1 (2)*	➜ The water is drained by drain valve 1
24	Inlet I3	➜ The machine takes water by inlet 3
25	Drain 1	➜ The water is drained by drain valve 1
26	Inlet I4	➜ The machine takes water by inlet 4
27	Drain 1	➜ The water is drained by drain valve 1
28	Inlet I5	➜ The machine takes water by inlet 5
29	Drain 1	➜ The water is drained by drain valve 1
30	Inlet I6	➜ The machine takes water by inlet 6
31	Drain 1	➜ The water is drained by drain valve 1
32	Inlet I7	➜ The machine takes water by inlet 7
33	Drain 1	➜ The water is drained by drain valve 1
34	Inlet I8	➜ The machine takes water by inlet 8
35	Drain 1	➜ The water is drained by drain valve 1
50	Tumble	⇒ The tumble sequence
	Unload	⇒ End of the Diagnostic Cycle

Note : * The second drain valve will be opened if a second drain valve has been selected in the
Configuration menu.

  ** No number 2 is displayed at the sensor test as this takes only a fraction of a second.

Remark!

If **++ ++** is displayed at the motor test sequence, then you can Advance (Press **START**) the test Sequence.

Diagnostic test sequence for machines with front soap dispenser.

- ◆ **Test (2) : For washing machines with 2 Main Water Supplies.**
- ◆ **Test (3) : For washing machines with 3 Main Water Supplies.**

Test (2)	Test (3)	Info	Explanation
1	**1**	Black display followed by a Text display.	➜ Door lock test (locks and unlocks 5 x the door) ➜ Display test (**)
**	**	None	➜ Sensor test (all wash machine sensors are tested)
3	**3**	Motor Reverse	➜ Wash speed (inverse direction high spin)
4	**4**	Motor Stop	⇒ Standstill motor
5	**5**	Motor Forward	➜ Wash speed (same direction high spin)
6	**6**	Motor Distribute	➜ Distribution speed (same direction high spin)
7	**7**	Motor Low Extract	➜ Low spin speed (same direction high spin)
8	**8**	Motor High Extract	➜ High spin speed (the drum is turning away from the soap box)
9	**9**	Motor Stop	➜ Free run or controlled deceleration
	20	Inlet I1	➜ The machine takes water by inlet 1
	21	Drain 1	➜ The water is drained by drain valve 1
20	**22**	Inlet I2 Heater	➜ The machine takes water by inlet 2 until the safety level for heating is reached ➜ Heating activated (only if **Wait temp = on**)
21	**23**	Drain 1 (2)*	➜ The water is drained by drain valve 1
22	**24**	Inlet I3	➜ The machine takes water by inlet 3
24	**26**	Supply A	➜ Supply A is activated for 30"
26	**28**	Supply B	➜ Supply B is activated for 30"
28	**30**	Supply C	➜ Supply C is activated for 30"
30	**32**	Supply D	➜ Supply D is activated for 30"
32	**34**	Supply E	➜ Supply E is activated for 30"
50	**50**	Tumble	⇒ The tumble sequence
		Unload	⇒ End of the Diagnostic Cycle

Note : * The second drain valve will be opened if the second drain valve has been selected in the Configuration menu.

    ** No number 2 is displayed at the sensor test as this takes only a fraction of a second.

Remark!
If **++ ++** is displayed at the motor test sequence, then you can Advance (Press **START**) the test Sequence.

❑ **BASIC Diagnostic Wash program**

	Sequence		Supply		Inlet		Temp.	Level	Wash action	Time	R.P.M.
	Top	Front	Top	Front	Top	Front					
Step 1	Wash	Wash	B	2=30"	3-4-5	2-3-6-8	40°C	NL	A=12" R=3"	6 min	W
	Drain	Drain	-	-	-	-	-	-	-	30 s	D
Step 2	Rinse 1	Rinse 1	-	-	2-5-6	1-2-7	-	NH	A=12" R=3"	1,5 min	W
	Spin	Spin	-	-	-	-	-	-	-	1 min	L
Step 3	Final Rinse	Rinse 2	C	3=30"	1(+6)	4-7	-	NL	A=12" R=3"	2 min	W
	Spin	Spin	-	-	-	-	-	-	-	4,5 min	H
	Slowdown			-	-	-	-	-	-	1 min	-
	Tumble			-	-	-	-	-	A=12" R=3"	30 s	W

Error messages :

- If the computer detects some problem during the Diagnostic Help Program, a diagnostic error message is generated.
- Check also the Error Log List in the Service-menu.
- Check the error handling and explanation of the error messages.

8.7. PROBLEM CHECK LIST

Problem	Cause	Solving the problem
When the power is switched on : the display is not illuminated	• no external power	• Switch on the external power supply
		• verify the external power to the machine
	• the emergency button is activated	• deactivate the emergency button
	• the power connector is not connected on the board	• connect the power connector
	• the power connector is inverse connected	• check the wiring and connect the connector as it must be
	• the fuse on the wash computer has burned	• if the transformer is broken replace the wash computer
	• disconnect the input connector A & B	Check the wiring and the voltage at the power Connector
	• The connector between the CPU and the I/O board of the wash computer is either absent or incorrectly pushed in.	If the transformer is still OK change the Fuse
		• if the display is lighting up: verify if the input signals or the +16Vdc Supply Signal are touching the cabinet
The display is illuminated, but it's difficult to read the text on the display.	• the brightness is not Ok	• Change the value for Brightness, Viewing Angle in the Configuration Menu until you get a bright display.
The display just shows "Bootloader" but the application does not run.	• There is no SW loaded in the application	• Load the application software from the USB flash drive
The machine is not responding on pressing the keyboard buttons	• no button is functional	• check if the connector „K" of the keyboard is well connected
	• there is no beep signal when the buttons are pressed	• check if the connector „K" of the keyboard is well connected
The machine is not behaving as expected	• if the wrong machine type is selected the wrong outputs will be activated	• check if the right machine type is selected in the Configuration Menu.
A program is started, but the outputs are not activated	• check if connector „R" is connected	• connect the connector at the correct position
Wait is displayed and a counter is counting down	• this is a wait state caused by a power interruption or a safety sequence at the end of the process	• wait until the counter has reached 0
		• do not switch off/on the power again as you will restart the counter
Unload is displayed and the Door is Open	• Check if the „Door Switch" is still closed	• If the „Door Switch" is broken, replace the Door Switch"
Wrong water level	• check if the programmed water levels are the correct ones	• set the right water levels
	• check if the right machine type is selected in the Configuration Menu	• select the right machine type in the Configuration Menu
	• you have changed the machine type, but the standard water levels do not change	• the standard water levels can only be reinitialized by programming new values or by loading the Standard Wash programs again.
The drum is not turning (No error message will be generated)	• Check if the belt is broken	• Check the tension of the belt or replace the belt
	• Check the applied motor voltage	• repair the motor power supply circuit
	• Check if the motor is still functional	• change the motor if needed
	• Check the Inverter	• send a request for more info to the manufacturer

8.8. EXTERNAL COMMUNICATION PROBLEMS

The machine communicates with the PC (TraceTech SW) via the RS485 line. If the external communication is not working, check the connection between the PC and machine. Check also if you have selected the right machine communication address.

8.9. EXPLANATION ERROR MESSAGES

FAILURE 2: DRAIN FAILURE

Failure 2 occurs when the electronic timer detects that the water is not drained after 3 minutes in a Drain or Spin Sequence. The failure message is displayed at the end of the cycle.

DIAGNOSE:

1. Check the drain tube of the washing machine	If the drain tube is blocked: repair the drain tube
2. Check the drain valve	If the drain valve is defective: replace the drain valve
3.Check the wiring: When the drain valve is switched Off, the drain valve should be open. (normal open)	If the wiring is damaged: repair the wiring

FAILURE 3 : SAFETY SWITCH ACTIVATED

This error occurs when the safety switch gets activated at revolutions lower than the distribution level. I.e. in the wash, rinse, soak sequence etc. but not during the extract sequence. The error is generated when the safety switch is switched more then 10 times (for a short period of time) or for a period over 20 seconds.

DIAGNOSE:

1. Check if the safety switch is broken. (Make sure shipping braces are removed)	If the safety switch is broken: replace the safety switch.
2. Check the position of the safety switch.	If the safety switch is not correctly mounted: install the safety switch properly.
3. Check the wiring, the contact of the safety switch is normally closed. Check connector pins for loose connections.	If there is no continuity: repair the wiring.
4. Check whether the washer is not overloaded by the filled-in linen.	Do not exceed the specified machine capacity.
5. Check the springs.	If damaged, replace them.

FAILURE 4 : THE LINEN IS NOT CORRECTLY DISTRIBUTED IN THE STAGE WHEN THE MACHINE STARTS UP THE SPINNING SEQUENCE

This error occurs when the linen is incorrectly distributed in the machine when it switches from distribution revolutions into high revolutions or during the spinning sequence at low revolutions.

If the safety switch is activated, the machine first attempts five times to redistribute the linen in the drum and carry out the spinning sequence. If the safety switch gets activated 5 times, the spinning sequence will be skipped. This function will protect the machine against overload and assures the normal lifetime of the washing machine.

DIAGNOSE:

1. Check the position of the safety switch.	If the safety switch is not correctly mounted, install the out of balance switch properly.
2. If this failure occurs often.	Use a fully loaded drum. A completely filled drum produces less unbalance than a drum that is only filled for 1/3.
3. Check the wiring if there is no bad connection. The saftey switch is a NC contact.	If there is a bad connection: repair the wiring.
4. Check whether the washer is not overloaded by the filled-in linen.	Do not exceed the specified machine capacity.
5. Check the springs.	Check the springs.

FAILURE 5 : SAFETY SWITCH ACTIVATED AT HIGH REVOLUTIONS

Failure 5 occurs when the safety switch is activated during high spin. This failure indicates that there will probably is a mechanical defect.

DIAGNOSE:

1. Check the position of the safety switch.	If the safety switch is not correctly mounted, install the out of balance switch properly
2. Check the springs and the other mechanical parts that fix the drum.	If you see a broken mechanical part: replace the broken part
3. Check the wiring if there is a bad connection.	If there is a bad connection: repair the wiring
4. Check that the washing machine is installed correctly and stable.	Adjust the supports at the bottom of the washing machine.

FAILURE 6: DOOR LOCK CLOSING SWITCH FAILURE

When the washer is operating, the door switch system is continuously checked for safety reasons.
If during the wash cycle the wash computer detects that the door switch is not closed then the machine will immediately stop all its functions. The door will stay locked.

DIAGNOSE:

1. Check the good functioning of the door switch at the inputs menu.	If the input is not functional replace the wash computer.
2. Check the continuity of the wiring.	If the wiring is not continuous: repair the wiring
3. Check the well functioning of the door switch. The door switch is a normal open contact.	If the door switch is broken or malfunctions replace the door switch.

FAILURE 7: FAILURE OF DOOR LOCK CLOSING

When the washer is operating, the door switch system is continuously checked for safety reasons.
If during the wash cycle the electronic wash computer detects that the door lock switch is not closed, then the machine immediately stops all its functions. The door will stay locked.

DIAGNOSE:

1. Check the door lock wiring.	If the wiring is not continuous: repair the wiring
2. Check (in the programmer device) the correct function of door locking and unlocking outputs and also of the input into the switch for locking the door.	Replace the switch or the programmer device - based on the result of output/input inspection above.

FAILURE 8: DOOR LOCK CLOSING FAILURE IN THE BEGINNING OF CYCLE

The washing machine will not start a new process when the door is not locked after pressing the **START** button.
Failure message 8 will be generated each time the door lock sequence could not be finished once started.

DIAGNOSE:

1. Check door handle for damage traces and centering against door lock.	If handle is damaged, replace hanle. If not good centered, center door against door lock.
2. Check if the input connector DL (door lock) is connected.	If the input connector DL (door lock) is not connected : connect connector DL.
3. Check the correct function of the door lock closing switch.	If the door lock closing switch is broken or doesn't function correctly, replace it.
4. Check the door lock wiring.	If the wiring is not continuous: repair the wiring
5. Check (in the programmer device) the correct function of door locking and unlocking outputs and also of the input into the switch for locking the door.	Replace the switch or the programmer device - based on the result of output/input inspection above.

FAILURE 9: FAILURE OF DOOR LOCK OPENING AT THE END OF CYCLE

At the end of a cycle, the door switch coil is switched off an the door lock switch must open its contact.
In case that, at the end of a cycle, the door lock switch does not change its state for the period of 3 minutes, this error is entered into the machine statistics and into the error message log.

DIAGNOSE:

1. Check the functioning of the door lock closing switch.	If the door lock closing switch is broken or doesn't function correctly, replace it.
2. Check the door lock wiring.	If the wiring is not continuous: repair the wiring
3. Check (in the programmer device) the correct function of door locking and unlocking outputs and also of the input into the switch for locking the door.	Replace the switch or the programmer device - based on the result of output/input inspection above.

FAILURE 11: FILL FAILURE

Failure 11 occurs when the water level has not reached its target level in x minutes.
x = Max fill time, a value that can be programmed at the Initialization Menu.

⚠ **ATTENTION!** The rubber hose must be fixed with a flexible clamp on the electronic water level sensor.

DIAGNOSE:

1. Check if the programmed Max fill time in the Initialization menu is acceptable.	If the water flow is very slow, increase the value for the Max fill time. The default value is 10 minutes.
2. Check if the external water valves are open.	If the water valves are closed: open the water inlet valves.
3. Check if the water inlet valves are not blocked by dirt.	If the water inlet valves are blocked by dirt: clean the water inlet valves or replace the water inlet valves.
4. Check the coil of the water inlet valves.	If the coil of the water inlet valve is electric open: replace the coil or the complete water inlet valve.
5. Check the drain valve.	If the drain valve is defective: replace the drain valve.
6. Check if the rubber hose (for measuring the water level) is well mounted on the electronic level sensor and on the drain valve.	If the hose is not well mounted: install the rubber hose properly.
7. Check if the hose on the electronic sensor is air tight.	If the air hose is not air tight: replace the air tube.
8. Check if the hose doesn't contain water. (siphon)	If the air tube contains water: remove the water and fix the hose so that it doesn't work as a siphon.
9. Check the continuity of the wiring.	If the wiring is not continuous: repair the wiring.
10. Check the output relay that powers inlet valves and the drain valve.	If the relay receives a command signal but is not closed, replace the wash computer.

FAILURE 12: OVERFILL FAILURE

If the target water level is X units above the target level then failure message 12 will be displayed.
The fault message will not be generated when the machine is advancing from a sequence with a high water level to a sequence with a low water level.
X= „Max. level Overfill", a value that can be programmed at the Initialization menu.

DIAGNOSE:

1. Check if the water inlet valves are broken.	If the water inlet valves are broken: clean or replace the water inlet valve diaphragms.
2. Check if the water pressure is too high.	Lower the water pressure.
3. Check the output relay that powers the inlet valve.	If the relay stays closed and the relay is broken, replace the wash computer.

In Case of Steam Heating :

If the steam has not enough heating power (too low temperature), the machine will be filled with too much water at the heating part. This will result in an increased water, energy and supply consumption. It's strongly recommended that the heating installation works with enough heating power. A simple solution can also be to reduce the programmed target water level. As less steam will be required, the normal water level should be reached. In the initialization menu it is also possible to increase the maximum level of overfill to avoid the error message. (= not recommended).

FAILURE 13: HEATING FAILURE

If the heater elements are not functioning : message 13 will be displayed.
The message is generated when the temperature is not raising at least with 3°C in 10 minutes time.

DIAGNOSE:

1. Check if the heating contactor is activated.	If the heating contactor is not activated: repair the wiring or replace the contactor.
2. Check if the heating elements are heating.	If the heating elements are not heating: Repair the wiring or replace the defective heater elements.
3. Check if the temperature sensor is functioning.	If the temperature sensor is defective: replace the temperature sensor.
4. Check the output relay that powers the heating contactor.	If the relay is broken, replace the wash computer.

FAILURE 14: HEATING TIME FAILURE

When after x minutes the target temperature is not reached (for a machine set as wait for heat):
Message 14 will be displayed.

x = the programmed Max heating time in the Initialization Menu.

DIAGNOSE:

1. Check if the programmed Max Heating time in the Initialization menu is acceptable.	If the machine has a small heating capacity, increase the value of the Max heating time. The default is 60'. (for machines with big heating capacity)
2. Check if the heating resistors are heating.	If the heating resistors are not heating: Repair the wiring or replace the defective heater elements.
3. Check the water temperature.	If the hot water supply temperature is too low: increase the temperature of the hot water.
4. Check if the temperature sensor is functioning.	If the temperature sensor is defective: replace the temperature sensor.

FAILURE 15: TOO HOT

When the water temperature is 15°C above the target temperature : message 15 will be displayed.
For evaluation of the problem, you can follow the water temperature of the bath on the display of the washing machine by pressing the Service Button on the keypad.

DIAGNOSE:

1. Check if correct water inlet valves have been programmed. If only hot water inlet valves have been programmed, and if the hot water supply has a temperature value above the programmed wash sequence value then the temperature of the wash bath will be too high.	Choose the correct water inlet valves for the wash sequence when you create or adjust the parameters of the wash program. Don't program only hot water inlet valves but also cold ones!

2. Check if the correct water inlet valves are functional. If the cold water inlet valves are not functional or if the main cold water supply is not available and only hot water inlet valves are open, and if the hot water supply has a temperature value above the programmed wash sequence value then the temperature of the wash bath will be too high.	See diagnostics Failure 11 : Fill Failure
3. Check the water temperature.	If the temperature of the supplied hot water is too high: decrease the temperature of the hot water.
4. Check if the temperature sensor is functioning.	If the temperature sensor is defective: replace the temperature sensor.
5. Check if the heating contactor stays closed. (check voltage to contactor coil.)	If the heating contactor stays closed : Replace the heating contactor.
6. Check the output relay that powers the heating contactor.	If the relay stays closed and the relay is broken, replace the power board.
7. Check the output relay that powers the heating contactor.	If the relay is not broken, but receives a not allowed signal from the wash computer, replace the wash computer.

FAILURE 21: OVERFLOW FAILURE

When the water level is raising above the maximum limit: message 21 will be displayed.

DIAGNOSE:

1. Check if the overflow hole and tube isn't blocked.	If the overflow tube is blocked: repair the tube.
2. Check if the drain tube isn't blocked.	If the drain tube is blocked: repair the drain tube.
3. Check the water inlet valves.	If the water inlet valves are broken: replace the water inlet valves.
4. Check the output relay that powers the water inlet valve.	If the relay stays closed and the relay is broken, replace the wash computer.

FAILURE 24: DEFECTIVE LEVEL SENSOR

If the level sensor is broken then fault 24 will be displayed. The sensor is checked shortly after the start of cycle and then during whole wash cycle progression.

DIAGNOSE:

1. Check the level sensor visually.	If you see some damage: replace the wash computer.
2. If the fault is persistent.	Replace the wash computer. (be sure there is no drain problem)

FAILURE 25: DEFECTIVE TEMPERATURE SENSOR

When the temperature sensor is broken then fault 25 will be displayed. The sensor is checked shortly after the start of cycle and then during whole wash cycle progression. The error message can only be erased when the temperature drops under 55°C.

DIAGNOSE:

1. Check if the temperature sensor is connected on the PCB Board.	The Female connector must be connected with the Male connector T of the PCB board.
2. Check the temperature sensor.	If the temperature sensor is broken: replace the temperature sensor.
3. Measure the resistance of the sensor.	If the resistance is not OK: replace the temperature sensor.
4. Check if the earth wire is at the middle position of the connector.	If the earth wire is not at the middle position: put the earth wire in the middle position of connector T.

5. Check the PCB board visually.	If you see some damage : replace the wash computer.
6. If the fault is persistent.	Replace the wash computer. Be sure that the problem is related to the PCB board and not to a defective temperature sensor.

FAILURE 26: UNDEFINED MITSUBISHI FREQUENCY INVERTER ERROR CODE

Occurs if the inverter gives an error message which is not recognised by the wash computer.

FAILURE 27: COMMUNICATION FAULT INVERTER

This fault will only occur when there is no communication between the wash computer and the inverter.
The wash computer is sending requests to the inverter, and the inverter is sending answers to the wash computer. If the wash computer is not receiving the answers within 5 seconds then fault 27 will be displayed.

DIAGNOSE:

1. For a new inverter or wash computer : Check if the right machine type and Washing machine power supply have been selected.	When the Inverter parameters are loaded at the Configuration menu, make sure that you have selected the right machine type and washing machine power supply.
2. Check if the door is closed and locked.	If the door is not closed then the inverter can not be powered. Close the door. If the door lock is broken, repair the door lock system.
3. Check if the inverter is energized. If the inverter power LED is not illuminated, measure if there is supply voltage at the inverter input terminals.	Repair the power supply. If the supply voltage is OK and the power LED is not illuminated, replace the inverter.
4. Check if the fuses are still operational.	If the fuses are blown up : replace the fuses.
5. Check if the safety inverter contactor is activated.	If the safety contactor is broken: replace the contactor.
6. Check if the connectors on both sides of the communication cable are still connected.	Connect the connectors on the wash computer and the inverter.
7. Check the wiring for continuity.	Repair the wiring.
8. Check if the output relays that activates the safety inverter contactor is functional.	If the relay is broken, replace the wash computer.

FAILURE 28: THT (Mitsubishi) TIME OUT

Fault 28 occurs when the wash computer can not handle the THT (Mitsubishi) fault of the frequency inverter.
This fault is a specific fault of the frequency inverter caused by an over current.

DIAGNOSE:

1. Check if the correct machine type is selected at the Configuration Menu.	If the wrong machine type is selected, enter the right machine type.
2. Check if the dedicated inverter parameters have been loaded by the wash computer.	Load the correct Inverter parameters.
3. Check if the power supply is sufficient high and stable during extraction with load.	Repair the power supply.
4. Check if the drum rotates normally by hand.	Repair / clean what is necessary.
5. Check if the fault is persistent.	If the fault is persistent, contact the manufacturer.

FAILURE 29: OV3 (Mitsubishi) TIME OUT

Fault 29 occurs when the wash computer can not handle the OV3 (Mitsubishi).
This fault is a specific fault of the frequency inverter caused by an overvoltage.

DIAGNOSE:

1. Check if the correct machine type is selected at the Configuration menu.	If the wrong machine type is selected, enter the right machine type.

2. Check if the dedicated inverter parameters have been loaded by the wash computer.	Load the correct Inverter parameters.
3. Check if there was a high unbalance during extraction, which can be caused by putting only half loads in the machine.	Put always a full load in the machine drum. Do not put other material than textile linen (fabrics) in the machine.
4. Check if the fault is persistent.	If the fault is persistent, contact the manufacturer.

FAILURE 31: INITIALIZATION FAULT INVERTER

Fault 31 occurs when something goes wrong while the wash computer writes the dedicated inverter parameters into the inverter EEPROM memory. This fault message means that not all dedicated inverter parameters have been loaded. As a result the inverter will not work in a correct way.

IT IS NOT RECOMMENDED TO USE THE WASHING MACHINE AS THE INVERTER WILL FUNCTION WITH THE WRONG PARAMETERS SETTINGS.

DIAGNOSE:

1. Check if the door is closed and locked.	If the door is not closed, close the door. If the door is not locked, repair the door lock system.
2. Check if the inverter is energized.	If the inverter is not energized, check the power to the inverter (see fault 27).
3. Write the parameters once more into the inverter.	If the fault is persistent, contact the manufacturer.

FAILURE 32: VERIFICATION FAULT INVERTER

Fault 32 occurs if a wrong parameter is detected at the verification of the inverter parameters. After writing the inverter parameters in the inverter, the parameters are verified one by one to ensure that they have been correctly loaded. This fault message means that at least one of the dedicated inverter parameters is wrong. As a result the inverter will not work in a correct way.

DIAGNOSE:

1. Check if the correct machine type is selected in the Configuration Menu.	If the wrong machine type is selected, enter the right machine type.
2. Check if the door is closed and locked.	If the door is not closed, close the door. If the door is not locked, repair the door lock system.
3. Check if the inverter is energized.	If the inverter is not energized, check the power to the inverter (see fault 27).
4. Write the parameters once more into the inverter.	If the fault is persistent, contact the manufacturer.

FAILURE 35: WRONG SOFTWARE VERSION

When a totally new software that isn't backward compatible with previous software versions is loaded, then the software will detect that the old and new software's are not compatible.
You have to reconfigure the Wash Computer. See Chapter 4.

⚠ **ATTENTION!**
ALL THE CUSTOM SETTINGS WILL BE ERASED IN THE WASH COMPUTER BY LOADING THE FACTORY SETTINGS.

FAILURE 36: THE LINEN IS NOT CORRECTLY DISTRIBUTED IN THE STAGE BEFORE THE START UP OF THE SPINNING SEQUENCE

This error occurs when the linen is incorrectly distributed in the washer during the distribution stage (before the transition from distribution revolutions into high revolutions).

In case that the unbalance detection system is activated, the machine attempts to redistribute the linen better. If there still is unbalance in the machine, it lowers the revolutions of the spinning sequence based on the unbalance magnitude. This function prevents machine overload by uneven distribution of the filled-in linen and thus increases the service life of the machine.

DIAGNOSE:

1. Unbalance may be caused by inserting only half the linen load into the machine.	Always fill in the machine with a full load of linen. Do not insert any other materials than textile materials (fabrics).

FAILURE 37: DRAIN FAILURE AT THE SPRAY SEQUENCE

Failure 37 occurs when the electronic timer detects that the water is not drained after 3 minutes at the Spray Sequence.

DIAGNOSE:

1. Check the drain tube of the washing machine.	If the drain tube is blocked: repair the drain tube.
2. Check the drain valve.	If the drain valve is defective: replace the drain valve.
3. Check the wiring: When the drain valve is switched Off, the drain valve should be open. (normal open)	If the wiring is damaged: repair the wiring.

FAILURE 38: NO RECYCLE WATER

Failure 38 occurs when the electronic timer detects that the Water Recycle tank is empty.

An Error message is generated to alert the operator, that the washing machine has switched over to soft cold water as there is no water from the water recycle tank available.

Front soap dispenser machines only.

DIAGNOSE:

1. Check the water level from the water recycle tank.	Add water to the water Recycle tank

FAILURE 39: EMPTY SOAP SUPPLY BOX

Failure 39 occurs when the electronic timer detects that the Soap Reservoir is empty.
To avoid that No Liquid Soap is added at the wash process, the operator gets a warning when a Liquid Soap Supply Reservoir is almost empty.

DIAGNOSE:

1. Check if the Liquid Soap Supply is empty.	Add Soap to the Liquid Soap Supply System.

FAILURE 41: SERVICE DUE WARNING

Failure 41 occurs when the cycle counter of the Electronic timer has reached the Programmed Value for Service due. The fault message will be erased by opening the door. If the cycle counter has not been reset the message will appear again at the end of the next wash cycle.

DIAGNOSE:

1. Check the cycle counter in the Service info menu.	You can reset the cycle counter in the Service Menu.

FAILURE 42: NO NETWORK CONNECTION

Failure 42 occurs when there is No Network Connection available.

For more information about the networking see manual "TRACE-TECH".

DIAGNOSE:

1. Check the network cable.	If the network cable is broken, replace the network cable.
2. Check the USB-RS485 converter.	If the converter is out of order, replace it.

FAILURE 43: WRONG VOLTAGE RANGE SELECTION

Failure 43 occurs when the wrong Voltage Range has been selected in the Configuration menu.

Depending on the machine type and the inverter type, certain Voltage ranges are not allowed.

DIAGNOSE:

1. Check the Machine Identification plate at the back of the machine.	Select the same Voltage range in the Configuration menu as on the Identification plate of your washing machine. Menu Item C:Supply Voltage

PORUCHA 44: INCORECT SELECTION OF MACHINE TYPE

Failure 44 is displayed when the operator selects the freestanding machine option (i.e. machine with a safety switch) on a rigid-mount machine (i.e. machine without a safety switch).

POSTUP:

1. Check the machine name plate placed on the back of the machine.	Select the right machine type in the Configuration Menu.

FAILURE 80: TIME FOR DISPENSING LIQUID DETERGENTS IS OUT

Failure 80 occurs when the On Hold Signal of the Liquid Supply Central Dispensing System stays high for more then 1 hour. At Input 16 of the wash computer, the Liquid Supply Central Dispensing System sends a „High" signal that makes that the washing machine waits at the Wash Sequence to add Liquid Supply until the Liquid Supply Central Dispensing System has pumped its liquid supplies inside the washing machine.

When the On Hold signal is „LOW" the wash program is NOT put On Hold.

When the On Hold signal is „HIGH" the wash program is put On Hold.

In normal operation the On Hold Signal of the Liquid Supply Central Dispensing System must not stay high for more then 1 hour, as otherwise the machine will not finish the running wash cycle anymore.

DIAGNOSE:

1. Check if the Central Soap Dispensing System operates correctly.	Repair Liquid Supply Central Dispensing System in case of failure.
2. Check if the wiring of the input signal „On Hold" is not damaged.	If the wiring is damaged: repair the wiring.
3. Check the wash computer. (Inputs can be checked one by one in the Service menu)	If the input of the wash computer is not functional, replace the wash computer.

FAILURE 81: NO REHEAT

Traceability only. Failure 81 occurs when the heating is not restarted (at the wash sequence) when the water temperature of the bath is below its normal programmed value. When the temperature drops below the predefined temperature limit of a hygienic wash cycle, the wash cycle can not be validated for hygienic reasons as the wash process has not followed the standards of the wash program in execution. This means that the linen must be washed again after repairing the problem with the heating system.

DIAGNOSE:

Check Diagnostics Failure 13 : Heating Failure, and Failure 14 : Heating Time Failure

FAILURE 82: NO REFILL

Traceability only. Failure 82 occurs when the water filling is not restarted (at the wash sequence) when the water level of the bath is below its normal programmed value. When the water level drops below the predefined water level limit of a hygienic wash cycle, the wash cycle can not be validated for hygienic reasons as the wash process has not followed the standards of the wash program in execution. This means that the linen must be washed again after repairing the problem with the water fill system.

DIAGNOSE:
Check Diagnostics Failure 11 : Fill Failure

FAILURE 83: CYCLE FAIL

Traceability only. Failure 83 occurs when the wash cycle can not be validated for hygienic reasons as the wash process has not followed the standards of the wash program in execution. This means that the linen must be washed again after repairing the problem. The Error message is only for information purposes and at the end of the wash cycle the operator will get a warning the wash cycle must be repeated.

DIAGNOSE:

See Extra Error message that shows the cause of the failure.

FAILURE 85: RTC LOW BATTERY

Failure 85 occurs when there is no battery available at the real time clock, or if the power of the battery is too small to make the real time clock run correctly.

DIAGNOSE:

Replace the CPU board.

FAILURE 95: WATCH DOG

If the watch dog has been activated, message 95 is logged in the Error log register. If this occurs often, ask the help of a technician.

FAILURE 100: WEIGH NOCOMM

Machines with weighing system only. Failure 100 occurs when the communication between wash computer and signal conditioner weighing system (amplifier module) is interrupted.

At the status Screen, you can see if the communication with the weighing system is operational : Yes.

(Weigh NoComm : No communication with weighing system)

DIAGNOSE:

1. Check if the power supply of the signal conditioner weighing system is available.	Repair 24 Vdc power supply.
2. Check if the connectors on both sides of the communication cable are still connected.	Connect the connectors on the wash computer and Signal conditioner.
3. Check the connection at the RS232 - TTL converter.	Connect the connectors at the RS232-TTL converter.
4. Check the wiring for continuity.	Repair the wiring.

FAILURE 101: WEIGH LOW

Machines with weighing system only. Failure 101 occurs when the measured weight is much smaller then in normal operation. Check the load cell Weighing Calibration screen (Advanced Menu) to obtain more info about the functionality of each individual load cell.

Verify if the value „Expected Free Weight XXX" in the Weighing Menu has still the correct value.

This value must correspond with the real total weight of the washing machine. If the actual measured weight value gets out of range then the Diagnostic Error 101 will appear.

(Weigh Low: Weight of weighing system is too low)

DIAGNOSE:

1. Check the load cell wiring.	Repair the wiring.
2. Check the values for each individual load cell.	Adjust the mounting of the load cell.
3. Check if the signal conditioner (amplifier) module is still operational.	Replace the signal conditioner (amplifier) module.

FAILURE 102: WEIGH HIGH

Machines with weighing system only. Failure 102 occurs when the measured weight is much higher then in normal operation. Check the load cell Weighing Calibration screen (Advanced Menu) to obtain more info about the functionality of each individual load cell.

Verify if the value „Expected Free Weight XXX" in the Weighing Menu has still the correct value.

This value must correspond with the real total weight of the washing machine. If the actual measured weight value gets out of range then the Diagnostic Error 102 will appear.

(Weigh High: Weight of weighing system is too high)

DIAGNOSE:

1. Check the load cell wiring.	Repair the wiring.
2. Check the values for each individual load cell.	Adjust the mounting of the load cell.
3. Check if the signal conditioner (amplifier) module is still operational.	Replace the signal conditioner (amplifier) module.

FAILURE 103: WEIGH BALANCE

Machines with weighing system only. Failure 103 occurs when the measured weight is not equal divided over the 4 load cell's. Check the load cell Weighing Calibration screen (Advanced Menu) to obtain more info about the functionality of each individual load cell.

FS33, FS40, FS55: load on each load cell must be in range 20 - 30%.

FX180, FX240, FX280: load on each load cell must be in range 10 - 40%.

FXB180, FXB240 : load on each load cell must be in range 10 - 40%.

(Weigh Balance: Balance weighing system is out of order)

DIAGNOSE:

1. Check the load cell wiring.	Repair the wiring.
2. Check the weight values for each individual load Cell.	Adjust the mounting of the load cell so that there is again optimal balance.
3. Check if the signal conditioner (amplifier) module is still operational.	Replace the signal conditioner (amplifier) module.

FAILURE 104: WEIGH OVERLOAD

Machines with weighing system only. Failure 104 occurs when during wash cycle, load on one load cell is over 1000 kg. Check the load cell Weighing Calibration screen (Advanced Menu) to obtain more info about the functionality of each individual load cell.

This function is protecting the load cell against mechanical overload. The load cell's are over dimensioned and can handle big dynamic forces. Nevertheless the wash computer will protect the weighing system and stop the wash cycle in case big mechanical forces occur due to mechanical failure in the washing machine.

(Weigh Overload: Dynamic Overload Weighing System)

DIAGNOSE:

1. Check for mechanical problems.	Repair mechanical problems on the washing machine.
2. Check the load cell wiring.	Repair the wiring.
3. Check the weight values for each individual load cell.	Adjust the mounting of the load cell.
4. Check if the signal conditioner (amplifier) module is still operational.	Replace the signal conditioner (amplifier) module.

FAILURE 300-353: MITSUBISHI INVERTER ALARM MESSAGE

Always make sure you have the correct inverter parameter settings in the inverter, especially when you have replaced an inverter. If you are not sure go to the Configuration menu and select „Inverter Menu…", set the correct machine type and supply voltage and load the parameters from the wash computer to the inverter once more. If the correct parameters are not in the inverter all kind of inverter alarms may occur. See also inverter manual (available on request) for more info.

Err N°	Failure	Failure Name	Explanation
300	Err OC1	Overcurrent	See detailed explanation below
301	Err OC2	Overcurrent	See detailed explanation below
302	Err OC3	Overcurrent	See detailed explanation below
303	Err OV1	Overvoltage	See detailed explanation below
304	Err OV2	Overvoltage	See detailed explanation below
305	Err OV3	Overvoltage	See detailed explanation below
306	Err THT	Inverter overload	See detailed explanation below
307	Err THM	Motor overload	See detailed explanation below
308	Err FAN	Fan stopped	Repair the cooling fan (clean or replace if necessary)
309	Err OLT	Stall prevention	See detailed explanation below
310	Err BE	Brake transistor	Short circuit in brake transistor circuit. Power off immediately! Replace the inverter.
311	Err GF	Ground fault	Output overcurrent to ground. 1) Check the motorcable and motor for ground faults. 2) Disconnect the motorcable and try again. If you still have the error, replace the inverter.
312	Err OHT*	Ext thermal relay	External thermal relay (TRM module, see electrical scheme) for motor protection tripped. TRM module was only used on certain machines with MCB controller and A500 inverter.
313	Err OPT	Option	See detailed explanation below
314	Err PE	Corrupt memory	Memory was overwritten too many times. Replace inverter.

Err N°	Failure	Failure Name	Explanation
315	Err PUE	PU leave out	See detailed explanation below
316	Err Ret*	Retry no over	The max number of retries after fault reached.
			The actual inverter error code that causes the problem and which should be solved, is stored just before Err 316 in the error log.
317	Err CPU	CPU Fault	Communication error of built in CPU. Replace inverter
318	Err E.6	CPU Fault 6	Internal fault, If the fault is persistent, replace the inverter
319	Err E.7	CPU Fault 7	Internal fault, If the fault is persistent, replace the inverter
320	Err IPF	Instantaneous power failure	Power failure between 15 and 100ms. Check for bad contacts in the power circuit. Repair the power supply.
321	Err UVT	Under voltage	Supply voltage too low. Check jumper P/+-P1.
322	Err LF	Output phase failure	Phase open detected on inverter output. Check for bad contacts or defect (open) motor windings.
323	Err OP1*	Option slot 1	Problem with the option in slot 1 or option contact fault
324	Err OP2*	Option slot 2	Problem with the option in slot 2 or option contact fault
325	Err OP3*	Option slot 3	Problem with the option in slot 3 or option contact fault
326	Err CTE	PU short circuit	Short circuit on the RS485 communication connector. Check for short circuit in the communication cable.
327	Err P24	24VDC short circuit	Short circuit on the 24VDC power output (PC terminal). Check for short circuit on the inverter control terminals.
328	Err MB1*	Brake sequence error 1	Sequence errors during use of the brake function.
329	Err MB2*	Brake sequence error 2	
330	Err MB3*	Brake sequence error 3	
331	Err MB4*	Brake sequence error 4	
332	Err MB5*	Brake sequence error 5	
333	Err MB6*	Brake sequence error 6	
334	Err MB7*	Brake sequence error 7	
335	Err FIN	Heatsink overheat	See detailed explanation below
336	Err OSD*	Speed deviation excess	Too big speed deviation during vector control
337	Err ECT*	Encoder signal loss	Problem with the encoder signal
338	Err E.1*	Option alarm(connector1)	Occurs if there is a contact fault of the connector between the inverter and the communication option or if the communication option is fitted to connector 1 or 2 or if the switch of the plug-in option is not on the default setting.
339	Err E.2*	Option alarm(connector2)	
340	Err E.3*	Option alarm(connector3)	
341	Err ILF*	Input phase failure	1 phase of the 3-ph input was lost for more than 1 second. Repair the 3-phase power supply.

Err N°	Failure	Failure Name	Explanation
342	Err PTC	PTC thermistor operation	Overtemperature of motor PTC(switch AU/PTC must be on PTC) 1) Check if motor cooling fan (if present) functions normally 2) check for contact faults in the wiring (see electrical scheme)
343	Err PE2	Parameter storage error	Problem with parameter storage (EEPROM failure). If the fault is persistent, replace the inverter.
344	Err CDO*	Output Current detection	Current exceeded the output current detection level
345	Err IOH	Inrush overheat	Resistor inrush current limit circuit overheated. 1) do not switch on/off the inverter frequently 2) Wait some time (15min) and try again 3) if the fault is persistent, replace the inverter
346	Err SER*	Communication error	Communication problem on the RS485 terminals connector
347	Err AIE*	Analog input error	Overcurrent or overvoltage on input terminal 2/4
348	Err USB*	USB communication error	USB communication check time interval has elapsed
349	Err OS*	Overspeed	Speed exceeded the limit during encoder feedback control
350	Err OD*	Position error	Too big difference between the position command and the position feedback during position control
351	Err EP*	Encoder phase error	Rotation command different than the motor rotation direction
352	Err E.11*	Opposite rotation deceleration	Rotation direction of the speed command different than the estimated speed causing overload
353	Err E.13	Internal circuit error	Problem with an internal circuit, replace the inverter

* : This option or function is not used. If you have this error anyway do the following :
1) Reload the inverter parameters.
2) If the fault is persistent, replace the inverter.

DIAGNOSE FAILURE 300-301-302: OC-ERRORS   (OVERCURRENT)

1. Check if there is no short circuit on the output of the inverter. (loose wire of motor cable, motor windings, screws or other loose parts inside the motor terminal box,…)	Repair the short circuit.
2. Disconnect the motor cable from the inverter and try again.	If you still have the error with motor cable disconnected, replace the inverter.

DIAGNOSE FAILURE 303-304-305 : OV-ERRORS   (OVERVOLTAGE)

If the DC-voltage on the capacitors is too high, the inverter will generate OV error.

1. Check if there was a high unbalance during extraction, which can be caused by putting only half loads in the machine.	Put always a full load in the machine drum.
2. Check if the supply voltage is not too high.	Reduce the supply voltage.
3. Check if the fault is persistent	If the fault is persistent, contact the manufacturer

DIAGNOSE FAILURE 306: THT-ERROR   (INVERTER OVERLOAD)

If the output current of the inverter is abnormal high for some time, the inverter will go into THT-alarm state.

1. Check if the power supply is sufficient high and stable during extraction with load.	Repair the power supply.
2. Check if the drum rotates normally by hand. (no abnormal high friction)	Repair / clean what is necessary.
3. Check if the motor windings are OK.	Replace the motor.

DIAGNOSE FAILURE 307: THM-ERROR   (MOTOR OVERLOAD)

If the motor current is higher than allowed for a longer time, the inverter will activate the electronic overcurrent protection to prevent the motor from overheating and the inverter will go into THM-alarm state.

1. Check if the drum rotates normally by hand.	Repair / clean what is necessary.
2. Check if the motor windings are OK.	Replace the motor.
3. Check if the fault is persistent.	If the fault is persistent, contact the manufacturer.

DIAGNOSE FAILURE 309: OLT-ERROR   (STALL PREVENTION)

The output frequency has dropped to minimum because of current limitation.

1. Check if the power supply is sufficient high and stable during extraction with load.	Repair the power supply.
2. Check if the drum rotates normally by hand. (no abnormal high friction)	Repair / clean what is necessary.
3. Check if the motor windings are OK.	Replace the motor.

DIAGNOSE FAILURE 313/315: OPT/PUE-ERROR   (OPTION FAULT/PARAMETER UNIT LEAVE OUT)

If the inverter doesn't receive requests from the wash computer (= no serial communication), after some time (about 10-30 seconds), the inverter will go into OPT/PUE-alarm state.

1. Check at the end of the wash cycle, if the power supply contactor of the frequency inverter switches is switched off on all phases.	Replace the contactor if the problem is persistent.

The OPT/PUE-ERROR can happen occasionally by a very short general mains power supply interruption. (Due to the power interruption, the inverter was not able to reset itself correctly.)
=> In such case the contactor must not be replaced. The Inverter must be reset by a longer power interruption.

DIAGNOSE FAILURE 335: FIN-ERROR   (COOLING FIN INVERTER OVERHEAT)

If the heatsink temperature of the inverter crosses it's max allowed operation temperature, the inverter will go into FIN-alarm state.

1. Check if the cooling fan of the inverter (if present) rotates normally.	Replace the cooling fan on the inverter (on the heatsink of the inverter).
2. Check if the cooling fan in the washer that takes fresh air to the inverter's environment (if present) rotates normally.	Replace the cooling fan of the washer.
3. Check if the heatsink or the cooling fans are not clogged with dust/dirt so that fresh air can circulate freely.	Clean what is necessary.
4. Check if the ambient temperature of the washer is within the specified limits (see installation manual).	Take care that the ambient temperature is within the specified limits.

FAILURE 500-525: MEMORY ERRORS

If a memory error occurs then something is going wrong with the EEPROM.
Try to reload the washing Programs. Check for source of electrical „noise".

FAILURE 550: TRACEABILITY WRITE

The failure 550 is a failure of the wash computer internal memory. This failure message appears after a failed attempt to write the Traceability into the internal memory. Change the CPU control board.
(Traceability function can be switched off in the Advanced Menu.)

FAILURE 551: TRACEABILITY FULL

The failure message 551 is displayed if the Traceability data fill up the internal memory of the wash computer.
The Traceability data need to be "cleaned" utilizing a PC software.
As a consequence of the failure no data of the wash cycle can be saved.
(Traceability function can be switched off in the Advanced Menu.)

FAILURE 560: USB NOT FOUND

The error message is displayed when an attempt to read from or write on a USB flash disk fails.

FAILURE 561: FILE NOT FOUND

The error message is displayed when the respective file is not found during an attempt to read from a USB flash disk.

FAILURE 562: EXPORT FAILED

The error message is displayed when an attempt to write onto a USB flash disk fails.

FAILURE 563: IMPORT FAILED

The error message is displayed when an attempt to read from a USB flash disk fails.

FAILURE 600-628: SOFTWARE ERRORS

Software errors must never occur. If a software error message occurs inform the manufacturer.

9. SERVICE INFORMATION

⚠ **ATTENTION!**

PROFESSIONAL REPAIRS IN ELECTRO INSTALLATION CAN BE CARRIED OUT ONLY BY SERVICE ORGANIZATION WITH PERMISSION GIVEN BY PRODUCER / SUPPLIER.

IN CASE OF ANY MAINTENANCE OR REPAIR, DISCONNECT THE MACHINE FROM SOURCE OF ENERGY AND WAIT UNTIL THE MACHINE COOLS DOWN OR DRAINS WATER.

PLEASE FOLLOW ALL INSTRUCTIONS IN THE MANUALS AND THE LABELS AND AS WELL AS VALID BASIC SECURITY LAWS IN ORDER TO PREVENT BURNS AND SCALDS AND INJURIES CAUSED BY ELECTRICITY.

9.1. MAINTENANCE

Remove dirt from the keyboard by a damp cloth after disconnection from the power supply.

⚠ **ATTENTION!**

DO NOT USE AGGRESSIVE SOAPS, CAUSTIC CHEMICALS, GASOLINE OR OTHER PETROCHEMICAL SUBSTANCES WHICH CAN DAMAGE THE KEYBOARD.

9.2. INFORMATION FOR SERVICE

Finding out the SW version:

- Press the SERVIS button to display the service information.

- Use the DOWN button and move to the SOFTWARE page. Here you can find the SW version in the format 771.XXX.X

Please always state the SW version together with the machine's serial number and the purchase order code in any correspondence with the manufacturer or when making any enquiries with the manufacturer.
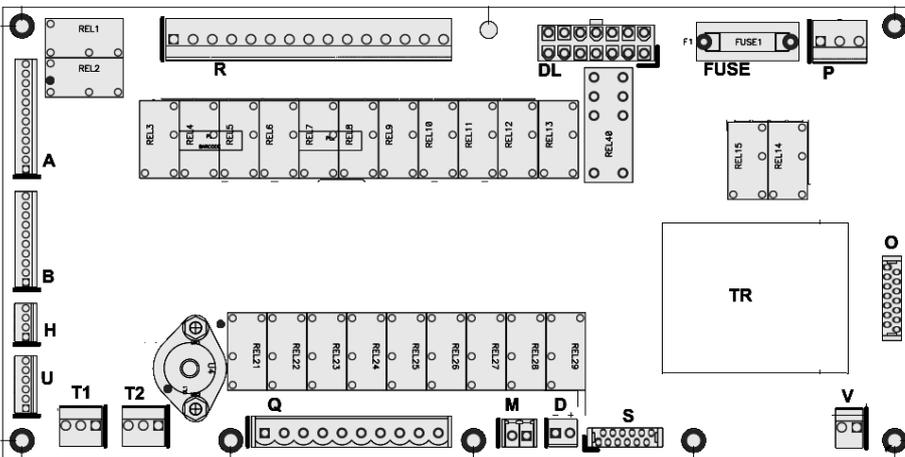
9.3. PROGRAMMER CIRCUIT BOARD

CPU board
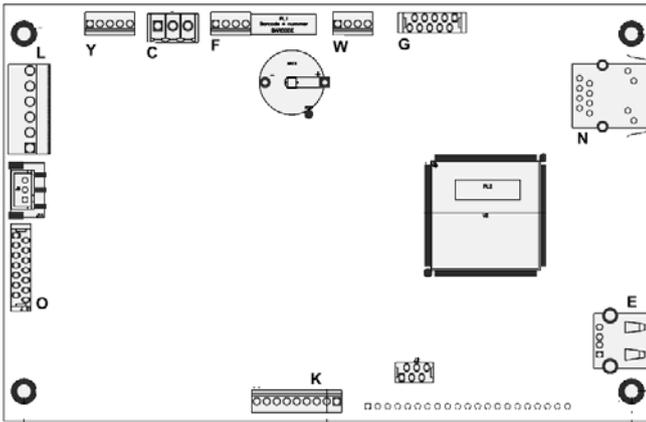
I/O board

Fig.9.3.

> ⚠ **WARNING!**
> **CONNECTION TO THE WRONG VOLTAGE SUPPLY MAY CAUSE SERIOUS BODILY INJURY AS WELL AS DAMAGE TO THE ELECTRONIC PARTS AND TO THE WASHING MACHINE ITSELF.**

- Voltage   : 200-240 Vac, 50/60 Hz
- Power   : max 20 VA
- Outputs   : 24 relays
- Serial interface: RS485 (2 wire) networking between wash computer and external device (PC Computer)
- Display   : LCD display

9.4. INSTRUCTIONS FOR REPLACING THE PROGRAMMER BOARDS

❑ Switch off the main power supply.

❑ Open the cover plate of the washing machine.

❑ Remove the connectors from the programmer boards (including the connector between the CPU and I/O boards) and remove the small hose from the water level sensor.

❑ The CPU board of the programmer can be removed after you have unscrewed the securing screws.

❑ The I/O board of the programmer remove including the bearing sheet metal after you have losened the two securing screws.

❑ Insert a new electronic programmer into the machine and secure it by the screws.

❑ Reconnect all the connectors and put the little hose back on the level sensor.

❑ Close the cover plate of the washing machine.

❑ Now you can Switch On the power supply.

❑ The display should illuminate.

⚠ **ATTENTION!**

MAKE SURE THAT THE SMALL HOSE OF THE LEVEL SENSOR IS CORRECTLY SECURED BY A FLEXIBLE CLAMP.
IF THE HOSE IS NOT AIR TIGHT THEN THE LEVEL SENSOR WILL NOT MAKE A CORRECT MEASUREMENT.

MAKE SURE THAT YOU DON'T DAMAGE THE FLEX CABLE OF THE KEYPAD WHEN YOU PUT THE WASH COMPUTER BACK INTO THE MACHINE.

9.5. INSTRUCTIONS FOR INSTALLING NEW SOFTWARE

❑ Switch the machine power supply off.

❑ Open the cover plate of the washing machine.

❑ Insert a flash drive containingn the software into the USB connector E (of the CPU board).
   The programmer board can recognize flash discs with FAT 32 file system only.

❑ Switch the machine power supply on.

❑ The display shows information that the software is being copied from the flash drive into the programmer board.

❑ When the copying is finished a prompt to remove the flash drive from the CPU is displayed.

❑ Switch the machine power supply off and remove the flash drive.

❑ Close the washing machine cover plate.

❑ Switch the machine power supply on.

❑ If the software is compatible with the previous software: the new software can be used without re-initialization.

❑ You have to clear all the error messages in the Service-menu, if you want to make a correct inspection of the functioning of the new installed software.

❑ If the software is not 100% compatible with the previous software version:

   ◆ A message which says "New SW version" will appear followed by a prompt to enter a password for initialisation of the Configuration Menu.

   ◆ In Configuration Menu, select Reset Factory Setting.

      ➜ **This is explained in Chapter 3 : Basic Description of Controls.**

   ◆ Go through the Menu items of the Configuration and Initialization Menu one by one to ensure that all the settings do correspond with the ones you prefer.

   ◆ All the Custom Settings will be lost.

10. SPECIFICATION OF YOUR MACHINE

❑ MACHINE DATA

◆ type	:.........................	◆ phases	:	....
◆ serial number	:.........................	◆ frequency	:	....
◆ voltage	:.........................	◆ output	:	....
◆ water supply	: ❑ cold soft	❑ cold hard	❑ hot soft	
◆ heating	: ❑ electrical…… kW	❑ hot water	❑ steam	

❑ ELECTRONIC DATA

Programmer type :

◆ serial number of the CPU	:	……………………………
◆ serial number I/O board	:	……………………………
◆ software version	:	……………………………
◆ software date	:	……………………………
◆ keyboard	:	……………………………

❑ MACHINE CONFIGURATION DATA

FUNCTION   **DATA ENTERED**

◆ MACHINE TYPE	:	……………………………………	
◆ BRIGHTNESS DISPLAY	:	……………………………………	
◆ SUPPLY VOLTAGE	:	……………………………………	
◆ TOTAL N° OF INLETS	:	❑ 2	❑ 3
◆ DRAIN VALVE 2	:	❑ Yes	❑ No
◆ WATER RECYCLE INLETS	:	❑ Yes	❑ No
◆ LIQUID SOAP SUPPLY	:	❑ Yes	❑ No
◆ MINIMUM LEVEL START SUPPLY	:	…………………………………… Units	
◆ TEMPERATURE	:	❑ Celsius	❑ Fahrenheit
◆ FULL HEATING	:	……………………………………… %	
◆ WET CLEANING	:	❑ Yes	❑ No

❑ MACHINE INITIALIZATION DATA

FUNCTION   **DATA ENTERED**

◆ LANGUAGE	:	………………………………….			
◆ SERVICE INTERVALL	:	………………………………….			
◆ BUZZER TIME	:	…………………………………… Seconds			
◆ ALLOW ADVANCE	:	❑ Yes	❑ No		
◆ AUTOMATIC COOLDOWN	:	❑ Yes	❑ No		
◆ WAIT FOR TEMP	:	❑ Yes	❑ No		
◆ MANUAL OVERRIDE	:	❑ Yes	❑ No		
◆ TEMPERATURE BALANCE	:	❑ Yes	❑ No		
◆ WASH MOTOR ON TIME	:	…………………………………… Seconds			
◆ WASH MOTOR OFF TIME	:	…………………………………… Seconds			
◆ SMART MOTION	:	❑ Yes	❑ No		
◆ HOT WATER HEATER TEMPERATURE	:	❑ 50	❑ 60	❑ 70	❑ 80 °C
◆ TEMP OVERSHOOT PROTECTION	:	- …………………………………… %			
◆ MAX. HEATING TIME	:	…………………………………… Minutes			
◆ MAX. WATERFILL TIME	:	…………………………………… Minutes			
◆ OVERFILL DETECTION	:	…………………………………… Units			
◆ EXTERNAL WAIT CONTROL	:	❑ No	❑ Soap	❑ Heating	
◆ PREWASH SOAP INFO	:	❑ Yes	❑ No		
◆ WASH LIQUID SOAP INFO	:	❑ Yes	❑ No		

IMPORTANT!

MACHINE TYPE:	
PROGRAMMER: **Xcontrol Plus**	
INSTALLATION DATE:	
INSTALLATION CARRIED OUT BY:	
SERIAL NUMBER:	

ELECTRICAL DETAILS:
..............VOLT................PHASE............HZ

NOTE:

ANY CONTACTS WITH YOUR DEALER REGARDING MACHINE SAFETY, OR SPARE PARTS, MUST INCLUDE THE ABOVE IDENTIFICATION.

MAKE CERTAIN TO KEEP THIS MANUAL IN A SECURE PLACE FOR FUTURE REFERENCE.

DEALER: