INDUSTRIAL WASHER EXTRACTORS

PROFESSIONAL WASHER EXTRACTORS:

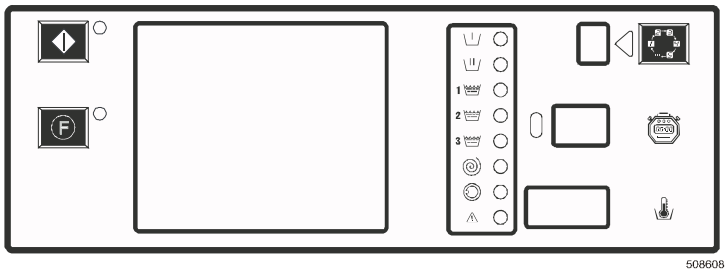
6 kg	**7,5 kg**

HIGH SPIN WASHER EXTRACTORS:

6 kg	**13 kg**
7 kg	**16 kg**
10 kg	**22 kg**

RIGID MOUNTED WASHER EXTRACTORS:

6 kg	**18 kg**
7 kg	**22 kg**
10 kg	**27 kg**
13 kg	**35 kg**



PROGRAMMING MANUAL EASY CONTROL

531491
Publication date: 6 Aug 2009

1. TABLE OF CONTENTS

2. WARNINGS AND SYMBOLS

2.1. WARNINGS

The manufacturer reserves the right at all times to change the specifications contained in this manual without prior notice.

All information given here should be considered as general information, since it is impossible to give all specific details of the machine.

This programming instruction manual is the original English version. For other than English versions, the two versions together therefore constitute the whole manual. In case you do not have this version, ask your dealer for a copy.

⚠ CAUTION - IMPORTANT NOTE!
READ THIS MANUAL CAREFULLY BEFORE USING THIS MACHINE. IMPROPER USE OF THE EASY CONTROL COMPUTER AND THE MACHINE MAY CAUSE SERIOUS BODILY INJURY AS WELL AS DAMAGE TO THE ELECTRONIC PART AND TO THE WASHING MACHINE ITSELF.

⚠ DANGER!
OPERATIONS THAT REQUIRE THE MACHINE TO BE OPENED MUST BE CARRIED OUT BY QUALIFIED PERSONNEL WHO TAKE ALL THE NECESSARY MEASURES TO ENSURE EVERYBODY'S SAFETY.
AT THE END OF THESE OPERATIONS, THE MACHINE MUST BE RESTORED TO ITS ORIGINAL STATE.

NOTE!
EVERY CIRCUIT BOARD HAS A SERIAL NUMBER AND THE CODE NUMBER OF THE BOARD, (SEE FIGURE).
ON THE EPROM MEMORY CHIP ON THE CIRCUIT BOARD IS STUCK A LABEL SPECIFYING THE SOFTWARE NUMBER AND VERSION AND/OR THE DATE OF THE SOFTWARE (SEE FIGURE) .

THESE DATA, AS WELL AS THE MODEL AND SERIAL NUMBER OF THE MACHINE, MUST BE MENTIONED IN ALL CORRESPONDENCE OR INQUIRIES ADDRESSED TO THE DEALER OR MANUFACTURER.

NOTE!
„THE EASY CONTROL" COMPUTER IS USED IN RIGID AND FREE STANDING MACHINES DRIVEN BY AN INVERTOR DRIVEN MOTOR. IN THE TEXT HOWEVER:

„RS" IS USED FOR RIGID MOUNTED INVERTOR DRIVEN MACHINES,

„FS" IS USED FOR FREE STANDING INVERTOR DRIVEN MACHINES,

„WDH" IS USED FOR FREESTANDING MACHINES WITHOUT DOOR HANDLE AND WITHOUT COIN SELECTOR SYSTEM, REGARDLESS THE MODEL NAME.

„WDHC" IS USED FOR FREESTANDING MACHINES WITHOUT DOOR HANDLE AND WITH COIN SELECTOR SYSTEM, REGARDLESS THE MODEL NAME.

2.2. USED SYMBOLS

❑ FRONT PANEL DISPLAYS

– LED 1 = Prewash
– LED 2 = Main wash
– LED 3 = Rinse1
– LED 4 = Rinse2
– LED 5 = Rinse3
– LED 6 = Final spin
– LED 7 = Door Release
– LED 8 = Fault

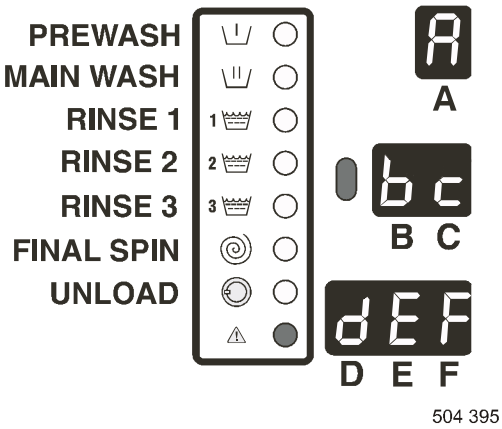


Fig. 2.2. Eight LED lights and 6 pcs of seven segment displays

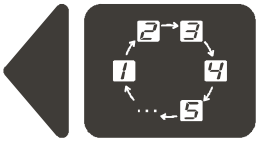
Some program's have two pre-washes and two main washes.
To indicate that the second pre-wash or main wash is active: the LED just below the selected step is flashing.

A is the upper display
B and C are the middle displays
D, E and F are the lower displays

❑ BUTTONS

START

– used for starting up the program
– used for advancing the wash program

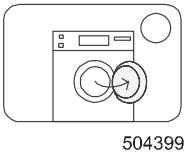


SELECT

– used for selecting the wash program
– used for selecting and modifying the software settings

SET

– used for modifying the software settings
– the button „SET" is enabled in setup mode



DOOR UNLOCK (ONLY MACHINES WITHOUT DOOR HANDLE)

– used for opening the door at the end of the cycle
– the „DOOR UNLOCK" button is only enabled when the LED of the „DOOR UNLOCK" Button is lightened.

F-BUTTON

– Used for selecting the F-button function

❑ LABELS

– contains wash programs and explanation wash machine operation

2.3. VERSIONS - EXECUTIONS

The easy control electronic programmer has different hardware and related software execution:
Current execution wash computer exists as 1 electronic board with all functions.
The PCB is blue colored.
There is only 1 version wash computer, so the reduced version is not available anymore.

Previous execution wash computer MCB EC exists as 1 electronic board with all functions.
The PCB is green colored.
– The full version named MCB EC
– The reduced version named MCB RD or MCB P6 used on machines without door handle.
– Version for electromechanical push buttons named MCB 6B

There are different software's for EASY CONTROL and MCB RD wash computers.

3. BASIC DESCRIPTION OF CONTROLS

❑ THE CONTROL OFFERS:

– 15 programs which offer a wide range of washing technologies (only 5 for MCB 6B)
– Easy operation with push buttons
– Standard wash program's contain economic and normal water level
– Wash program's can be customized (time, temperature, wash and spin speed, water levels)
– **OPL version**: Advancing the program by the „START" button
– **COIN version**: free programmable program prices and coin values
– Diagnostic messages

❑ DURING WASH CYCLE THE FOLLOWING DATA IS SHOWN ON THE DISPLAY:

– Shows which cycle is selected
– Time until the end of the cycle
– Indication of wait and heat
– Indicator lights show the current step of the wash cycle
– For coin machines, the price of the selected cycle and information about inserted coins
– The number of coins in the coin box can be displayed

❑ THE HARDWARE AND SOFTWARE OF THE „EASY CONTROL" WASH COMPUTER:

– The software is implemented in an EPROM that is fitted in an IC holder on the EASY CONTROL board
– *the key switch for selecting RUN mode or setup mode (WDH only)*
– Direct control of soap pumps
– Infrared Communication/networking

❑ OPERATION MENU OR RUN MODE:

– Selection of a wash program
– Starting a wash program
– Advancing a wash program
– *Unlock and open the door (only for machines without door handle)*
– Interaction on failure messages

❑ INITIALISATION MENU:

– Blocking and unblocking wash programs (not for MCB 6B)
– Setting the program processes
– Selecting the F-button function (not for MCB 6B)
– Setting the program prices
– Setting the soap signals
– Shows the software version

❑ CONFIGURATION MENU:

– Selection of specific options like temperature on display, cooldown function
– Selection of the machine type
– Selection of the coin values
– Overview of the 8 last occurred diagnostic messages
– Starting a diagnostic program
– Selection of the communication link

❑ *ONLY FOR MACHINES WITHOUT DOOR HANDLE:*

– *These machines have no internal coin function but can be connected to an external coin box (WDHC machines can be executed with a coin selector system)*

3.1. CONTROL SPECIFICATIONS

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

- Voltage :	200-240 Vac, 50/60 Hz
- Power :	max 16 VA
- Memory :	EPROM (contains the software) EEPROM (contains the customized programs)
- Outputs :	21 relays
- Serial interface : (if implemented)	Infrared or networking RS485 (2 wire) or infrared communication between timer and external device
- Display units:	8 LED's and 6 pcs of seven segment displays

❑ WINDOW FOR INFRARED COMMUNICATION

Not for machines without door handle. *The infrared communication signal passes through a black window of the control panel.*

❑ SOFTWARE VERSION AND DATE

MARKING FRAME : XXX-V.VV
V.VV stands for the software Version

Current wash computer EASY CONTROL (blue PCB) 1 piece execution:
Only 1 softw : **XXX = 753**

Previous wash computer EASY CONTROL (green PCB) 1 piece execution:
MCB EC & MCB 6B : **XXX = 524**
MCB RD : **XXX = 513** (WDH machine)
(MCB EC : **XXX = 502 (**WDHC machine only))

Old wash computer 2 piece execution :
MCB LC : **XXX = 261**
MCB P6 Machine without door handle : **XXX = 272**

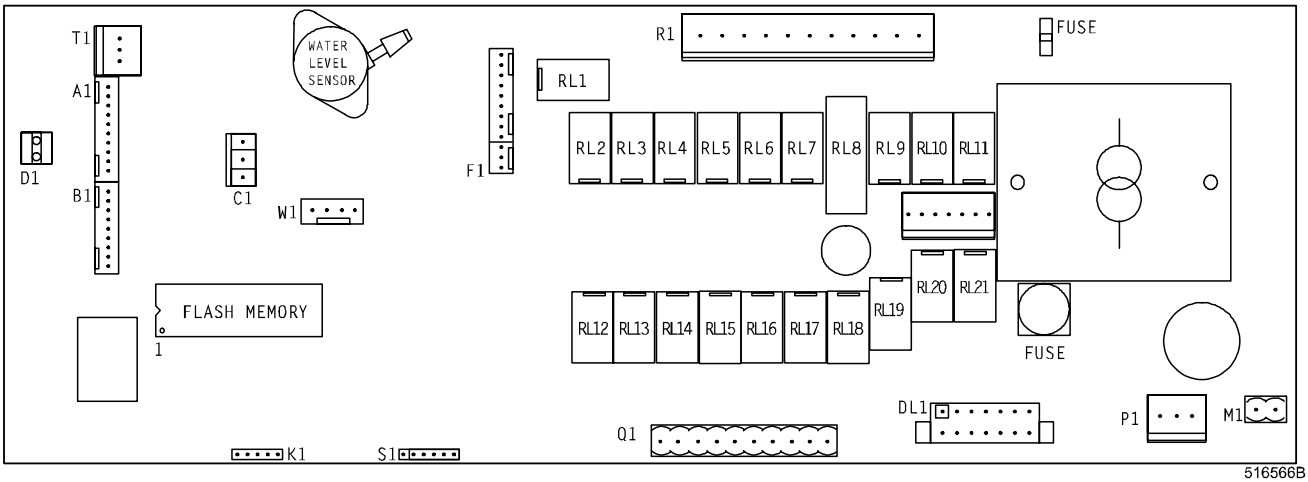


Fig. 3.1. Control board exist out of one electronic board named „EASY CONTROL"

3.2. HOW TO GET INTO THE SETUP MODE

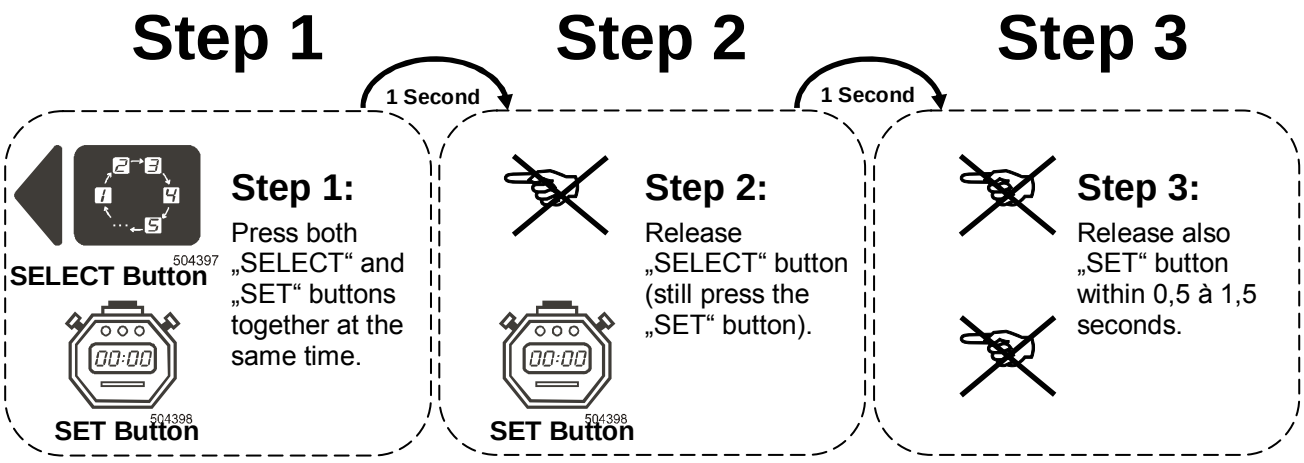
❑ *MACHINES WITH THE KEYSWITCH (WDH ONLY)*

With the key switch you can select between „Run mode“ and setup mode.

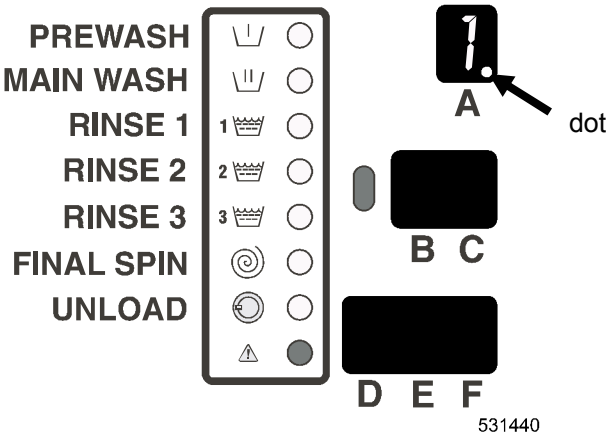
– **„RUN MODE“ -** wash action

– **„SETUP MODE“ -** changing the wash program and machine settings
– mounted on the rear panel

❑ MACHINES WITHOUT KEYSWITCH



The dot will appear at the upper display, which means you are in setup mode.



If the dot doesn't appear, try again.

REMARK:
MACHINES WITH INFRARED COMMUNICATION
THE „SET“ BUTTON CAN BE ENABLED OR DISABLED BY AN INFRARED SIGNAL FROM THE INFRARED KEY.

4. INITIALIZING THE MACHINE

4.1. INITIALISATION MENU

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

❑ HOW TO GET INTO THE INITIALISATION MENU

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

Switch the machine to the setup mode (see chapter 3.2.).

1. Press the „SET“ button, hold the „SET“ button and press the „SELECT“ button for 2seconds.
(Vandalism Free keypad : Press „SET“ and „SELECT“ button at the same time for 1 second.)
When the „**n**“ routine is displayed on display A, release both buttons.
Now you can select the appropriate initialization submenu:
2. Press the „SET“ button to switch between the different initialization submenus.
The characters „**n**“, „**P**“, „**F**“, „**c**“, „**d**“ and „**o**“ will appear one by one by pressing the „SET“ button
3. Press the „SELECT“ button to select the specific initialization submenu.
Now you see the first menu-item of the selected sub-menu.
The submenu's are explained in the next paragraphs.

Read first the parts: „How to change values and settings“ and „Use of the „SELECT“ and „SET“ buttons”.
When you want to leave the initialization menu: select the „**o**“ subroutine by pressing the „SELECT“ button.

❑ HOW TO CHANGE VALUES AND SETTINGS

A VALUE:

– a number than can be modified
– build up by 1, 2 or 3 display units
– example: a time value

A SETTING:

– an option that can be on or oFF
– example: the temperature on display on/oFF

ATTENTION:
YOU CAN ONLY MODIFY A VALUE OR SETTING WHEN THE CORRESPONDING VALUE OR SETTING IS FLASHING. AS A VALUE CAN BE BUILD UP OUT OF 3 DISPLAY UNITS YOU HAVE TO MODIFY UNIT BY UNIT.

❑ USE OF THE „SELECT“ AND „SET“ BUTTONS

There are only 4 different cases that we have to handle:

I. NO DISPLAY UNIT IS FLASHING + THE „SET“ BUTTON IS PRESSED:
the next menu-item is displayed

II. NO DISPLAY UNIT IS FLASHING + THE „SELECT“ BUTTON IS PRESSED:
a display unit will start flashing

III. A DISPLAY UNIT IS FLASHING + THE „SET“ BUTTON IS PRESSED:
data on the corresponding display unit will be modified

IV. A DISPLAY UNIT IS FLASHING + THE „SELECT“ BUTTON IS PRESSED:
the display unit will stop flashing and eventually another display unit will start flashing

If you follow each time these 4 logic steps then you can start modifying the values and settings.

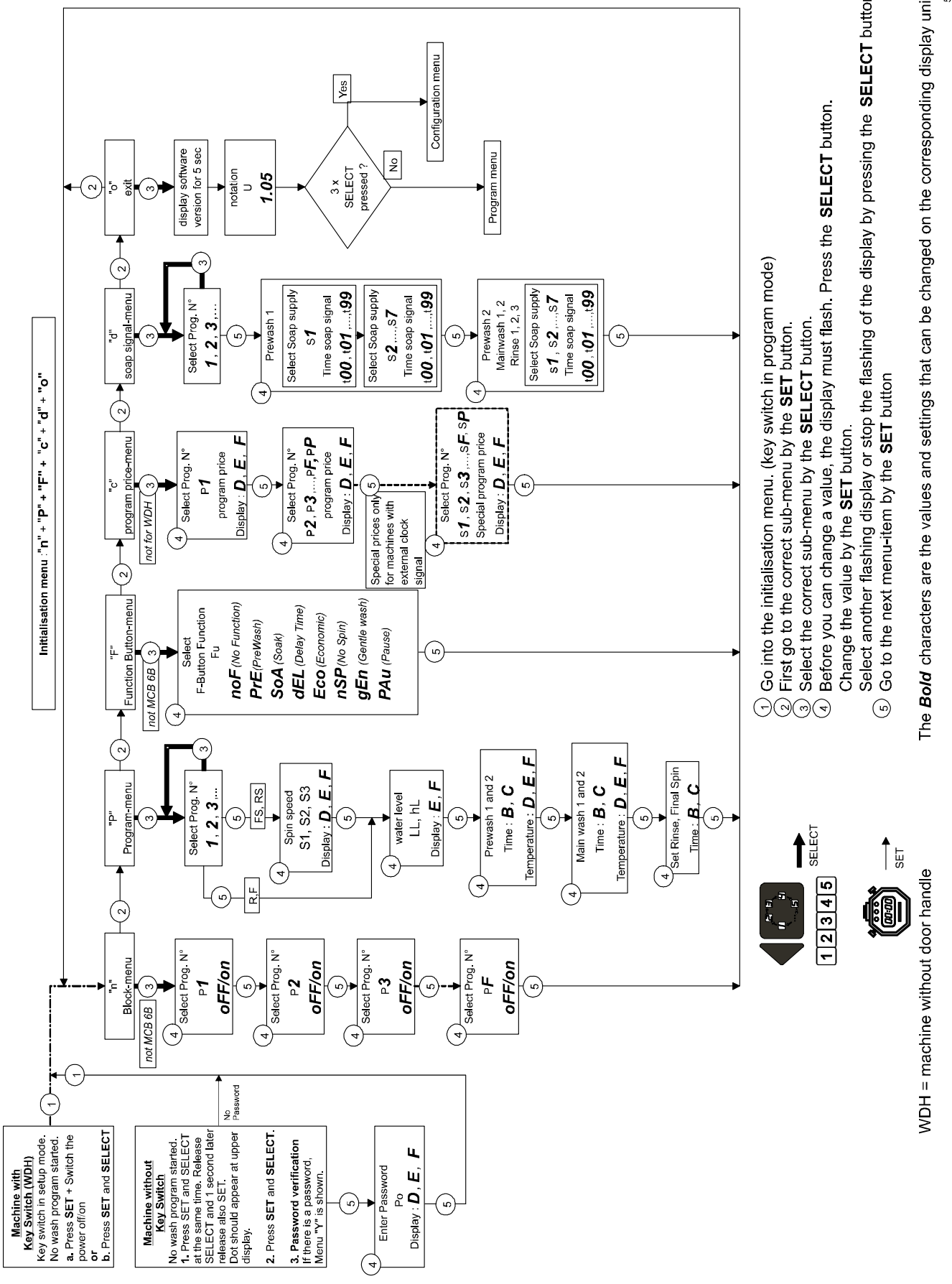


Fig.4.1.A Flow chart of initialization menu

❑ HOW TO MAKE A CORRECTION

After you have modified a menu-item, the display unit will stop flashing by pressing the „SELECT“ button. If you see that you have made a mistake, you can modify the menu-item once more by pressing the „SELECT“ button. The display will start flashing again.

❑ WRITING THE MODIFICATIONS INTO THE MEMORY

When the software is written into the eeprom: dashes are displayed. This occurs automatically when you leave the Submenu.

❑ RETURNING TO THE MAIN MENU

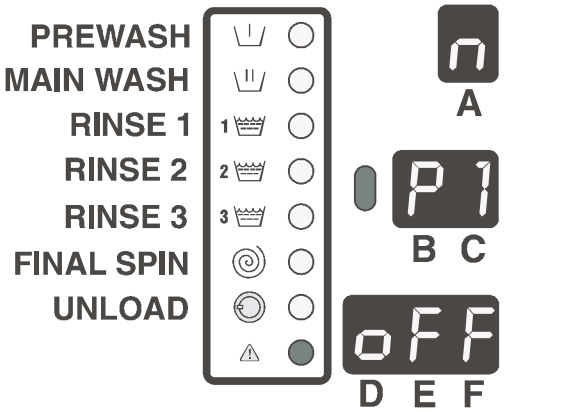
If you have finished the last step of the submenu, press the „SET“ button and you will get back in the main menu. Now you can select another initialization submenu or you can leave the initialization menu by the „o“ submenu.

❑ „N“ BLOCK SUBMENU (Not for MCB 6B)

Blocking and unblocking program numbers allows the user to display only the program numbers that he wants to offer. The program numbers that are blocked will not be displayed in the normal program mode. The customer can choose 15 program’s from 1 to F.

1. To toggle between on and oFF : you have to press the „SELECT“ button first. The on or oFF on the display starts flashing and the on or oFF can be changed by pressing the „SET“ button.
   If you have made your selection for program 1, then you can confirm your selection by pressing the „SELECT“ button.
2. You can go to the next program number by pressing the „SET“ button.
   Once you have reached program number F (PF), by pressing the „SET“ button, you will go back to the main menu.

on : the program is Not blocked
oFF : the program is blocked



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At coin operated laundry shops, some owners like to use some extra wash cycles which should not be available for paying users. For such owner it is possible to select also the blocked wash cycles when the key switch is in program mode. By the infrared key you can also switch to program mode without opening the washing machine.

❑ „P“ PROGRAM PROCESS SUBMENU

FIRST SELECT THE PROGRAM THAT YOU WANT TO MODIFY.

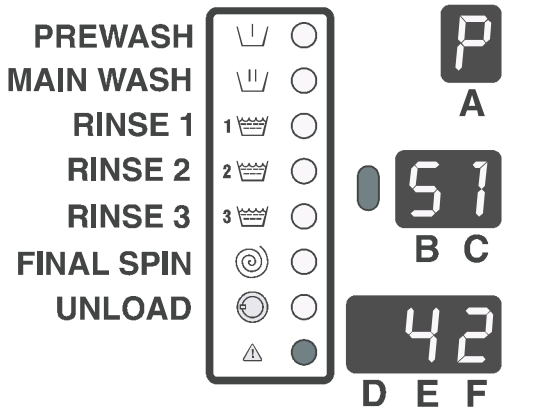
By pressing the „SELECT“ button you can select the program that must be modified.
Once you have made your selection press the „SET“ button.

Modifying the speed value (Only available on machines with variable speed)

There are 3 motor speeds that can be adjusted:
The displayed value correspond with the revolutions of the drum.
Example 42 = 42 RPM of the drum.

The speed value can be increased or decreased in steps of 1 RPM.

S1 : wash speed
S2 : low spin speed
S3 : high spin speed
42 : drum speed 42 RPM



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These values can only be modified in certain limits to prevent the bad functioning of the machine.
These limits depend of the machine size (see table 4.1.A).

WDH and WDHC only: if 999 has been programmed, the motor will accelerate to 1200 RPM for the last 30".

	Wash speed **S1**			Intermedium spin speed **S2**			Final spin speed **S3**		
Machine Type	**default RPM**	min RPM	max RPM	**default RPM**	min RPM	max RPM	**default RPM**	min RPM	max RPM
WDH 6	***050***	*010*	*060*	***350***	*95*	*700*	***980***	*95*	*999*
WDH 7	***050***	*010*	*060*	***350***	*95*	*700*	***980***	*95*	*999*
WDHC 6	***050***	*010*	*060*	***350***	*95*	*700*	***980***	*95*	*999*
WDHC 8	***050***	*010*	*060*	***350***	*95*	*700*	***980***	*95*	*999*
FS6	**050**	010	060	**350**	95	700	**980**	95	999
FS7	**050**	010	060	**350**	95	700	**980**	95	999
FS10	**050**	010	060	**350**	95	700	**980**	95	999
FS13	**045**	010	055	**350**	85	700	**980**	85	999
FS16	**045**	010	055	**350**	85	700	**950**	85	980
FS22	**042**	010	050	**350**	80	600	**800**	80	860
FS23	**042**	010	050	**350**	80	600	**860**	80	915
RS6	**050**	010	060	**350**	95	450	**570**	95	580
RS7	**050**	010	060	**350**	95	450	**570**	95	580
RS10	**050**	010	060	**350**	95	450	**570**	95	580
RS13	**045**	010	055	**350**	85	450	**515**	85	525
RS16	**044**	010	050	**350**	85	400	**440**	85	450
RS18	**044**	010	050	**350**	85	450	**495**	85	505
RS22	**044**	010	050	**350**	85	400	**470**	85	480
RS27	**042**	010	050	**350**	75	450	**480**	75	490
RS35	**038**	010	045	**350**	75	450	**500**	75	510

WDH = machine without door handle *WDHC = machine without door handle & with coin selector*

Tab.4.1.A Speed of machines with variable speed

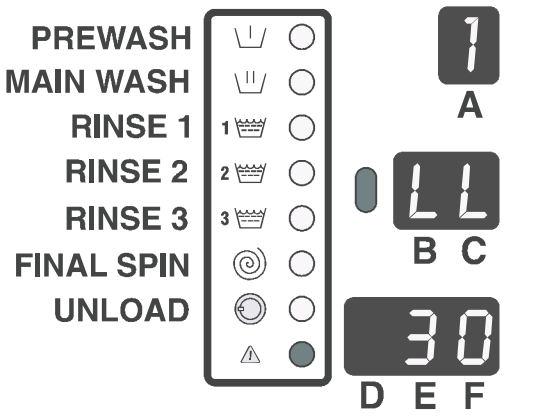
MODIFYING THE WATER LEVEL

When you verify the wash tables than you will see that depending the step, the drum will be filled with a low or a high water level.

If you adapt the water level „**LL**" then all the steps with normal low or economic low water level in the same program will be adapted. For the EU1 and EU2 program SET's LL=prewash and wash step.

If you adapt the „**hL**" water level then all the steps with the normal high or economic high water level will be adapted in the same program. For the EU1 and EU2 program SET's HL= rinse 1,2,3 step.

More information about the water levels for each wash step can be found at the wash tables of chapter 6.



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LL: Low Level
HL: High Level
30: the water level in units

The displayed water level is measured in units. The level can be increased or decreased in steps of 1 unit. You can not program a water level that is lower than the economic low level of the washing machine.

Machine type	Minimum programmable level	Economic Low Level	Economic High Level	Normal Low Level	Normal High Level	Maximum programmable level
WDH(C) 6,7	*10*	*10*	*12*	*17*	*19*	*35*
RS6	16	16	17	22	24	40
RS7	16	16	17	22	24	40
RS10	16	16	17	22	24	40
RS13	17	17	19	24	26	45
RS16	19	19	22	25	27	60
RS18	20	21	23	28	30	50
RS22	20	21	23	28	30	60
RS27	25	25	25	28	30	60
RS35	22	22	24	28	31	50
FS6	15	15	17	22	24	40
FS7	15	15	17	22	24	40
FS10	16	16	18	22	24	40
FS13	18	19	21	25	28	48
FS16	18	19	21	27	30	52
FS22	20	21	24	27	30	60
FS23	20	21	23	29	31	55

WDH = machine without door handle *WDHC = machine without door handle & with coin selector*

Tab.4.1.B Programmable water levels

Level values and water consumption for different machines are different.

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

Programmed water LEVEL (Water level height in units)	Machine type	RS6	RS7	RS10	RS13	RS18	RS22	RS27	RS35
	15								
	16	① 9 ℓ	① 10 ℓ	① 14 ℓ					
	17	② 10 ℓ	② 11 ℓ	② 15 ℓ	① 16 ℓ				
	18	11 ℓ	12 ℓ	16 ℓ	17 ℓ				
	19	12 ℓ	13 ℓ	17 ℓ	② 19 ℓ				
	20	13 ℓ	14 ℓ	18 ℓ	21 ℓ	19 ℓ	27 ℓ		
	21	14 ℓ	15 ℓ	19 ℓ	23 ℓ	① 22 ℓ	① 32 ℓ		
	22	**③ 15 ℓ**	**③ 16 ℓ**	**③ 22 ℓ**	25 ℓ	25 ℓ	37 ℓ		① 49 ℓ
	23	17 ℓ	18 ℓ	25 ℓ	28 ℓ	② 28 ℓ	② 42 ℓ		55 ℓ
	24	**④ 18 ℓ**	**④ 20 ℓ**	**④ 28 ℓ**	**③ 31 ℓ**	31 ℓ	47 ℓ		② 61 ℓ
	25	19 ℓ	22 ℓ	31 ℓ	34 ℓ	35 ℓ	52 ℓ	①② 50 ℓ	67 ℓ
	26	21 ℓ	24 ℓ	34 ℓ	**④ 37 ℓ**	38 ℓ	57 ℓ	55 ℓ	73 ℓ
	27	23 ℓ	26 ℓ	36 ℓ	40 ℓ	41 ℓ	62 ℓ	60 ℓ	78 ℓ
	28	25 ℓ	29 ℓ	38 ℓ	43 ℓ	**③ 44 ℓ**	**③ 67 ℓ**	**③ 65 ℓ**	**③ 83 ℓ**
	29	27 ℓ	32 ℓ	41 ℓ	46 ℓ	48 ℓ	72 ℓ	70 ℓ	89 ℓ
	30	28 ℓ	34 ℓ	43 ℓ	49 ℓ	**④ 52 ℓ**	**④ 77 ℓ**	**④ 76 ℓ**	95 ℓ
	31	30 ℓ	36 ℓ	45 ℓ	52 ℓ	56 ℓ	83 ℓ	81 ℓ	**④ 101 ℓ**
	32	32 ℓ	38 ℓ	48 ℓ	55 ℓ	60 ℓ	89 ℓ	86 ℓ	107 ℓ
	33	33 ℓ	40 ℓ	51 ℓ	58 ℓ	63 ℓ	95 ℓ	91 ℓ	113 ℓ
	34	35 ℓ	42 ℓ	54 ℓ	60 ℓ	67 ℓ	101 ℓ	96 ℓ	119 ℓ
	35	37 ℓ	45 ℓ	57 ℓ	63 ℓ	71 ℓ	107 ℓ	101 ℓ	125 ℓ
	36	39 ℓ	47 ℓ	59 ℓ	66 ℓ	75 ℓ	113 ℓ	106 ℓ	131 ℓ
	37	41 ℓ	49 ℓ	61 ℓ	69 ℓ	79 ℓ	119 ℓ	111 ℓ	137 ℓ
	38	43 ℓ	51 ℓ	64 ℓ	72 ℓ	83 ℓ	125 ℓ	116 ℓ	144 ℓ
	39	45 ℓ	53 ℓ	66 ℓ	76 ℓ	87 ℓ	131 ℓ	121 ℓ	150 ℓ
	40	47 ℓ	55 ℓ	68 ℓ	79 ℓ	91 ℓ	137 ℓ	127 ℓ	157 ℓ
	41				83 ℓ	96 ℓ	143 ℓ	132 ℓ	164 ℓ
	42				86 ℓ	100 ℓ	149 ℓ	137 ℓ	170 ℓ
	43				89 ℓ	104 ℓ	155 ℓ	142 ℓ	177 ℓ
	44				92 ℓ	108 ℓ	161 ℓ	148 ℓ	184 ℓ
	45				95 ℓ	113 ℓ	167 ℓ	153 ℓ	192 ℓ
	46					117 ℓ	173 ℓ	159 ℓ	198 ℓ
	47					121 ℓ	179 ℓ	164 ℓ	204 ℓ
	48					125 ℓ	185 ℓ	170 ℓ	210 ℓ
	49					129 ℓ	191 ℓ	175 ℓ	216 ℓ
	50					133 ℓ	197 ℓ	181 ℓ	223 ℓ
	51							187 ℓ	230 ℓ
	52							192 ℓ	
	53							198 ℓ	
	54							203 ℓ	
	55							208 ℓ	
	56							214 ℓ	
	57							220 ℓ	
	58							225 ℓ	
	59							231 ℓ	
	60							236 ℓ	

① Economic Low Level **② Economic High Level**

③ Normal Low Level **④ Normal High Level**

Tab.4.1.C Water level in units and a water consumption in liters

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

Machine type	WDH6	WDH7	FS6	FS7	FS10	FS13	FS16	FS22	FS23
` Programmed water LEVEL (Water level height in units)									
10	① 8 ℓ	① 9 ℓ							
11	9 ℓ	10 ℓ							
12	② 10 ℓ	② 11 ℓ							
13	10 ℓ	12 ℓ							
14	11 ℓ	13 ℓ							
15	11 ℓ	14 ℓ	① 9 ℓ	① 10 ℓ					
16	12 ℓ	15 ℓ	10 ℓ	10 ℓ	① 12 ℓ				
17	**③ 13 ℓ**	**③ 16 ℓ**	② 10 ℓ	② 11 ℓ	12 ℓ				
18	14 ℓ	18 ℓ	11 ℓ	12 ℓ	② 13 ℓ	14 ℓ	15 ℓ		
19	**④ 16 ℓ**	**④ 20 ℓ**	12 ℓ	13 ℓ	14 ℓ	① 16 ℓ	① 17 ℓ		
20	17 ℓ	22 ℓ	13 ℓ	14 ℓ	15 ℓ	18 ℓ	19 ℓ		24 ℓ
21	18 ℓ	24 ℓ	14 ℓ	15 ℓ	17 ℓ	② 20 ℓ	② 22 ℓ		① 27 ℓ
22	20 ℓ	26 ℓ	**③ 16 ℓ**	**③ 17 ℓ**	**③ 20 ℓ**	23 ℓ	25 ℓ		30 ℓ
23	22 ℓ	28 ℓ	17 ℓ	18 ℓ	23 ℓ	25 ℓ	28 ℓ		② 34 ℓ
24	24 ℓ	31 ℓ	**④ 18 ℓ**	**④ 20 ℓ**	**④ 25 ℓ**	27 ℓ	31 ℓ		37 ℓ
25	26 ℓ	33 ℓ	20 ℓ	22 ℓ	28 ℓ	**③ 30 ℓ**	34 ℓ		41 ℓ
26	28 ℓ	35 ℓ	22 ℓ	24 ℓ	31 ℓ	33 ℓ	37 ℓ		45 ℓ
27	30 ℓ	37 ℓ	24 ℓ	26 ℓ	33 ℓ	36 ℓ	**③ 40 ℓ**		49 ℓ
28	32 ℓ	39 ℓ	26 ℓ	28 ℓ	36 ℓ	**④ 38 ℓ**	43 ℓ	29 ℓ	53 ℓ
29	33 ℓ	42 ℓ	28 ℓ	31 ℓ	38 ℓ	41 ℓ	46 ℓ	33 ℓ	**③ 57 ℓ**
30	35 ℓ	45 ℓ	30 ℓ	33 ℓ	40 ℓ	44 ℓ	**④ 49 ℓ**	37 ℓ	61 ℓ
31	37 ℓ	47 ℓ	32 ℓ	35 ℓ	43 ℓ	47 ℓ	53 ℓ	① 41 ℓ	**④ 65 ℓ**
32	38 ℓ	50 ℓ	33 ℓ	37 ℓ	46 ℓ	50 ℓ	57 ℓ	45 ℓ	69 ℓ
33	40 ℓ	52 ℓ	35 ℓ	39 ℓ	48 ℓ	53 ℓ	60 ℓ	49 ℓ	73 ℓ
34	42 ℓ	55 ℓ	37 ℓ	41 ℓ	50 ℓ	56 ℓ	63 ℓ	53 ℓ	78 ℓ
35	43 ℓ	57 ℓ	38 ℓ	44 ℓ	53 ℓ	59 ℓ	67 ℓ	57 ℓ	83 ℓ
36			40 ℓ	46 ℓ	55 ℓ	62 ℓ	70 ℓ	② 61 ℓ	88 ℓ
37			42 ℓ	48 ℓ	58 ℓ	65 ℓ	74 ℓ	**③ 66 ℓ**	92 ℓ
38			43 ℓ	51 ℓ	61 ℓ	68 ℓ	78 ℓ	71 ℓ	96 ℓ
39			45 ℓ	53 ℓ	63 ℓ	72 ℓ	81 ℓ	75 ℓ	101 ℓ
40			47 ℓ	55 ℓ	65 ℓ	75 ℓ	84 ℓ	79 ℓ	106 ℓ
41						78 ℓ	88 ℓ	83 ℓ	111 ℓ
42						81 ℓ	91 ℓ	**④ 87 ℓ**	115 ℓ
43						85 ℓ	95 ℓ	91 ℓ	119 ℓ
44						88 ℓ	99 ℓ	95 ℓ	124 ℓ
45						91 ℓ	103 ℓ	100 ℓ	129 ℓ
46						94 ℓ	107 ℓ	105 ℓ	134 ℓ
47						97 ℓ	111 ℓ	110 ℓ	139 ℓ
48						100 ℓ	114 ℓ	114 ℓ	144 ℓ
49							118 ℓ	119 ℓ	149 ℓ
50							122 ℓ	124 ℓ	153 ℓ
51							124 ℓ	129 ℓ	157 ℓ
52							127 ℓ	134 ℓ	162 ℓ
53								140 ℓ	167 ℓ
54								145 ℓ	172 ℓ
55								150 ℓ	176 ℓ

① Economic Low Level **② Economic High Level**

③ Normal Low Level **④ Normal High Level**

Tab.4.1.C (continuation) Water level in units and a water consumption in liters

MODIFYING THE WASH TIMES AND WASH TEMPERATURES OF THE WASH STEPS

All the wash program's are build up a similar way.

LED LIGHT	WASH STEP	MIDDLE DISPLAY B & C	LOWEST DISPLAY D, E & F
* LED 1	Prewash 1	time	temperature
* LED 1 and 2 (flashing)	Prewash 2	time	temperature
* LED 2	Main wash 1	time	temperature
* LED 2 and 3 (flashing)	Main wash 2	time	temperature
* LED 3	Rinse 1	time	
* LED 4	Rinse 2	time	
* LED 5	Rinse 3	time	
* LED 6	Final spin	time	

The wash step of which the corresponding LED('s) = ON can be modified

You can modify the programmed time of all the steps (you can not change the drain and intermedium spin time).

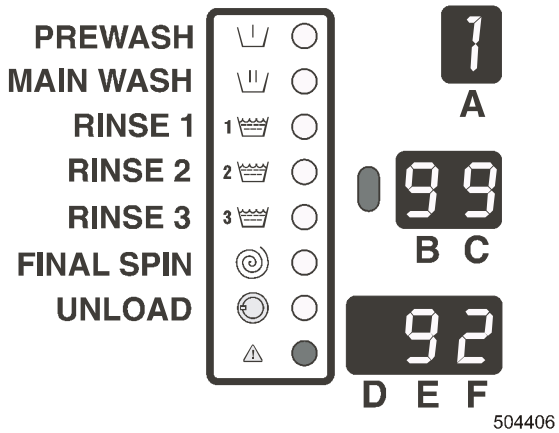
You can only modify the temperature of the Prewash and Main wash steps.

You can not control the temperature of the Rinse steps 1, 2 and 3.

When you program a time = 0, then this step will be skipped during the active wash cycle.

Display B & C: **00** to **99** : time of the wash step

Display D & E & F **01** to **92**: temperature



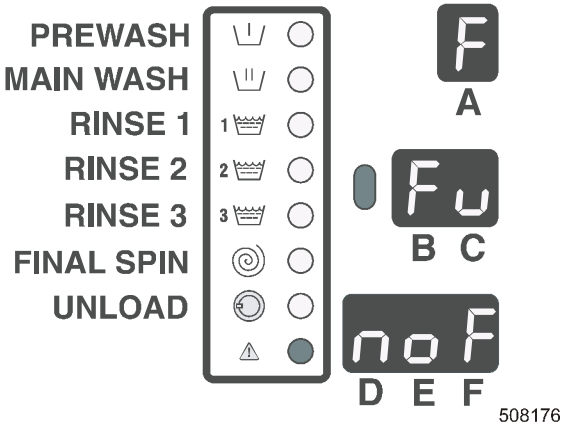
The time can only be increased or decreased in steps of 1 minute.
The time for the final spin step can be adapted by steps of 0,5 minute.

It is possible to program a temperature from 1°C up to 92°C and from 33°F up to 197°F
The temperatures can only be programmed within limits. These limits are defined by the selection of cold and warm inlet valves. The temperature limits can be found at the wash tables of chapter 6.

❑ „F" FUNCTION BUTTON SUBMENU (Not for MCB 6B)

The goal of this submenu is to add some extra functions by manual operation.

Choose the wished function from the list with functions: Press the **Select** button. When the lower display is flashing, by pressing the **SET** button, list element by list element is displayed. To confirm your selection, you have to press the **Select** button once more. The lower Display will stop flashing.



Selectable functions:

noF	:	**No Function**, all F-button functions disabled.
PrE	:	**PreWash** function
SoA	:	**Soak** function
dEL	:	**Delay Time** function
Eco	:	**Economic** function
nSP	:	**No Spin** function
gEn	:	**Gentle** wash action function
Pau	:	**Pause** function (Last Rinse)

Before you start a wash cycle, by pressing the F-button the selected function in the F-menu will be enabled.

The corresponding F-button LED will also be illuminated.

By pressing the F-button once more, the selected F-button function will be switched Off again.

You have to press the START button within 10 seconds otherwise the Function will be turned Off again.

(In case of a central payment system (EP = REL), the reset time of the F-button function is 2 minutes.)

❍ **PreWash function**

- Switches on/off the Standard Prewash sequence.
  ➔ enabled : the Prewash function will be executed.
  ➔ disabled : the Prewash function will not be executed.
- A time value must be programmed in the P-menu for 1 of both PreWash sequences.

❍ **Soak function**

- The Soak sequence is executed:

- when the time value of 1 of both Prewash sequence is > 0 minutes. (see P-menu)
  ➔ enabled : the Soak sequence will be executed.
  ➔ disabled : the Soak sequence will not be executed.
- before the Prewash sequence.
- with the temperature value of the First Prewash Sequence
- with a NH water level.

- The programmed soak time value : 1H, 2H, 3H, … , 9H, 10, 11, … 24 corresponds with hours.
- The max soak time is 24 hours. You can increase the time value also while the process is in execution.
- While the soak sequence is executed, the time on the middle display is decreasing in steps of 10 minutes.
- At the middle display you will see a dot between the first and the second number
  Example: 5.3 ➔ The remaining soak time is 5 Hours and 30 minutes.
- The Soak time has not been added to the wash program time, only when the Soak time is over, the remaining wash cycle time will be displayed.

❍ **Delay Time function**

- The Delay Time function allows you to give a retarded Start of the selected wash cycle.
  ➔ enabled : the delay time sequence will be executed.
  ➔ disabled : the delay time sequence will not be executed.
- The programmed delay time value : 1H, 2H, 3H, … , 9H, 10, 11, … 24 corresponds with hours.
- The max delay time is 24 hours.
- While the Delay Time function is executed, the time on the middle display is decreasing in steps of 10 minutes.
- At the middle display you will see a dot between the first and the second number.
  Example: 5.3 ➔ The remaining delay time is 5 Hours and 30 minutes.
- The Delay Time has not been added to the wash program time, only when the Delay Time is over, the remaining wash cycle time will be displayed.

❍ **Economic function**

- The Economic function allows you to execute a wash cycle with economic low and high water levels.
  ➔ enabled : the Economic function will be executed.
  ➔ disabled : the Economic function will not be executed.
- When this function is enabled, the water level will be lowered with a value that corresponds with 20% units less then the programmed value.
- ECONOMIC levels should only be used for lightly soiled and/or smaller volumes of garments.In other cases these programs will only give poor washing quality.

❍ **No Spin function**

- The Economic function allows you to execute a wash cycle without a spin sequence.
  ➔ enabled : only the Drain part of the Spin sequence will be executed.
  ➔ disabled : the Spin sequence will be executed completely.

❍ **Pause function**

- The Pause function allows you to stop the wash cycle just to add softener at the last Rinse.

➔ enabled : the Pause function will be executed.

➔ disabled : the Pause function will not be executed.

- When the Pause function is selected at the Start of the Wash Cycle, the machine will wait at the Last Rinse.
- Now the operator can add softener.
- The START button LED is flashing and by pressing the „START“ button, the Last Rinse will be started and the wash cycle will go on.

❍ **Gentle Wash Action function**

- The Gentle Wash Action function allows you to execute a wash cycle with a minimal motor action (3 „On-12“ Off)

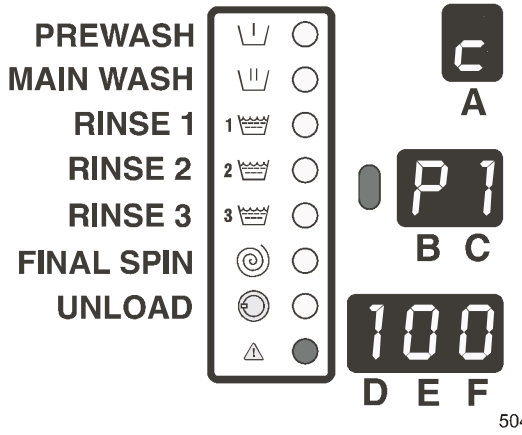
  ➔ enabled : gentle wash action

  ➔ disabled : programmed wash action

❑ „C“ PRICE SUBMENU *(NOT AVAILABLE FOR MACHINES WITHOUT DOOR HANDLE)*

ONLY FOR MACHINES WITH A COIN SELECTOR.

The goal is to program prices for each wash program. You can only change these values if you have selected „cn“ = „on“ in the „**t**“ submenu. This mean that the machine will function as a machine with a coin selector. After programming the prices for each program, you can program the special prices for each program. You can only change these values if you have selected „SP“ = „on“ in the „**t**“ submenu.
PP and **SP:** the extra price for the Prewash sequence when Prewash has been selected in the F-Function Button submenu.



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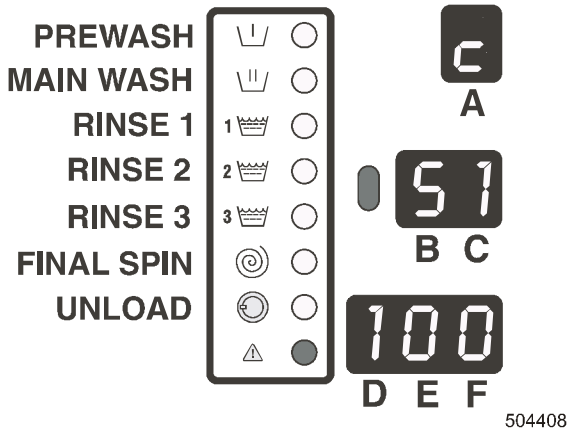

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P1 to **PF**: the program numbers
100: the price of the program

S1 to **SF** : the program numbers for special prices

ATTENTION!
SPECIAL PRICES ARE ONLY AVAILABLE ON MACHINES WITH A REAL TIME CLOCK OR EXTERNAL CLOCK

❑ „D“ SOAP MENU (*NOT FOR WDH*)

The goal of the „**d**“ submenu is to program soap signals.

When a time is programmed in the soap menu, then the corresponding external soap pump will be activated for the programmed time.

F-machines (2motor version): 4 soap pumps
FF-machines (with frequency inverter): 7 soap pumps
R-machines: 6 soap pumps

1. SELECT THE PROGRAM THAT YOU WANT TO MODIFY

By pressing the „SELECT“ button you can select the program that must be modified.
Once you have made your selection press the „SET“ button.

2. SELECT THE WASH STEP

Make your selection with the „SET“ button.

3. SELECT THE SOAP PUMP

Press the „SELECT“ button (flashing display).
Select the soap pump by the „SET“ button.

Up to 7 soap pumps can be programmed for each wash step (depending the type of machine).

First you have to program the 7 pumps for prewash 1, then the 7 pumps for Prewash 2, then the 7 pumps for main wash 1, etc.

4. SET THE PROGRAMMED TIME FOR THE CORRESPONDING PUMP

A time can be entered for each soap pump. Press the „SELECT“ button, the display units for the time value will start flashing. Press the „SET“ button for changing the time value.

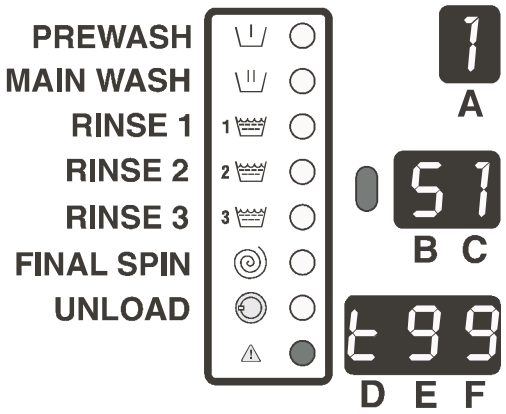
LED LIGHT	WASH STEP	MIDDLE DISPLAY B & C	LOWEST DISPLAY D, E & F
* LED 1	Prewash 1	Soap signal S1 to S7	Time t00 to t99
* LED 1 and 2 (flashing)	Prewash 2	Soap signal S1 to S7	Time t00 to t99
* LED 2	Main wash 1	Soap signal S1 to S7	Time t00 to t99
* LED 2 and 3 (flashing)	Main wash 2	Soap signal S1 to S7	Time t00 to t99
* LED 3	Rinse 1	Soap signal S1 to S7	Time t00 to t99
* LED 4	Rinse 2	Soap signal S1 to S7	Time t00 to t99
* LED 5	Rinse 3	Soap signal S1 to S7	Time t00 to t99

You can program the time value in steps of 1 second.

If a time value 0 was programmed then no soap signal will be activated.

For changing the values, see paragraph: „How to change values and settings“

S1 to **S7**: soap signals 1 to 7
t00 to **t99**: programmed time of the soap signal from 0 seconds up to 99 seconds



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ADVICE!
WRITE THE SETTINGS YOU WANT TO MAKE DOWN BEFORE YOU START PROGRAMMING.

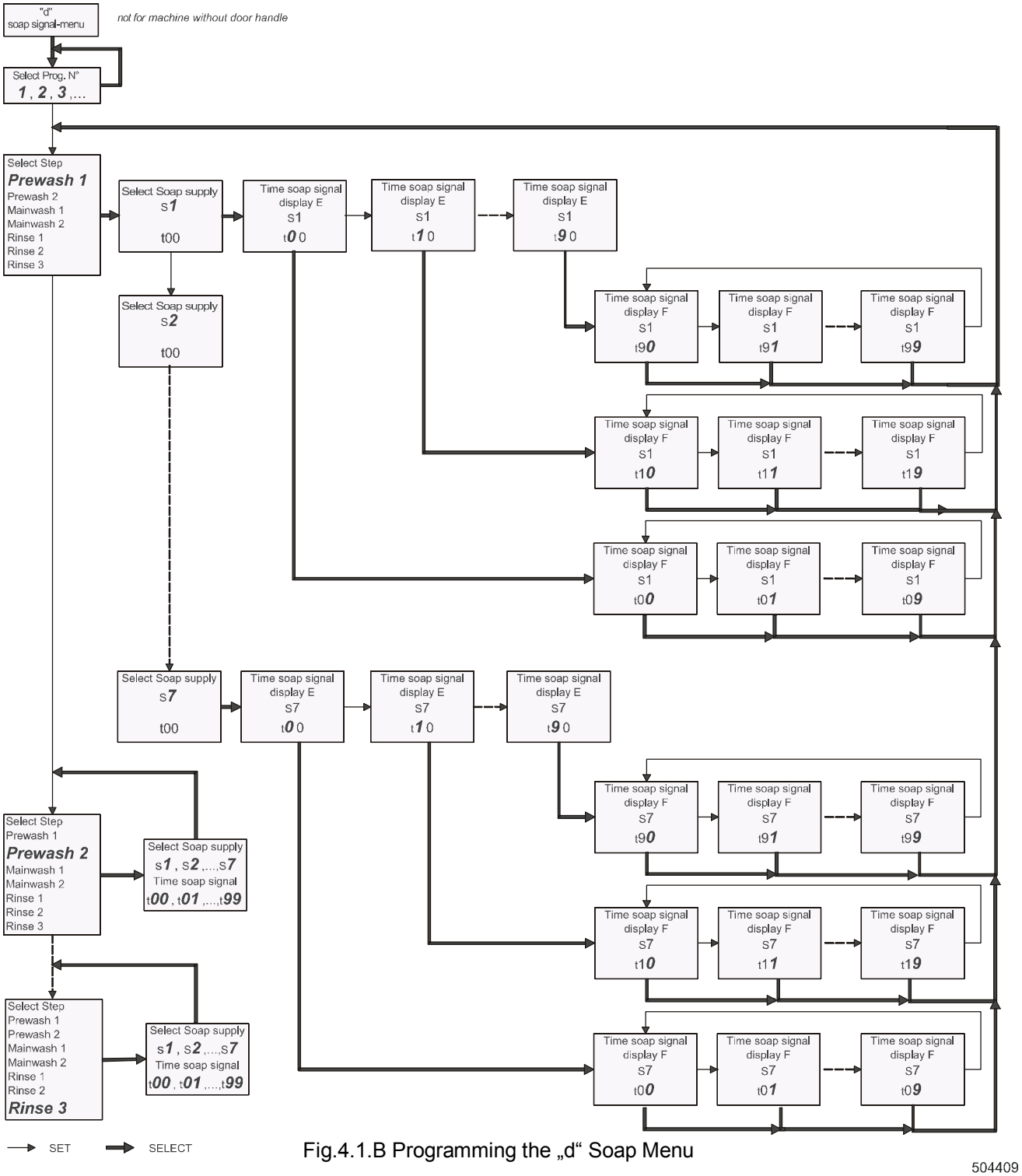

Fig.4.1.B Programming the „d“ Soap Menu

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❑ „O“ SOFTWARE VERSION MENU

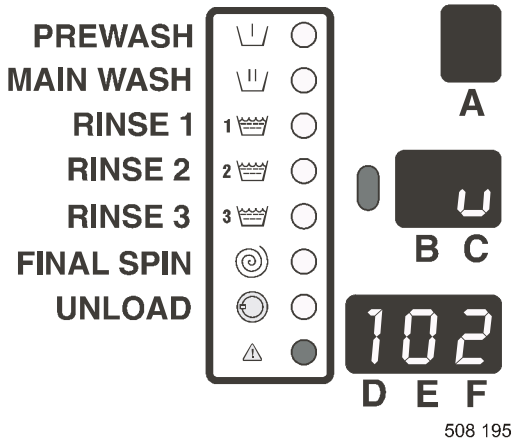
The goal of this Submenu is to leave the initialization menu.

When you select the „**o**“ submenu than you will see for 5 seconds the software version on the display.

This allows you to verify if the inserted software is the correct software version.

After these 5 seconds you are back in the Program Menu and now you can start a new program by switching over the program key to run mode and pressing the start button.

While the software version is displayed you can enter the configuration menu. Go to the chapter „Configuration Menu“.



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4.2. CONFIGURATION MENU

ATTENTION!
BEFORE MAKING CHANGES IN THE CONFIGURATION MENU READ CAREFULLY THIS MANUAL. THE CHANGES YOU MAKE WILL INFLUENCE THE WASH PROGRAM PROCESSES AND PRICE SETTINGS.
WE SUGGEST BEFORE MAKING CHANGES TO WRITE CAREFULLY DOWN WHAT THE PREVIOUS SETTINGS WERE.

Before you can enter the configuration menu, you must go first into the initialisation menu (see previous chapter).Then you have to select the „**o**“ submenu. Press the „SELECT“ button when the „**o**“ submenu is displayed. At that moment you will see the software version number. Press now the „SELECT“ button 3 times. Now you will see the character t for „**t**“ submenu.
(go to the chapter about the initialisation menu if you want to select one of the initialisation submenus)

WARNING!
BY SELECTING ANOTHER „STANDARD WASH PROGRAM-SET IN THE „S“-SUBMENU THE MENU-ITEMS IN THE „T“-SUBMENU WILL BE CHANGED. WHEN YOU INSTALL A NEW EASY CONTROL COMPUTER, FIRST START THE RECONFIGURATION OF THE SOFTWARE IN THE S-SUBMENU AND THEN IN THE „T“-SUBMENU.

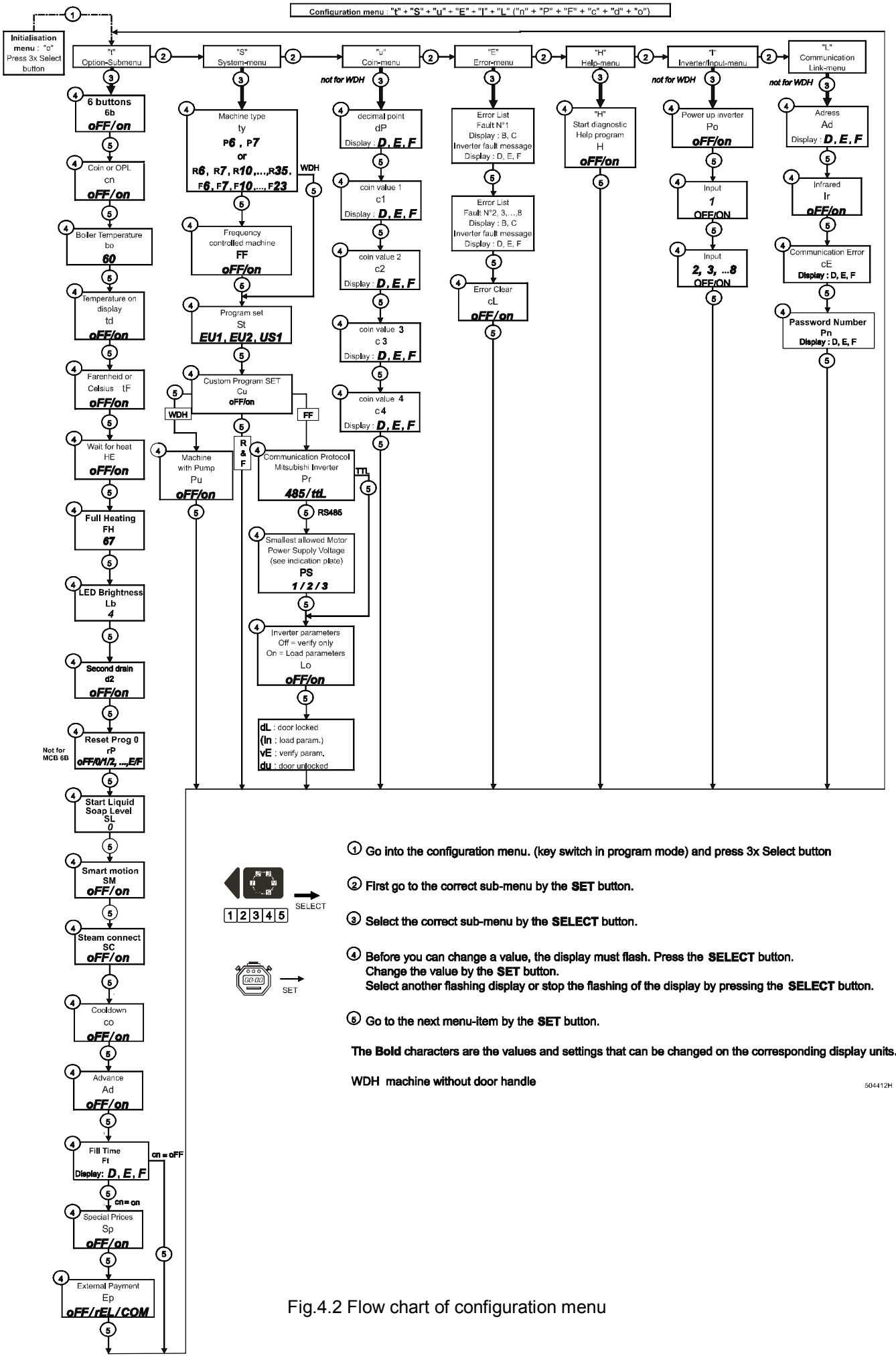
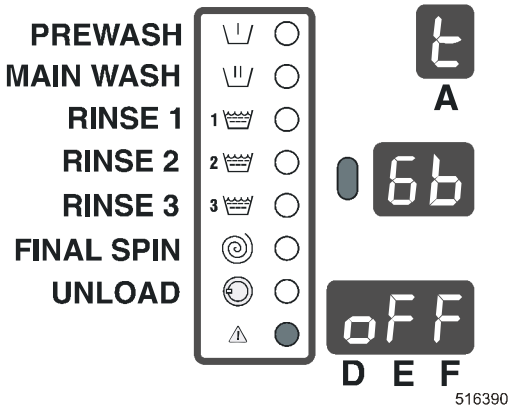


Fig.4.2 Flow chart of configuration menu

❑ „T“ OPTION SUBMENU

The goal of the Option Submenu is to define the way that the wash machine will function due to some special settings.



6 ELECTRO-MECHANICAL BUTTONS

– When the machine has a 6 electro-mechanical button switch to select the washing programs and start function, you need to select setting “on”.

– When the machine has a membrane keypad to select the washing programs and start function, you need to select setting “oFF”.

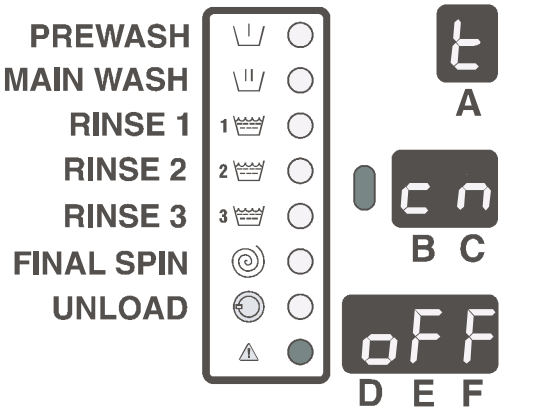
oFF = membrane keypad
on = 6 buttons switch

COIN / OPL

– Coin machine:
the machine can only be started by pressing the start button
after inserting the correct amount of coins or tokens.

– OPL version machine:
the machine is started by a start button

oFF = OPL
on = Coin machine



BOILER TEMPERATURE

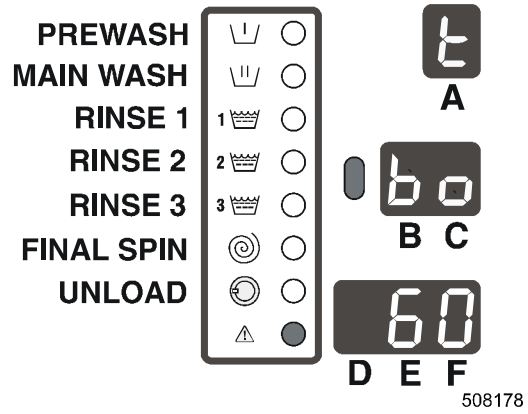
You can insert the temperature of the hot water supply.

The default value must only be adjusted if the hot water supply has a high value (about 80°C). Depending this value, the wash computer adjusts the water mixing at the fill process.

The displayed value is the temperature in degrees Celsius.

(This value is only available in °C and not in °F)

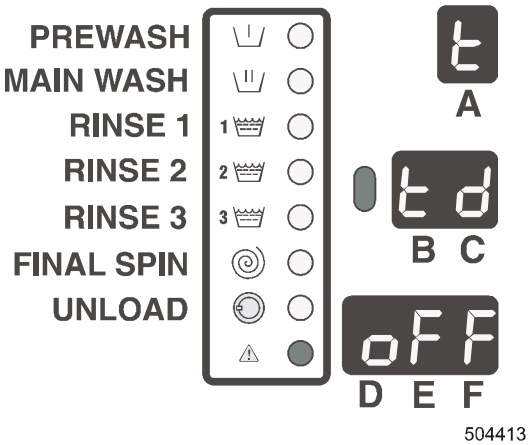
60 = hot water supply 60°C



TEMPERATURE ON DISPLAY

You can select if the temperature value must be displayed

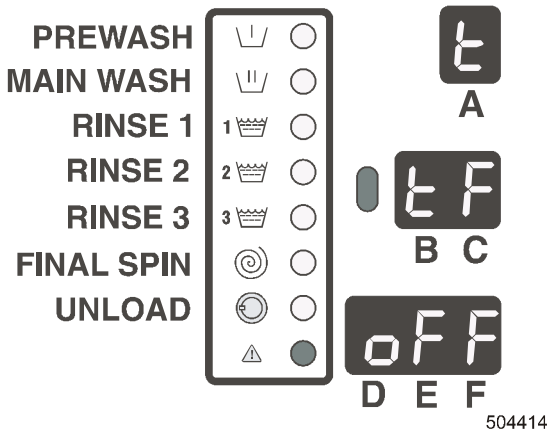
oFF = no temperature on the display
on = temperature on the display



FAHRENHEIT OR CELSIUS

You can select if the displayed temperature must be in degrees Fahrenheit or in degrees Celsius

oFF = degrees Celsius
on = degrees Fahrenheit



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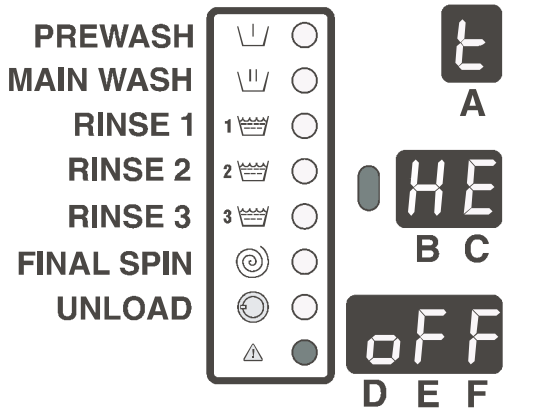
WAIT FOR HEAT

– Wait for heat selected:
The displayed time stops counting down while the machine is heating. A dot is displayed. The program will only continue if the programmed temperature has been reached.
– No wait for heat selected:
The displayed time will count down until the programmed time is over. Even when the programmed temperature was not reached, the program will continue with the next step.

oFF = no wait for heating
on = wait for heating



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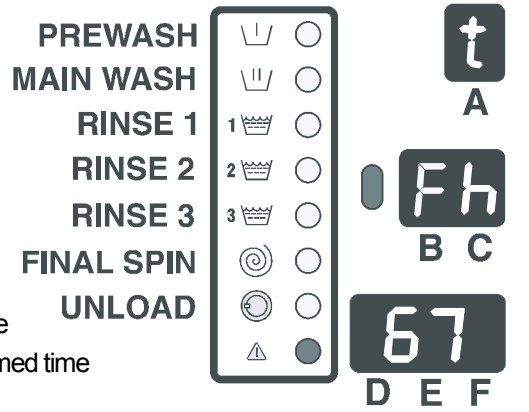
FULL HEATING

– Full Heating 0-100 (%)
When the heating has reached the programmed target temperature, heating will be restarted when the bath temperature goes below the hysteresis temperature.
– FH 100 (%) the heating will be restarted until the end of the heating sequence.
– FH 0 (%) the heating will not be restarted once the target temperature has been reached.
– For hygienic wash programs FH should be 100.

FH = 0 (%) No extra heating programmed time
FH = 67 (%) No extra heating last 1/3 programmed time
FH = 100 (%) Full heating



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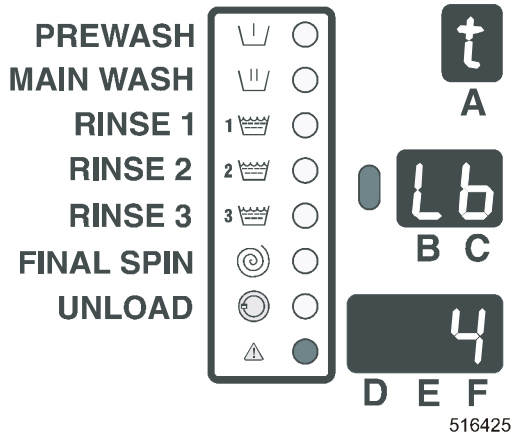
LED BRIGHTNESS

– The intensity of the LED displays can be adjusted.
If the machine is installed in an area with much sunshine the intensity of the displays can be increased to get a better view.

Lb = 1 Minimum Value
Lb = 7 Maximum Value
Lb = 4 Default setting



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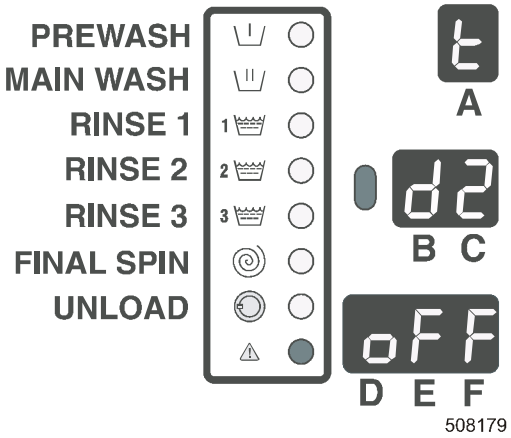
SECOND DRAIN VALVE

The second drain valve can only be programmed by the PC - Network Communication Software.

It‘s possible to disable this function even if the PC-Network Communication Software is not available.

– When d2 = oFF, at all the drain sequences, the water will be drained by the first Drain valve.
– When d2 = on, the water will be drained by the second drain valve, for those sequences that the second drain valve was selected by the PC software



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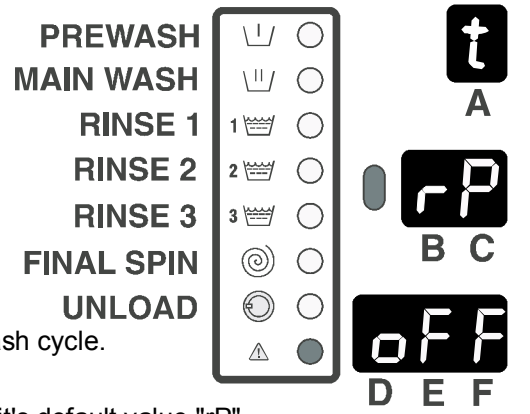
oFF = no second drain valve
on = second drain valve

RESET TO PROGRAM 0-1-2-...-E-F (not for MCB 6B)

Sometimes it is preferable that at the end of a wash cycle the program number is reset to a default value. As a result, the operator is forced to select the correct wash program number at each new started wash cycle. Not for WDH & WDHC washing machines.
Each time that the program is finished and the operator opens the door, the program number at the upper display jumps back to the "rP" value. In case it is reset as wash program number "0", which is not a valid wash program number, the operator is forced to select the desired program number before he can start a new wash cycle.



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– When r0 = oFF, previous wash cycle number is valid.
– When r0 = 0-1-2-...-E-F, previous wash cycle number is reset to it's default value "rP".

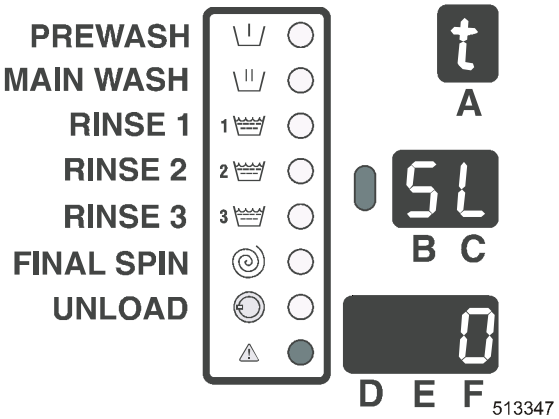
oFF = no reset to program 0
0 (-1-2-...-E-F) = reset to program 0 (-1-2-...-E-F)

START LIQUID SOAP LEVEL

– The Soap Level is the water level at which the liquid soap supplies will be started
– Default = 0 units
– Programmable between 0 and the minimum programmable water level (see water consumption table)
– A level is programmed to prevent that liquid supplies get into the tub without sufficient water in the bath.
(To avoid too big concentration.)

Value = 0 Machine starts immediately the external liquid supplies.
Value > 0 Machine waits until the programmed Soap Level is reached before external liquid supplies are started.

It’s recommended to keep the reference value = 0.



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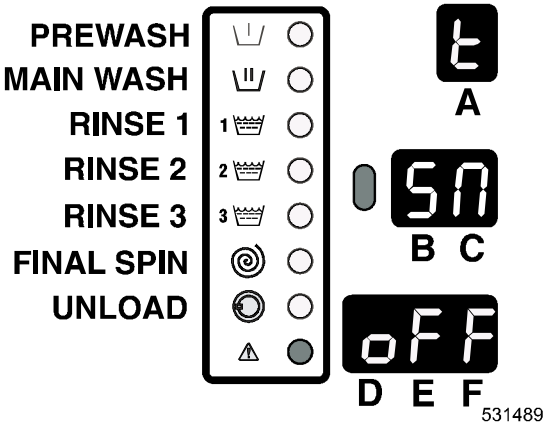
SMART MOTION

This option decreases the drum R.P.M. during water filling therefore the laundry absorps water more quickly and washing efficiency increases.



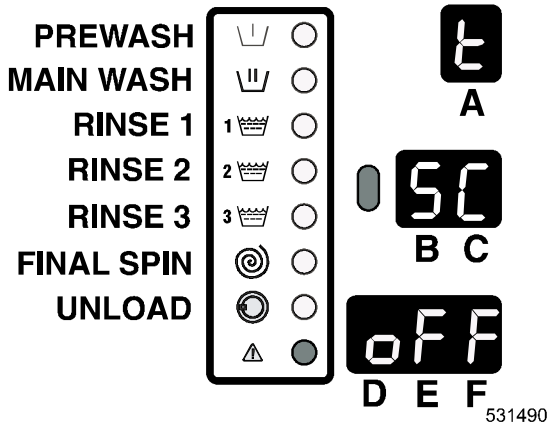
531489

oFF = no Smart motion
on = Smart motion

STEAM CONNECT

For FS6..FS16, RS6..RS35 (except RS27)

Steam heating machine option.



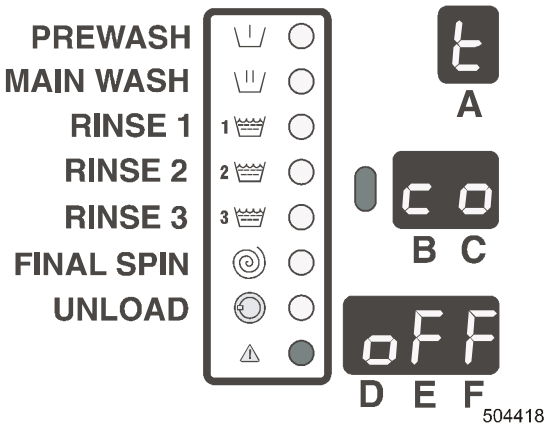
WARNING!
FOR MACHINE WITH STEAM HEATING: IF THIS OPTION IS NOT SET TO „YES“, THE LAUNDRY MAY BE DAMAGED.

COOLDOWN

The Cooldown function is activated at the end of the Mainwash step.

The Cooldown function is only functional for wash steps with a programmed temperature above 65°C.

oFF = no cooldown function
on = cooldown function

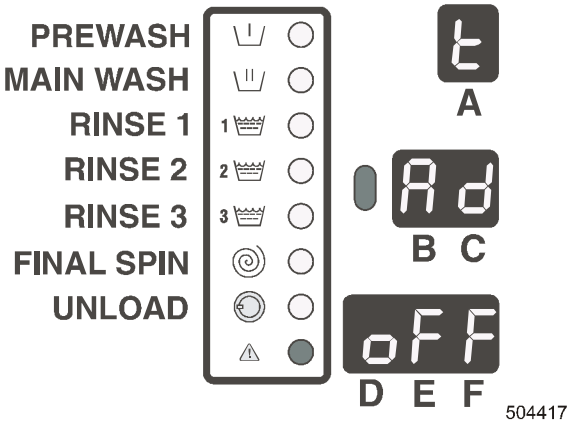


ADV

You can advance (skip) an active program step by step by pressing the start button.

oFF = no ADV function
on = ADV function

In case of a coin machine, you have to press for a long time the Start button to activate the Advance function.



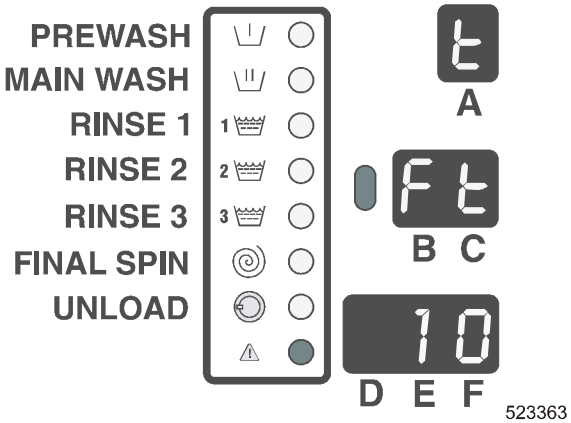
Fill Time

Fill Failure (Err 11) message is generated when the wash computer is not able, at the water fill sequence, to reach programmed water level in X minutes.

Some customers prefer a longer Err11 Detection time, because of the poor main water supply like on camping's.

Default values :

WDH, WDHC, R6-R13, F6-F10 :	**10 minutes**
R16-R27, F13, F16, F22, F23 :	**15 minutes**
R35 :	**20 minutes**



Max. programmable time value : 99 minutes.

In case of value 99 minutes, no alarm message will be generated at all.

Min. programmable time value : 10 minutes.

SPECIAL PRICES

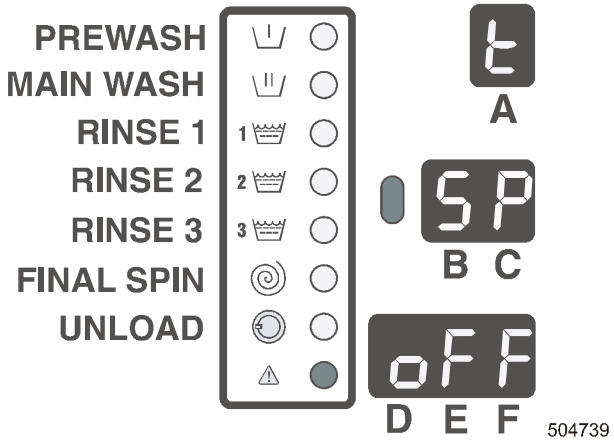
Only for machines connected with a Special Price clock Signal.

If the special price input signal is low, the standard normal prices will be displayed at the start-up P1, P2,…,PF. See C-menu.

If the special price input signal is high, the special prices will be displayed at the start-up: S1, S2,…,SF. See C-menu.

oFF = no special prices can be programmed in the c-menu.

on = special prices can be programmed in the c-menu



EXTERNAL PAYMENT SYSTEM

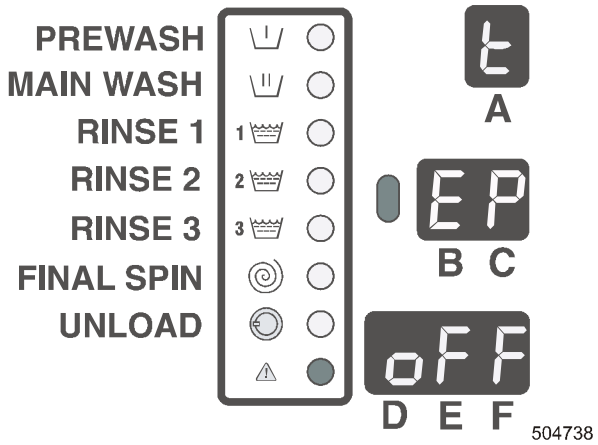
When the wash computer is connected to an External Payment system, the selection EP must be set to REL.

The Start Button light will start flashing when the wash program price has been paid at the central payment unit. (Start Release Input Signal = High)

By pressing the Start button, the program is started.

Only for the selection REL

The busy signal will be high when the door is closed. The busy signal will be switched off when the door is opened at the end of the program.



oFF = no external payment unit connected with Easy control
REL = an external payment unit that functions by potential free contacts (relay)
COM = an external payment unit that functions by direct Network Communication. See Manual PC-NETWORK
SEL = *(WDH only) functions with coin selector (token only)*
crd = Card Reader System connected to wash computer by potential free contacts.
Ecb = Electronic Coin Selector executed with a coin blocking function.

Selection "crd" is for connecting a card reader to the wash computer.
This is a special application and needs consultation at the manufacturer.

Selection "Ecb" is for connecting the coin blocking coil of an Electronic Coin Selector with the wash computer. When the washing machine is busy or in Error mode, coins will not be accepted by the Electronic Coin Selector. See electrical drawing how to connect the coil with the wash computer.

❑ „S“ SYSTEM MENU

The goal of the system menu is to select the right machine type and to initialise the machine with the standard factory settings.

WARNING!
IF YOU LOAD THE STANDARD FACTORY SETTINGS THEN ALL THE SETTINGS MADE BY THE CUSTOMER WILL BE LOST.

REMARK!
THE WATER LEVELS ARE ONLY REINITIALISED BY SELECTING ANOTHER „STANDARD WASH PROGRAM-SET” AND NOT BY SELECTING ANOTHER „MACHINE TYPE“.

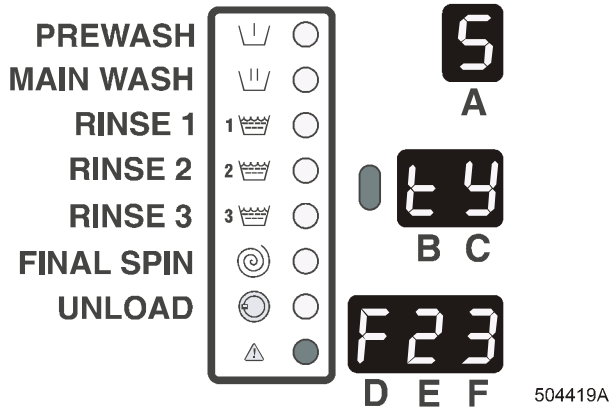
MACHINE TYPE

First you have to select the right machine type.

The right machine type can be found on the machine type plate at the rear panel of the washing machine.

Example:

F6 - F23, R6 - R35:
select the machine type



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IMPORTANT!
MAKE SURE THAT YOU ENTER THE CORRECT MACHINE TYPE!
SELECTING THE WRONG MACHINE TYPE CAN DAMAGE THE MACHINE AND HARM PERSONS AND ANIMALS!

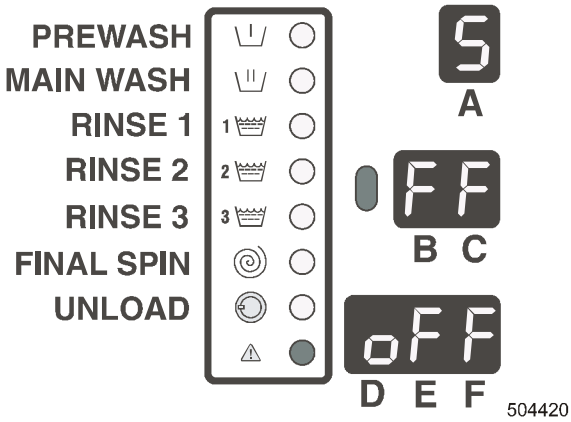
IF THE WASHING MACHINE IS A MACHINE WITH A FREQUENCY INVERTER CONTROLLED MOTOR THEN YOU HAVE TO MAKE A SECOND SELECTION:

MACHINE WITH FREQUENCY INVERTER CONTROLLED MOTOR

on = washing machine with frequency inverter controlled motor

oFF= washing machine without frequency inverter controlled motor

IMPORTANT!
MAKE SURE YOU MAKE THE RIGHT SELECTION.
SELECTING THE WRONG MACHINE TYPE CAN DAMAGE THE MACHINE AND HARM PERSONS AND ANIMALS!



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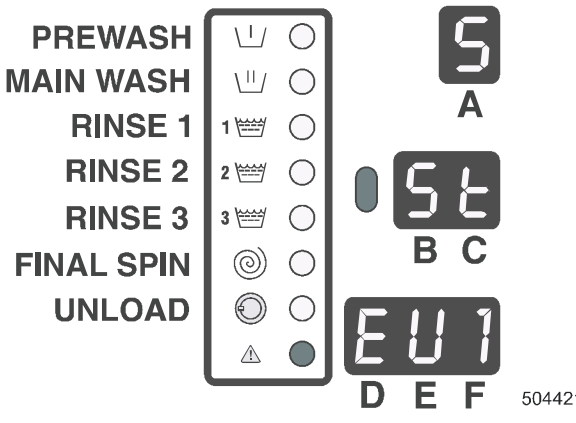
STANDARD WASH PROGRAM- SET „EU1“/„EU2“/„US1“

The next display message allows you to initialize the standard wash programs (see wash tables chapter 6).

You can select between EU1, EU2 and US1. EU1 and EU2 are the program sets for Europe. The difference between EU1 and EU2 is the number and type of water inlets.
EU1 : cold hard, warm soft and cold soft water
EU2 : warm soft and cold soft water
US1 : is the program set for America



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EU1 , **EU2** or **US1**

ATTENTION!
LOADING THE STANDARD PROGRAM'S WILL ERASE ALL THE SETTINGS MADE BY THE CUSTOMER.
ALSO THE SETTINGS IN THE T-SUBMENU WILL BE SWITCHED BACK TO THE STANDARD FACTORY SETTINGS.

ATTENTION!
WHEN A NOT COMPATIBLE SOFTWARE VERSION IS LOADED, ERROR MESSAGE 35 WILL BE GENERATED BY THE COMPUTER.

In the case of Error message **35**: To install the standard wash program set properly, you have to change the wash program set in the Sub-menu. EU1 – EU2 – US1

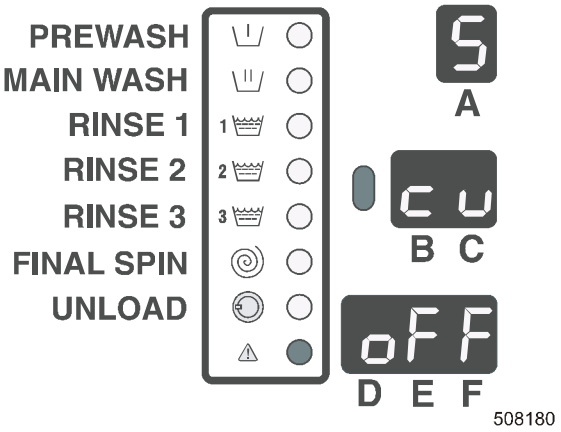
Error message **35** can only be erased by switching off and on the power.

CUSTOM PROGRAM

The Menu item Custom Program gives you an indication if the Wash Program and or Initialization/Configuration.

Settings in the Easy Control wash computer have been adjusted by External communication (= PC software).

oFF = No changes made by PC software
on = Changes made by PC software

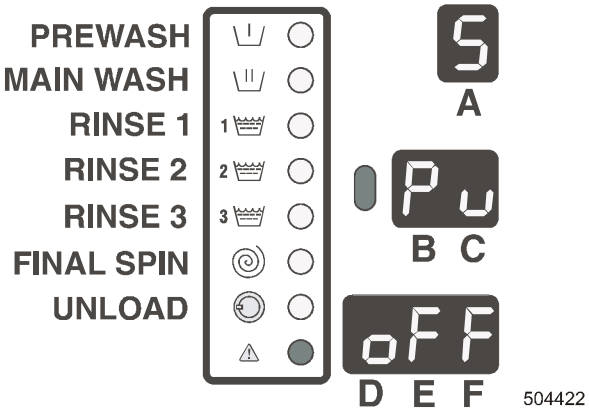


508180

PUMP OR DOD-VALVE

Only for machines without door handle

oFF = drain valve
on = drain pump



504422

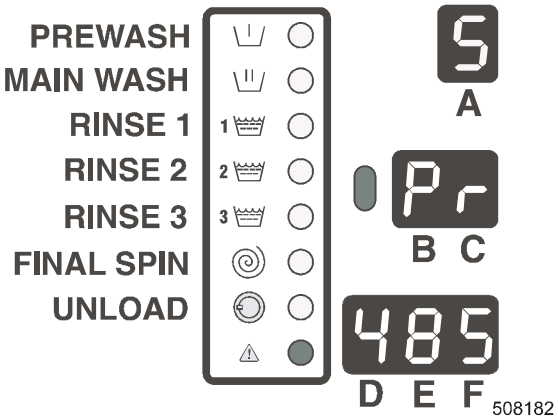
ONLY FOR MACHINES WITH MITSUBISHI FREQUENCY INVERTER CONTROLLED MOTOR.

SELECTION COMMUNICATION PROTOCOL MITSUBISHI INVERTER

The E500 Mitsubishi inverter series do only function with the RS485 communication protocol.

To ensure backward software compatibility with the FR A024 and A044 Mitsubishi Inverter series it's still possible to select the TTL communication protocol in the **Pr**(otocol) menu.

485 is the default value.
485 : RS485 communication protocol
ttL : TTL communication protocol



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SELECTION POWER SUPPLY MOTOR

For the Easy Control washing machines, depending the machine type, up to 3 different parameter lists for the Frequency Control Inverter can be selected.

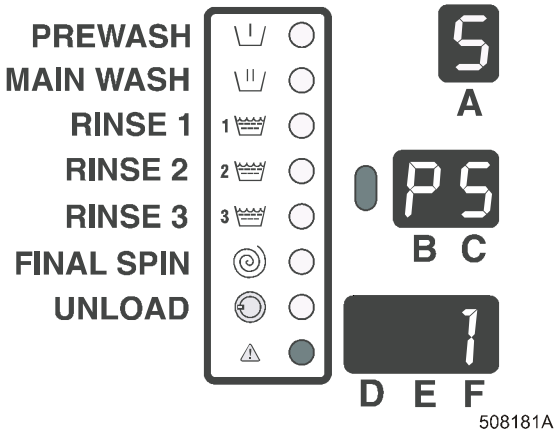
Automatically the parameters of the pre-selected list will be loaded in the Frequency Control Inverter. (See next menu item.)

The list is related to the **P**(power) **S**(supply).

Check the Power Supply Voltage at the Identification Plate at the rear side of the washing machine.

In the overview table you can see which list you must choose.

List	Inverter Type
1	E520S
2	E520S
3	E540



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(List 1 corresponds with the old selection 220. List 2 corresponds with the old selection 208)

This selection ensures that the motor will function with the right Mitsubishi Inverter parameters.

	SUPPLY VOLTAGE		
	1x220-240V 3x220-240V 3x380-415V+N	**1x208-240V 3x208-240V 3x380-415+N**	**3x380-480 (Without N)**
RF/RS16	**NA**	**List 2 (PS2)**	**List 3 (PS3)**
RF/RS22			
RF/RS35			
FF/FS6			
FF/FS7			
FF/FS10			
FF/FS16			
FF/FS22	**List (PS1)**	**NA**	
FF/FS23			

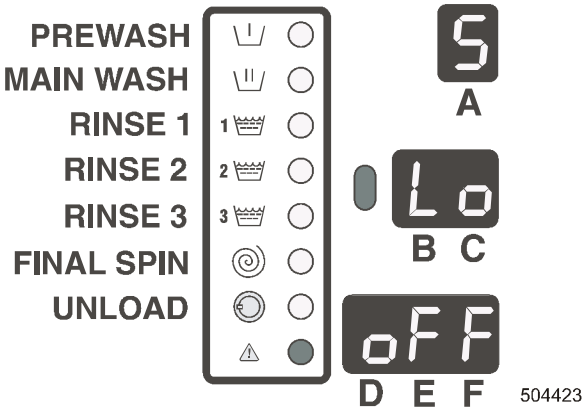
LOADING AND VERIFICATION OF THE FREQUENCY INVERTER PARAMETER SET

The software will load the parameters for the frequency inverter automatically when Lo = **on**.

The door must be closed. To avoid that the door can be opened while the parameters are loaded, the door is locked automatically.

The Easy Control computer software will always verify the parameters from the frequency inverter. At the end of the sequence the door will be unlocked again.

on: automatic loading of parameters in the frequency inverter
oFF: no loading of parameters in the frequency inverter



504423

❑ „U“ COIN SUBMENU *(NOT AVAILABLE FOR MACHINES WITHOUT DOOR HANDLE)*

The goal of the „**u**“ submenu is to program coin values and to select the position of the decimal point.

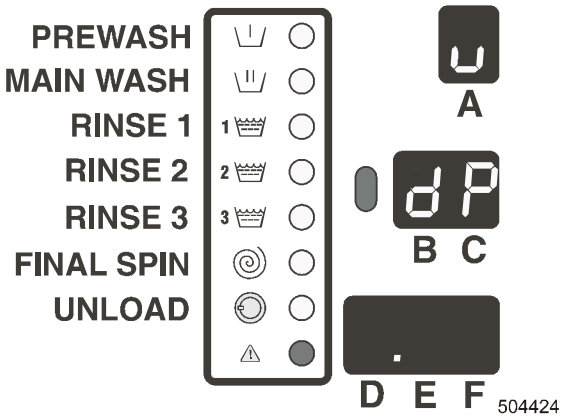
You can only change these values if you have selected „cn“ = „**on**“ in the „**t**“ routine.

This mean that the machine will function as a machine with a coin selector.

Now you can program the coin values. Only 2 coin values can be programmed as there are only 2 coin drops that can be installed.

DECIMAL POINT

0.00: setting the decimal point

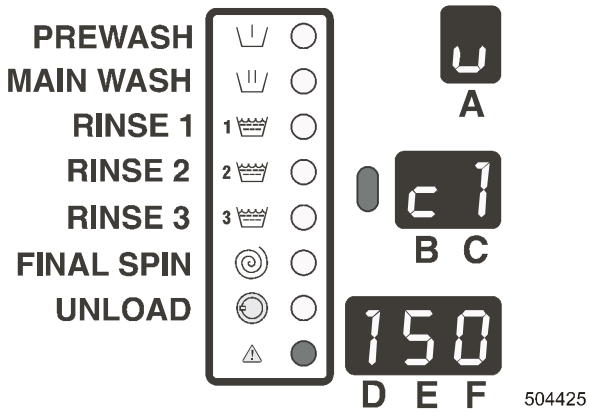


COIN VALUE

C1 = Coin value 1
C2 = Coin value 2
C3 = Coin value 3
C4 = Coin value 4

1.50: coin price

(Coin value 3 and 4 is for future expansion)



The Electronic coin selector can handle different coins.

Example EMP 500.12 v4 art code 516782

Is able to detect 0,10 - 0,20 - 0,50 - 1,00 - 2,00 EUR coins.

The coin selector sends a pulse row corresponding with the number of pulses, equal with the inserted coin value, divided by the smallest accepted coin value. (smallest accepted coin value = 0,10 EUR)

coin 0,10 EUR => 1 pulse
coin 0,20 EUR => 2 pulses
coin 0,50 EUR => 5 pulses
coin 1,00 EUR => 10 pulses
coin 2,00 EUR => 20 pulses

As each pulse corresponds with 0,10 EUR, coin value 1 "C1" must be set as 0,10 EUR.

❑ „E“ ERROR LIST SUBMENU

The goal of this Submenu is to check if diagnostic messages have occurred while the washing machine was active.

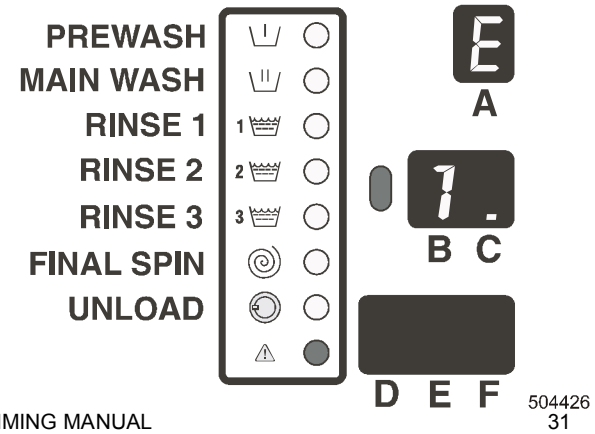
There are up to 8 messages kept in memory.

The last occurred failure message will be displayed as the first one.

A dot indicates that you see the last occurred diagnostic message.

1.Failure message 1 is the last failure message that has been active.

The error number is put on the lower display.

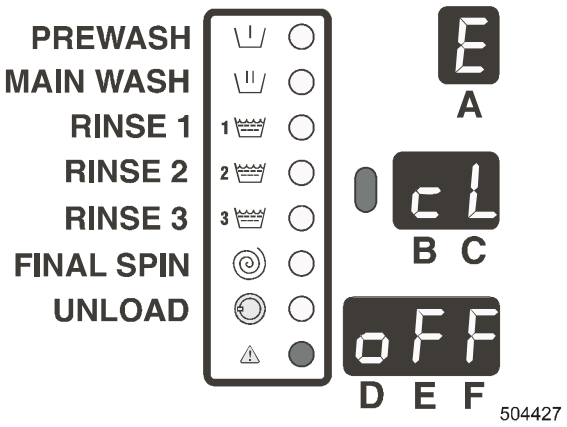


ERROR CLEAR

When all the messages are cleared: The list will contain eight times a „0“.

You can erase the list by selecting cL=**on**.

oFF = the error messages are not erased
on = the error messages are erased



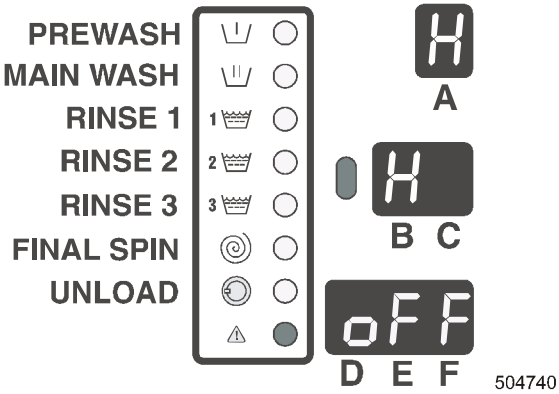
❑ „H“ DIAGNOSTIC – HELP SUBMENU

Select the diagnostic program.

Press the start button to start the diagnostic program.

Go to chapter 8 to find an overview concerning the diagnostic help program test sequence.

oFF = the diagnostic program is not selected
on = the diagnostic program is selected



❑ „I“ INVERTER - INPUT SUBMENU

(ONLY AVAILABLE FOR MACHINES MITSUBISHI INVERTER)

POWER ON FREQUENCY INVERTER

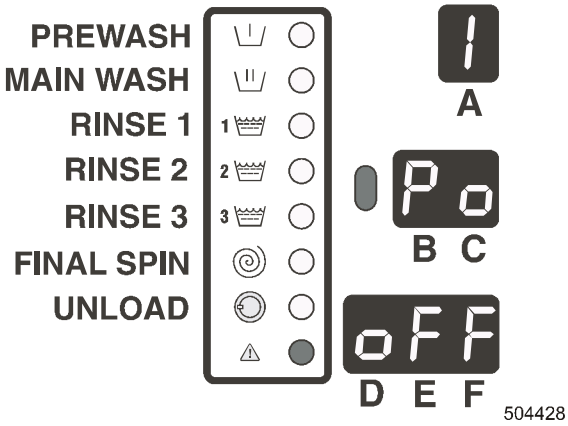
Only for machines with a frequency inverter controlled motor.

If a technician will investigate the inverter by a parameter copy unit then he can energise the inverter by selecting Po = **on**.

The door must be closed.

ATTENTION!
ONLY FOR QUALIFIED TECHNICIANS

oFF = the inverter is not powered
on = the inverter is powered

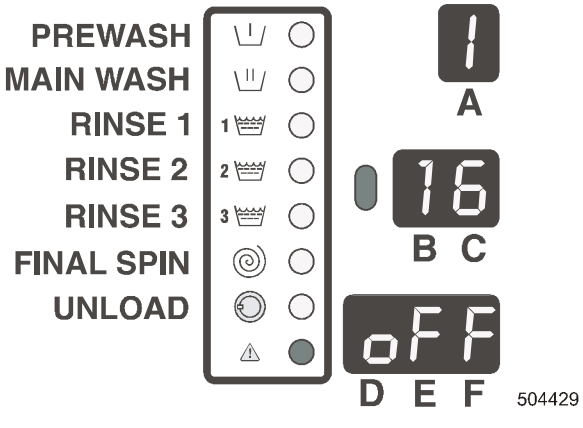


INPUTS

The technician can verify the input signals of the Easy Control computer one by one.

Press the „SET“ button to see input by input.

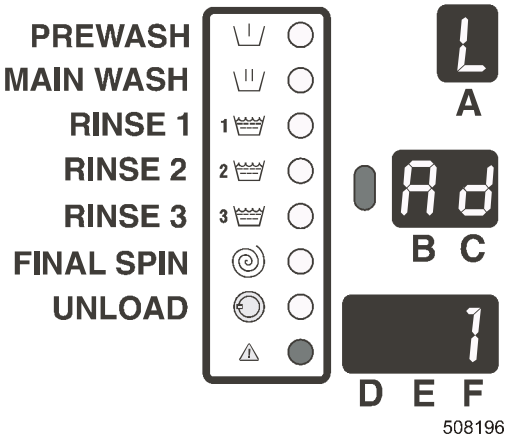
oFF = no input signal
on = input signal



❑ „L“ COMMUNICATION LINK SUBMENU

FOR MORE INFO : SEE MANUAL PC-NETWORKING COMMUNICATION SOFTWARE

In the L menu : you can select the right communication port



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ADDRESS

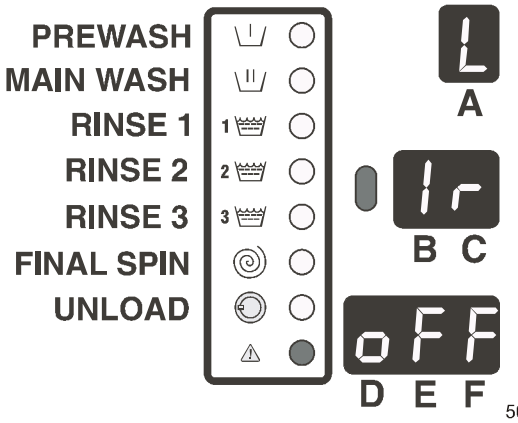
1: address 1 is selected

Networking : each machine type must have an unique address

INFRARED

Selecting between infrared communication or the RS485 communication networking.

oFF = RS485 communication networking
on = infrared communication



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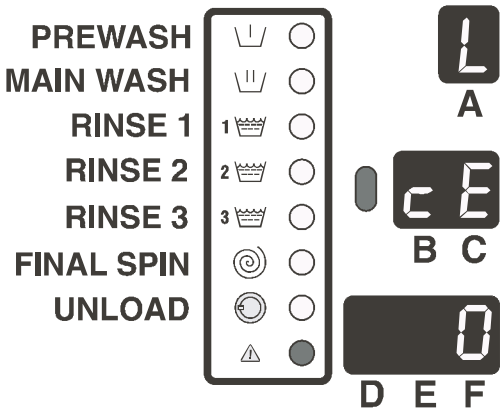
COMMUNICATION ERROR

0 : no messages

This menu item can be used for monitoring the network.

For more information see Manual PC-Network. (Manufacturer)



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PASSWORD NUMBER

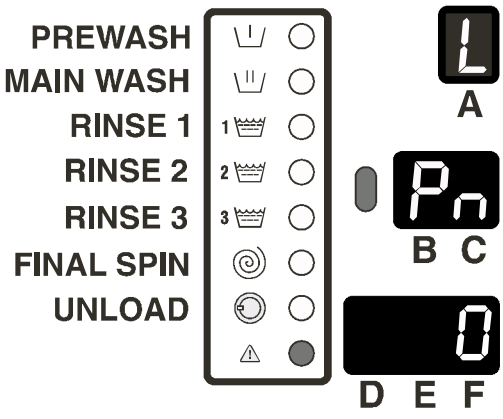
For machines without mechanical key switch.

A Password number avoids that you can get free access to the setup menu.

If the "Pn" value is bigger then "0", then the password will be switched on.

0 : no Password

The Password can only be removed by putting the "Pn" value back to "0".



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In case the "Pn" is bigger then "0" and you want to enter to the setup mode.

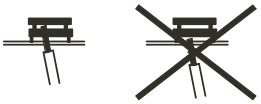
A new Menu "Y" will be shown first. In this menu you have to select the password.

If you enter the right password you will see the other menu's, otherwise you will not see them.

4.3. INSTALLING NEW SOFTWARE

❑ WHY INSTALLING NEW SOFTWARE

To add new features to the software and to improve the functionality of the washing machine, new software releases are produced by the manufacturer.



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❑ INSTRUCTION FOR INSTALLING NEW SOFTWARE

1. Switch off the main power.
2. Open the cover plate of the washing machine.
3. The EPROM with the implemented software is the only IC on the electronic board that can be removed.
4. Take the EPROM out of the IC-holder and replace it by a new one. Make sure that you put the screwdriver between the EPROM and the socket. (see picture)
5. Make sure that you put the new chip at the right position. See fig.3.1.
6. Switch on the main power.
7. The display should be lighting up.
8. If the software is compatible: the new software can be used without re-initialization.
9. You can clear all the error messages in the system menu to allow a correct determination about the new software implementation.
10. If the software is not 100% compatible with the previous software version:
    The new software will generate a diagnostic message 35. When fault message 35 occurs you must reload the standard wash program's in the „**S**"-submenu (be aware: all your custom made settings will be erased).

    Loading the standard wash programs :

    Change the selection EU1 to EU2 or EU2 to US1 or US1 to EU1. By changing the selection a new SET of wash programs will be loaded. When you don't change the setting or select the old setting again, the default wash programs will not be loaded. (dashes will appear when the data is loaded)
    After loading the standard wash program's, erase diagnostic message 35 by switching the power off/on.
11. Now you can start a new cycle.

ADVICE:
For a practical way of working for changing the EPROM : the electronic board can be easily taken out the machine by the front panel. See installation manual.

5. OPERATION MENU

5.1. STARTING UP

– Before starting up the first time: be sure that the machine is well installed, see installation manual of machine.
– Be sure that the correct settings are made: see initialization and configuration menu. Ask the help of a technician.
– Make sure that the key switch is in the Run mode. Wash programs can not be started if the key switch is still in the Program mode.

5.2. SWITCHING ON THE POWER

The display lights up when you switch on the power.

5.3. LOAD THE WASH MACHINE

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

Machine without door handle :
You can open the door by pressing the door unlock button when the LED of the Door Unlock button is illuminated.

5.4. PUT SOAP INTO THE SOAP DISPENSER

Put the correct amount of soap into the soap dispenser.

5.5. SELECTING A WASH PROGRAM

Press the„SELECT“ button until you see on the upper display the number that corresponds with the number of the wash program that you want to start. See the label on the front panel of the machine or the wash tables at chapter 6. (Program number 0 is not a valid number, a number between 1 and F must be selected).

5.6. SELECTING AN F-BUTTON FUNCTION

There are 6 F-button functions that can be selected from a list in the F-menu:

PREWASH, SOAK, DELAY TIME, ECONOMIC, NO SPIN, GENTLE WASH ACTION

By pressing the F-button, the specific function will be enabled and the F-button LED will be illuminated. You have to press the START button within 10 seconds otherwise, the F-button function will be switched Off again. (CP-system = 2 minutes).

For the SOAK and DELAY TIME function the displayed value is the time in Hours. Each time the F-button is pressed, the time value will be increased with 1 Hour.

5.7. STARTING A WASH PROGRAM

– **OPL version:**
Press the „START“ button
– **COIN version and MCB 6B:**
Insert the correct amount of coins. Each time you insert a coin : the coin value is subtracted on the bottom display.
– **External payment unit :** Insert the correct amount of coins at the external payment unit. The start button light will start flashing to indicate that you have to press the start button of the washing machine.
– **Machine without door handle with external coin box**:
A start pulse is given to the electronic timer when the correct amount of coins in the external coin box is inserted.
– **For all coin related systems**: When you see „00“ on the bottom display and the display is flashing: press the start button to start the wash program. If the door was still open when the price was paid: the door LED will start flashing to indicate that you must close the door before you can start a program. Close the door and press the start button.

Now the wash program is started and the complete wash process will be fulfilled.

REMARK:
FOR COIN MACHINE: SELECTING ANOTHER PROGRAM NUMBER WHILE THE MACHINE IS READY TO BE STARTED (THE PRICE = 00 ON THE BOTTOM DISPLAY).

If the new selected program has a higher price:

– the difference in price will be displayed on the lower display
– extra coins have to be inserted to pay the price difference between the old and the new selected program.

Depending the machine settings, the price can be increased by selecting an extra PREWASH sequence. (F-BUTTON).

5.8. SELECTING ANOTHER PROGRAM AFTER THAT THE PROGRAM IS ALREADY STARTED

Sometimes it will happen that you have pressed the start button before you have selected the correct program number. No problem, you can still select another program number. Press the „SELECT“ button until you have reached the correct wash program.

REMARK:
THE TIME FOR SELECTING ANOTHER PROGRAM IS LIMITED.

– **OPL version**: you can only switch during the first step to another wash program
– **COIN version**: you have only 150 sec to switch to another wash program. It is possible that the program will ask you to insert extra coins. If you don't insert these extra coins than the program will swap back to the program number at the moment that the start button was pressed.

REMARK:
WHEN YOU PRESS THE „SELECT“ BUTTON, THE UPPER DISPLAY WILL START FLASHING FOR ABOUT 2 SECONDS

The new program will only start when the upper display stops flashing. There is a small delay time between pressing the button and starting a new program. This to avoid that the inlet valves and contactors will change state each time you press the „SELECT“ button.

5.9. ADVANCING THE WASH PROGRAM

RUN MODE:

– **OPL version**: the advance function for the start button must be set = ON to activate the advance function
– **COIN version**: advance function works only after pressing for 20 seconds on the Start Button.

PROGRAM MODE:

– the advance function for the „START“ button is automatically activated when the machine is in setup mode. (see chapter 3.2.).

Press the „START“ button to advance the program (it is only possible to advance a program that has been started).
Each time you press the „START“ button, the program will go over to the next wash process.

Example:
When Rinse 1 is active and you press the „START“ button: the program will go further on with the intermedium spin sequence. When you press again the „START“ button: the program will go further on with program step Rinse 2, etc.

REMARK:
WHEN YOU PRESS THE „START“ BUTTON: THE DISPLAY WILL START FLASHING. THE NEW SEQUENCE WILL ONLY START AFTER 2 SEC WHEN THE DISPLAY STOPS FLASHING.

There is a small delay time between pressing the „START“ button and starting up a new sequence.
This to avoid that the inlet valves and contactors will change state each time you press the „START“ button.

5.10. WASH TIME

Once the program has been started, the remaining wash time is displayed on the middle display.

The displayed time is minutes. When the wash time exceeds 1 Hour, the hours are separated from the minutes by a dot. Above 10 hours only the time in hours is displayed.

Sometimes a dot is displayed to indicate that the time on the display stops counting down.

The time that the dot is displayed is extra time.

The total wash time = programmed wash 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)
4. the extra time for heating if „Wait for heat is selected“
5. the extra free run time at the end of the spin sequence

5.11. PROGRAM END

The time on the display is counting down until 0. When 0 is reached the program cycle is finished and the door can be opened. To indicate that the door can be opened, the Door LED is *lightened*. Open the door and unload the machine. The 0 on the display will be erased and the machine is ready to start a new program.

Only for machines without door handle:
The door can only be opened by pressing the „DOOR UNLOCK“ button when the LED door unlock button is lightened

5.12. WATER FILL PROCESS

Depending the water temperature the correct inlet valves will be opened.
Which inlet valves will be activated, see wash tables chapter 6.

The water level is measured by an electronic device.

The Normal Low and Normal High water levels mean the standard water levels. The Economic Low and Economic High water levels mean the standard economic water levels. These water levels can be adjusted.

You can only adapt the levels between certain limits.
The lower limit is above the heating elements and the temperature sensor. The upper limit is below the overflow hole. You can find the limits for each machine type in a table (see P-menu).

5.13. ECONOMY LEVELS

In the European program sets EU1 and EU2, certain programs have an economy level facility (see part 4). These programs can be used for slightly soiled and/or smaller volumes of laundry. In other cases, these programs will only give poor washing quality. This option is not available in the US1 program set.

5.14. HEATING PROCESS

It is possible to select „Wait for heat“ in the „**t**-submenu“.

– When 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.
– When „Wait for heat“ is selected:
  The machine will heat until the programmed temperature is reached. The programmed time of the wash step will only start counting down from the moment that the target temperature was reached. The temperature can be set ON/OFF on the lower display by setting „td“ = on/oFF in the „**t**“-submenu. The temperature value can be displayed in °F or °C by setting „°F“ = on/oFF in the „**t**“-submenu.

ATTENTION!
WHEN MACHINES HAVE NO ELECTRICAL OR STEAM HEATING NO „WAIT FOR HEAT“ SHOULD BE SELECTED IN THE „T“-SUBMENU.

5.15. COOLDOWN FUNCTION

For some delicate wash processes it is recommendable to avoid shrinking the laundry by entering immediately cold water into the drum. This can be solved by a Cooldown function.

For programs with a temperature above 65°C at the end of the Main wash step cold water will enter the drum for 30 sec. This cold water is mixed with the hot water so that the water temperature will decrease slowly. After another 30 sec cold water will enter the drum once more for 30 sec. When the temperature gets below 65°C, then the water will be drained. The Cooldown function can be selected in the „**t**“-submenu.

The standard setting is oFF for the cooldown function.

5.16. FLUSH FUNCTION (NOT FOR MCB 6B)

See wash tables. Program D, E and F.

You can activate the flush function by programming a time for the Prewash step with flush function.
The water will flush for the programmed time of the flush step.

(For machines without door handle: no flush function)

5.17. UNBALANCE

When the machine is badly loaded during the spin sequence, than the tilt switch will be activated. The Spin sequence will be interrupted and the load will be redistributed. The wash machine will try up to 10 times to redistribute the laundry.

5.18. WAIT STATE

It can occur that the normal machine operation has been interrupted and that you have to wait until the machine allows you to go on. You can recognize the wait state by a display that is counting down second by second.

This will occur when the power has been switched off and on. As the software doesn't know how fast the motor was spinning, a delay time is respected before the machine can be restarted.

5.19. HOW TO HANDLE FAILURE MESSAGES

A failure message is displayed when the fault LED is on. The number on the middle display corresponds with a specific fault. On the lower display Err is flashing to indicate that an Error message occurred.

Fault message 99 indicates that for safety reasons the door can not be unlocked.

GO TO THE CHAPTER ERROR HANDLING TO FIND OUT MORE ABOUT ERROR HANDLING.

5.20. HOW TO HANDLE POWER INTERRUPTIONS

When a power interruption occurs while the machine is in standby mode and no program was started, the machine will stay in standby mode. When a power interruptions occurs while the machine is washing, after the power interruption, the timer will check if the door is still locked by the bimetal.

WHEN THE POWER IS SWITCHED BACK ON WE CAN CONSIDER THREE POSSIBLE CASES:

1. **The door is locked.**

The timer will continue the program

2. **The door is closed but not locked anymore.**

OPL version:

– The display and the LED start button will start flashing to indicate that a power interruption has occurred.
– When the power is switched back on, the door is not locked immediately.
– Press the start button to continue the program.

COIN version:

– The display and the LED start button will start flashing to indicate that a power interruption has occurred.
– When the power is switched back on, the door is locked immediately.
– Press the start button to continue the program.

3. **The door is open, due to mechanical override.**

At the moment that the power is switched back on, the program will go over to standby mode.

ATTENTION!
AFTER THE POWER INTERUPTION, THE LED OF THE LAST ACTIVE STEP WILL BE ELUMINATED.

Only for machines without door handle:
When the door is still closed after a power interruption, the machine will not start automatically, the start button must be pressed again.

5.21. THE PROGRAM COUNTER OR COIN COUNTER

Set the key switch in program mode. Press the „SET“ button. On the lower display:

– **OPL version**: the program counter is displayed
– **COIN version**: the coin counter is displayed

By pressing >5 sec on the „SET“ button, the counter is reset. (Vandalism Free keypad : Press 3x „SET“ button in 5 sec).

6. STANDARD WASH PROGRAMS

6.1. LEGEND

❑ PROGRAM SETS

– **EU1**: European program set with cold/soft, hot/soft, cold/hard water supply
– **EU2**: European program set with cold/soft, hot/soft water supply
– **US1**: American program set with cold/soft, hot/soft water supply.

❑ PROGRAMMABLE SEQUENCES

– Programmable sequences are marked by * symbol

❑ INLETS (VALVES)

Valve 1 : Cold soft (EU2) or cold hard (EU1), soap dispenser „C“ for last rinse
Valve 2 : Cold soft, soap dispenser „A“ for prewash
Valve 3 : Hot soft, Direct inlet (*WDH: dispenser „A“*)
Valve 4 : Hot soft, soap dispenser „B“ for main wash
Valve 5 : Cold soft, soap dispenser „B“ for main wash
Valve 6 : Cold soft, Direct inlet (*not for WDH*)

Only for WDH & WDHC machines :
WDH Machines have no cold/hard water supply. This type of machine has only 5 inlet valves: inlet valve 6 is not used. Last rinse EU1 and EU2 : inlet 1,2 and 5 are opened.

❑ TEMPERATURE UNIT

– EU1 -> °C
– EU2 -> °C
– US1 -> °F

❑ WATER LEVEL

– **E**: open drain valve
– **EL**: low economy level
– **EH**: high economy level
– **N**L: low normal level
– **NH**: high normal level

❑ WASHING ACTION

– normal (12 sec of washing revolution, 3 sec rest)
– gentle (3 sec of washing revolution, 12 sec rest)

❑ RPM (REVOLUTIONS PER MINUTE)

W:	type FS/RS/*WDH/WDHC*	= washing speed, standard 40 à 50 rpm
D:	type FS/RS/*WDH/WDHC*	= distribute, not changeable low extraction speed
L:	type FS/RS/*WDH/WDHC*	= low extraction speed, standard 350 rpm
H	type FS/*WDH/WDHC*	= high extraction speed standard 980 rpm
	type RS	= high extraction speed standard 450 à 500 rpm

WDH = machines without door handle, WDHC = machines without door handle & with coin selector

6.2. WASH PROGRAM TABLES FOR PROGRAM SET EU1-EU2

❑ WASH PROGRAM 1: HOT WASH 90°C

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Prewash 1	2- 3	1° 30 45 °C	NL	normal	5 min	W
Spin	-	-	-	-	1 min	L
* Prewash 2	2- 3	1° 30 45 °C	NL	normal	0 min	W
Spin	-	-	-	-	1 min	L
* Main wash 1	5-4-3	1° 90 92 °C	NL	normal	10 min	W
Drain	-	-	-	-	30 sec	D
* Main wash 2	5-4-3	1° 40 92 °C	NL	normal	0 min	W
Drain	-	-	-	-	30 sec	D
* Rinse 1	2-5-6	-	NH	normal	2 min	W
Spin	-	-	-	-	1 min	L
* Rinse 2	2-5-6	-	NH	normal	2 min	W
Spin	-	-	-	-	1 min	L
* Rinse 3	1(+6 PR2)	-	NL	normal	3 min	W
* Spin	-	-	-	-	5,5 min	H
Slowdown	-	-	-	-	-	-
Tumble	-	-	-	normal	30 sec	W(5/5s)

❑ WASH PROGRAM 2: WARM WASH 60°C

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Prewash 1	2- 3	1° 30 45 °C	NL	normal	5 min	W
Spin	-	-	-	-	1 min	L
* Prewash 2	2- 3	1° 30 45 °C	NL	normal	0 min	W
Spin	-	-	-	-	1 min	L
* Main wash 1	5-4-3	1° 60 92 °C	NL	normal	10 min	W
Drain	-	-	-	-	30 sec	D
* Main wash 2	5-4-3	1° 40 92 °C	NL	normal	0 min	W
Drain	-	-	-	-	30 sec	D
* Rinse 1	2-5-6	-	NH	normal	2 min	W
Spin	-	-	-	-	1 min	L
* Rinse 2	2-5-6	-	NH	normal	2 min	W
Spin	-	-	-	-	1 min	L
* Rinse 3	1(+6 PR2)	-	NL	normal	3 min	W
* Spin	-	-	-	-	5,5 min	H
Slowdown	-	-	E	-	30 s	-
Tumble	-	-	E	normal	30 s	W(5/5s)

❑ WASH PROGRAM 3: COLOURED WASH 40° C

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Prewash 1	2- 3	1° 30 45 °C	NL	normal	5 min	W
Spin	-	-	-	-	1 min	L
* Prewash 2	2- 3	1° 30 45 °C	NL	normal	0 min	W
Spin	-	-	-	-	1 min	L
* Main wash 1	5-4-3	1° 40 45 °C	NL	normal	10 min	W
Drain	-	-	-	-	30 sec	D
* Main wash 2	5-4-3	1° 40 45 °C	NL	normal	0 min	W
Drain	-	-	-	-	30 sec	D
* Rinse 1	2-5-6	-	NH	normal	2 min	W
Spin	-	-	-	-	1 min	L
* Rinse 2	2-5-6	-	NH	normal	2 min	W
Spin	-	-	-	-	1 min	L
* Rinse 3	1(+6 PR2)	-	NL	normal	3 min	W
* Spin	-	-	-	-	5.5 min	H
Slowdown	-	-	-	-	-	-
Tumble	-	-	-	normal	30 sec	W(5/5s)

❑ WASH PROGRAM 4: BRIGHT COLOURED WASH 30° C

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Prewash 1	2-3-6	1° 30 45 °C	NL	normal	0 min	W
Spin	-	-	-	-	30 sec	D
* Prewash 2	2-3-6	1° 30 45 °C	NL	normal	0 min	W
Spin	-	-	-	-	30 sec	D
* Main wash 1	3-5-6	1° 30 45 °C	NL	normal	8 min	W
Drain	-	-	-	-	30 sec	D
* Main wash 2	3-5-6	1° 30 45 °C	NL	normal	0 min	W
Drain	-	-	-	-	30 sec	D
* Rinse 1	2-5-6	-	NH	normal	2 min	W
Spin	-	-	-	-	30 sec	D
* Rinse 2	2-5-6	-	NH	normal	2 min	W
Spin	-	-	-	-	30 sec	D
* Rinse 3	1(+6 PR2)	-	NL	normal	3 min	W
* Spin	-	-	-	-	4 min	H
Slowdown	-	-	-	-	-	-
Tumble	-	-	-	normal	30 sec	W(5/5s)

❑ WASH PROGRAM 5: WOOLLENS 15° C

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Prewash 1	2-6	1° 15 45 °C	NH	gentle	0 min	W
Spin	-	-	-	-	30 sec	D
* Prewash 2	2-6	1° 15 45 °C	NH	gentle	0 min	W
Spin	-	-	-	-	30 sec	D
* Main wash 1	5-6	1° 15 45 °C	NH	gentle	6 min	W
Drain	-	-	-	-	30 sec	D
* Main wash 2	5-6	1° 15 45 °C	NH	gentle	0 min	W
Drain	-	-	-	-	30 sec	D
* Rinse 1	2-5-6	-	NH	gentle	2 min	W
Spin	-	-	-	-	30 sec	D
* Rinse 2	2-5-6	-	NH	gentle	2 min	W
Spin	-	-	-	-	30 sec	D
* Rinse 3	1(+6 PR2)	-	NH	gentle	3 min	W
* Spin	-	-	-	-	2.5 min	L
Slowdown	-	-	-	-	-	-
Tumble	-	-	-	gentle	30 sec	W(5/5s)

❑ WASH PROGRAM 6: HOT WASH 90°C - ECONOMY LEVEL

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Prewash 1	2- 3	1° 30 45 °C	EL	normal	0 min	W
Spin	-	-	-	-	1 min	L
* Prewash 2	2- 3	1° 30 45 °C	EL	normal	0 min	W
Spin	-	-	-	-	1 min	L
* Main wash 1	5-4-3	1° 90 92 °C	EL	normal	30 min	W
Drain	-	-	-	-	30 sec	D
* Main wash 2	5-4-3	1° 40 92 °C	EL	normal	0 min	W
Drain	-	-	-	-	30 sec	D
* Rinse 1	2-5-6	-	EH	normal	6 min	W
Spin	-	-	-	-	1 min	L
* Rinse 2	2-5-6	-	EH	normal	6 min	W
Spin	-	-	-	-	1 min	L
* Rinse 3	1(+6 PR2)	-	EH	normal	6 min	W
* Spin	-	-	-	-	5.5 min	H
Slowdown	-	-	-	-	-	-
Tumble	-	-	-	normal	30 sec	W(5/5s)

❑ WASH PROGRAM 7: WARM WASH 60°C - ECONOMY LEVEL

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Prewash 1	2- 3	1° 30 45 °C	EL	normal	0 min	W
Spin	-	-	-	-	1 min	L
* Prewash 2	2- 3	1° 30 45 °C	EL	normal	0 min	W
Spin	-	-	-	-	1 min	L
* Main wash 1	5-4-3	1° 60 92 °C	EL	normal	25 min	W
Drain	-	-	-	-	30 sec	D
* Main wash 2	5-4-3	1° 40 92 °C	EL	normal	0 min	W
Drain	-	-	-	-	30 sec	D
* Rinse 1	2-5-6	-	EH	normal	6 min	W
Spin	-	-	-	-	1 min	L
* Rinse 2	2-5-6	-	EH	normal	6 min	W
Spin	-	-	-	-	1 min	L
* Rinse 3	1(+6 PR2)	-	EH	normal	6 min	W
* Spin	-	-	-	-	5.5 min	H
Slowdown	-	-	-	-	-	-
Tumble	-	-	-	normal	30 sec	W(5/5s)

❑ WASH PROGRAM 8: COLOURED WASH 40° C - ECONOMY LEVEL

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Prewash 1	2- 3	1° 30 45 °C	EL	normal	0 min	W
Spin	-	-	-	-	1 min	L
* Prewash 2	2- 3	1° 30 45 °C	EL	normal	0 min	W
Spin	-	-	-	-	1 min	L
* Main wash 1	5-4-3	1° 43 45 °C	EL	normal	25 min	W
Drain	-	-	-	-	30 sec	D
* Main wash 2	5-4-3	1° 40 45 °C	EL	normal	0 min	W
Drain	-	-	-	-	30 sec	D
* Rinse 1	2-5-6	-	EH	normal	6 min	W
Spin	-	-	-	-	1 min	L
* Rinse 2	2-5-6	-	EH	normal	6 min	W
Spin	-	-	-	-	1 min	L
* Rinse 3	1(+6 PR2)	-	EH	normal	6 min	W
* Spin	-	-	-	-	5.5 min	H
Slowdown	-	-	-	-	-	-
Tumble	-	-	-	normal	30 sec	W(5/5s)

❑ WASH PROGRAM 9: BRIGHT COLOURED WASH 30° C - ECONOMY LEVEL

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Prewash 1	2-6-3	1° 30 45 °C	EL	normal	0 min	W
Spin	-	-	-	-	30 sec	D
* Prewash 2	2-6-3	1° 30 45 °C	EL	normal	0 min	W
Spin	-	-	-	-	30 sec	D
* Main wash 1	6-5-3	1° 34 45 °C	EL	normal	20 min	W
Drain	-	-	-	-	30 sec	D
* Main wash 2	6-5-3	1° 30 45 °C	EL	normal	0 min	W
Drain	-	-	-	-	30 sec	D
* Rinse 1	2-5-6	-	EH	normal	6 min	W
Spin	-	-	-	-	1 min	D
* Rinse 2	2-5-6	-	EH	normal	6 min	W
Spin	-	-	-	-	1 min	D
* Rinse 3	1(+6 PR2)	-	EH	normal	6 min	W
* Spin	-	-	-	-	4 min	H
Slowdown	-	-	-	-	-	-
Tumble	-	-	-	normal	30 sec	W(5/5s)

❑ WASH PROGRAM A: HOT WASH 90°C - SUPER ECONOMY LEVEL

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Prewash 1	2-6-3	1° 30 45 °C	EL	normal	0 min	W
Spin	-	-	-	-	1min	L
* Prewash 2	2-6-3	1° 30 45 °C	EL	normal	0 min	W
Spin	-	-	-	-	1 min	L
* Main wash 1	5-4-3	1° 90 92 °C	EL	normal	10 min	W
Spin	-	-	-	-	1 min	L
* Main wash 2	5-4-3	1° 40 92 °C	EL	normal	0 min	W
Drain	-	-	-	-	30 sec	D
* Rinse 1	2-5-6	-	EH	normal	2 min	W
Spin	-	-	-	-	1 min	L
* Rinse 2	2-5-6	-	EH	normal	0 min	W
Spin	-	-	-	-	1 min	L
* Rinse 3	1(+6 PR2)	-	EH	normal	3 min	W
* Spin	-	-	-	-	5,5 min	H
Slowdown	-	-	-	-	-	-
Tumble	-	-	-	normal	30 sec	W(5/5s)

❑ WASH PROGRAM B: WARM WASH 60°C - SUPER ECONOMY LEVEL

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Prewash 1	2- 3	1° 30 45 °C	EL	normal	0 min	W
Spin	-	-	-	-	1 min	L
* Prewash 2	2-3	1° 30 45 °C	EL	normal	0 min	W
Spin	-	-	-	-	1 min	L
* Main wash 1	5-4-3	1° 60 92 °C	EL	normal	10 min	W
Spin	-	-	-	-	1 min	L
* Main wash 2	5-4-3	1° 40 92 °C	EL	normal	0 min	W
Drain	-	-	-	-	30 sec	D
* Rinse 1	2-5-6	-	EH	normal	2 min	W
Spin	-	-	-	-	1 min	L
* Rinse 2	2-5-6	-	EH	normal	0 min	W
Spin	-	-	-	-	1 min	L
* Rinse 3	1(+6 PR2)	-	EH	normal	3 min	W
* Spin	-	-	-	-	5,5 min	H
Slowdown	-	-	-	-	-	-
Tumble	-	-	-	normal	30 sec	W(5/5s)

❑ WASH PROGRAM C: COLOURED WASH 40°C - SUPER ECONOMY LEVEL

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Prewash 1	2- 3	1° 30 45 °C	EL	normal	0 min	W
Spin	-	-	-	-	1 min	L
* Prewash 2	2- 3	1° 30 45 °C	EL	normal	0 min	W
Spin	-	-	-	-	1 min	L
* Main wash 1	5-4-3	1° 40 92 °C	EL	normal	10 min	W
Spin	-	-	-	-	1 min	L
* Main wash 2	5-4-3	1° 40 92 °C	EH	normal	0 min	W
Drain	-	-	-	-	30 sec	D
* Rinse 1	2-5-6	-	EH	normal	2 min	W
Spin	-	-	-	-	1 min	L
* Rinse 2	2-5-6	-	EH	normal	0 min	W
Spin	-	-	-	-	1 min	L
* Rinse 3	1(+6 PR2)	-	EH	normal	3 min	W
* Spin	-	-	-	-	5,5 min	H
Slowdown	-	-	-	-	-	-
Tumble	-	-	-	normal	30 sec	W(5/5s)

❑ WASH PROGRAM D: BRIGHT COLOURED WASH 30° C - SUPER ECONOMY LEVEL

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Prewash 1	6	1° 1 [1] °C	Flush	normal	0 min	W
Spin	-	-	-	-	1.5 min	L
* Prewash 2	2- 3	1° 30 [45] °C	EL	normal	0 min	W
Spin	-	-	-	-	1 min	L
* Main wash 1	5-4-3	1° 30 [92] °C	EL	normal	8 min	W
Drain	-	-	-	-	1 min	D
* Main wash 2	5-4-3	1° 40 [92] °C	EL	normal	0 min	W
Drain	-	-	-	-	30 sec	D
* Rinse 1	2-5-6	-	EH	normal	2 min	W
Drain	-	-	-	-	1 min	D
* Rinse 2	2-5-6	-	EH	normal	0 min	W
Spin	-	-	-	-	1 min	L
* Rinse 3	1(+6 PR2)	-	EH	normal	3 min	W
* Spin	-	-	-	-	4 min	H
Slowdown	-	-	-	-	-	-
Tumble	-	-	-	normal	30 sec	W(5/5s)

❑ WASH PROGRAM E: EXTRACTION - LOW SPEED

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Prewash 1	6	1° 1 [1] °C	Flush	normal	0 min	W
Spin	-	-	-	-	1.5 min	L
* Prewash 2	2- 3	1° 30 [45] °C	NL	normal	0 min	W
Spin	-	-	-	-	1 min	L
* Main wash 1	5-4-3	1° 73 [92] °C	NL	normal	0 min	W
Drain	-	-	-	-	30 sec	D
* Main wash 2	5-4-3	1° 40 [92] °C	NL	normal	0 min	W
Drain	-	-	-	-	30 sec	D
* Rinse 1	2-5-6	-	NH	normal	0 min	W
Spin	-	-	-	-	1.5 min	L
* Rinse 2	2-5-6	-	NH	normal	3 min	W
Spin	-	-	-	-	5.5 min	L
* Rinse 3	1(+6 PR2)	-	NL	normal	0 min	W
* Spin	-	-	-	-	5,5 min	H
Slowdown	-	-	-	-	-	-
Tumble	-	-	-	normal	30 sec	W(5/5s)

❑ WASH PROGRAM F: EXTRACTION - HIGH SPEED

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Prewash 1	6	1° 1 [1] °C	Flush	normal	0 min	W
Spin	-	-	-	-	1.5 min	L
* Prewash 2	2- 3	1° 30 [45] °C	NL	normal	0 min	W
Spin	-	-	-	-	1 min	L
* Main wash 1	5-4-3	1° 90 [92] °C	NL	normal	0 min	W
Drain	-	-	-	-	30 sec	D
* Main wash 2	5-4-3	1° 40 [92] °C	NL	normal	0 min	W
Drain	-	-	-	-	30 sec	D
* Rinse 1	2-5-6	-	NH	normal	0 min	W
Spin	-	-	-	-	1.5 min	L
* Rinse 2	2-5-6	-	NH	normal	0 min	W
Spin	-	-	-	-	1.5 min	L
* Rinse 3	1(+6 PR2)	-	NL	normal	3 min	W
* Spin	-	-	-	-	5,5 min	H
Slowdown	-	-	-	-	-	-
Tumble	-	-	-	normal	30 sec	W(5/5s)

6.3. WASH PROGRAM TABLES FOR PROGRAM SET US1

❑ WASH PROGRAM 1: WHITE WASH

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Prewash	2- 3	33° 104 113 °F	LL=NL	normal	3.5 min	W
Spin	-	-	E	-	1 min	L
* Main wash	4-3	140° 194 198 °F	LL=NL	normal	6 min	W
Drain	-	-	E	-	30 sec	D
* Rinse 1	2-5-6	-	HL=NH	normal	1.5 min	W
Spin	-	-	E	-	1 min	L
* Rinse 2	2-5-6	-	HL=NH	normal	1.5 min	W
Spin	-	-	E	-	1 min	L
* Rinse 3	1-6	-	HL=NL	normal	2 min	W
* Spin	-	-	E	-	5 min	H
Slowdown	-	-	E	-	30 sec	-
Tumble	-	-	E	normal	30 sec	W

❑ WASH PROGRAM 2: COLOURED WASH

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Prewash	2- 3	33° 104 113 °F	LL=NL	normal	3.5 min	W
Spin	-	-	E	-	1 min	L
* Main wash	4-5-3	33° 140 198 °F	LL=NL	normal	6 min	W
Drain	-	-	E	-	30 sec	D
* Rinse 1	2-5-6	-	HL=NH	normal	1.5 min	W
Spin	-	-	E	-	1 min	L
* Rinse 2	2-5-6	-	HL=NH	normal	1.5 min	W
Spin	-	-	E	-	1 min	L
* Rinse 3	1-6	-	HL=NL	normal	2 min	W
* Spin	-	-	E	-	5 min	H
Slowdown	-	-	E	-	30 sec	-
Tumble	-	-	E	normal	30 sec	W

❑ WASH PROGRAM 3: BRIGHT COLOURS

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Prewash	2-6	-	LL=NL	normal	3.5 min	W
Spin	-	-	E	-	1 min	L
* Main wash	5-6	-	LL=NL	normal	6 min	W
Drain	-	-	E	-	30 sec	D
* Rinse 1	2-5-6	-	HL=NH	normal	1.5 min	W
Spin	-	-	E	-	1 min	L
* Rinse 2	2-5-6	-	HL=NH	normal	1.5 min	W
Spin	-	-	E	-	1 min	L
* Rinse 3	1-6	-	HL=NL	normal	2 min	W
* Spin	-	-	E	-	5 min	H
Slowdown	-	-	E	-	30 sec	-
Tumble	-	-	E	normal	30 sec	W

❑ WASH PROGRAM 4 : NYLON

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Main wash	5-3	33° 104 113 °F	LL=NL	normal	6.5 min	W
Drain	-	-	E	-	30 sec	D
* Rinse 1	2-5-6	-	HL=NH	normal	1.5 min	W
Drain	-	-	E	-	30 sec	D
* Rinse 2	2-5-6	-	HL=NH	normal	1.5 min	W
Drain	-	-	E	-	30 sec	D
* Rinse 3	1-6	-	HL=NL	normal	2 min	W
* Spin	-	-	E	-	4 min	H
Slowdown	-	-	E	-	30 sec	-
Tumble	-	-	E	normal	30 sec	W

❑ WASH PROGRAM 5: DELICAT WASH

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Main wash	5-6	-	HL=NH	gentle	6.5 min	W
Drain	-	-	E	-	30 sec	D
* Rinse 1	2-5-6	-	HL=NH	normal	1.5 min	W
Drain	-	-	E	-	30 sec	D
* Rinse 2	2-5-6	-	HL=NH	normal	1.5 min	W
Drain	-	-	E	-	30 sec	D
* Rinse 3	1-6	-	HL=NL	normal	2 min	W
* Spin	-	-	E	-	3 min	H
Slowdown	-	-	E	-	30 sec	-
Tumble	-	-	E	gentle	30 sec	W

❑ WASH PROGRAM 6: SLIGHTLY SOILED WHITE WASH

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Prewash	2- 3	33° 104 113 °F	LL=NL	normal	3 min	W
Drain	-	-	E	-	30 sec	D
* Main wash	4-3	140° 194 198 °F	LL=NL	normal	5 min	W
Spin	-	-	E	-	1 min	L
* Rinse 1	2-5-6	-	HL=NH	normal	2 min	W
Spin	-	-	E	-	1 min	L
* Rinse 2	2-5-6	-	HL=NH	normal	2 min	W
Spin	-	-	E	-	1 min	L
* Rinse 3	1-6	-	HL=NL	normal	3 min	W
* Spin	-	-	E	-	4.5 min	H
Slowdown	-	-	E	-	30 sec	-
Tumble	-	-	E	normal	30 sec	W

❑ WASH PROGRAM 7: SLIGHTLY SOILED COLOURED WASH

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Prewash	2-6	-	HL=NH	normal	3 min	W
Spin	-	-	E	-	1 min	L
* Main wash	4-3-5	33° 140 198 °F	LL=NL	normal	7 min	W
Spin	-	-	E	-	1 min	L
* Rinse 1	2-5-6	-	HL=NH	normal	2 min	W
Spin	-	-	E	-	1 min	L
* Rinse 2	2-5-6	-	HL=NH	normal	2 min	W
Spin	-	-	E	-	1 min	L
* Rinse 3	1-6	-	HL=NL	normal	3 min	W
* Spin	-	-	E	-	3.5 min	H
Slowdown	-	-	E	-	30 sec	-
Tumble	-	-	E	normal	30 sec	W

❑ WASH PROGRAM 8: BADLY SOILED WHITE WASH

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Prewash 1	2- 3	33° 104 113 °F	LL=NL	normal	6 min	W
Drain	-	-	E	-	30 sec	D
* Prewash 2	4-3	140° 194 198 °F	LL=NL	normal	6 min	W
Drain	-	-	E	-	30 sec	D
* Main wash	4-3	140° 194 198 °F	LL=NL	normal	6 min	W
Spin	-	-	E	-	1 min	L
* Rinse 1	2-5-6	-	HL=NH	normal	2 min	W
Spin	-	-	E	-	1 min	L
* Rinse 2	2-5-6	-	HL=NH	normal	2 min	W
Spin	-	-	E	-	1 min	L
* Rinse 3	1-6	-	HL=NL	normal	3 min	W
* Spin	-	-	E	-	4.5 min	H
Slowdown	-	-	E	-	30 sec	-
Tumble	-	-	E	normal	30 sec	W

PROGRAM SET: US1

❑ WASH PROGRAM 9: BADLY SOILED COLOURED WASH

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Prewash	2- 3	33° 104 113 °F	LL=NL	normal	6 min	W
Spin	-	-	E	-	1 min	L
* Main wash	5-4-3	33° 140 198 °F	LL=NL	normal	6 min	W
Spin	-	-	E	-	1 min	L
* Rinse 1	2-5-6	-	HL=NH	normal	2 min	W
Spin	-	-	E	-	1 min	L
* Rinse 2	2-5-6	-	HL=NH	normal	2 min	W
Spin	-	-	E	-	1 min	L
* Rinse 3	1-3	-	HL=NL	normal	3 min	W
* Spin	-	-	E	-	3.5 min	H
Slowdown	-	-	E	-	30 sec	-
Tumble	-	-	E	normal	30 sec	W

❑ WASH PROGRAM A: BADLY SOILED NYLON

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Prewash	2- 3	33° 104 113 °F	LL=NL	normal	3 min	W
Drain	-	-	E	-	30 sec	D
* Main wash	5-4-3	33° 140 198 °F	LL=NL	normal	6 min	W
Drain	-	-	E	-	30 sec	D
* Rinse 1	2-5-6	-	HL=NH	normal	3 min	W
Drain	-	-	E	-	30 sec	D
* Rinse 2	2-5-6	-	HL=NH	normal	2 min	W
Spin	-	-	E	-	1 min	L
* Rinse 3	1-3	-	HL=NL	normal	3 min	W
* Spin	-	-	E	-	1 min	L
Slowdown	-	-	E	-	30 sec	-
Tumble	-	-	E	normal	30 sec	W

❑ WASH PROGRAM B: GENTLE WASH ACTION

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Main wash	5-6	-	LL=NL	gentle	8 min	W
Spin	-	-	E	-	1 min	L
* Rinse 1	2-5-6	-	HL=NH	gentle	2 min	W
Drain	-	-	E	-	30 sec	D
* Rinse 2	2-5-6	-	HL=NH	gentle	2 min	W
Drain	-	-	E	-	30 sec	D
* Rinse 3	1-6	-	HL=NL	gentle	3 min	W
* Spin	-	-	E	-	2.5 min	L
Slowdown	-	-	E	-	30 sec	-
Tumble	-	-	E	gentle	30 sec	W

❑ WASH PROGRAM C: TREATMENT FOR STAINS

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Prewash 1	2- 3	33° 104 113 °F	HL=NH	normal	3 min	W
Drain	-	-	E	-	30 sec	D
* Prewash 2	4-3	140° 194 198 °F	LL=NL	normal	6 min	W
Drain	-	-	E	-	30 sec	D
* Main wash	4-3	140° 194 198 °F	HL=NH	normal	6 min	W
Spin	-	-	E	-	1 min	L
* Rinse 1	2-6-3-4	-	HL=NH	normal	2 min	W
Spin	-	-	E	-	1 min	L
* Rinse 2	2-6-3-4	-	HL=NH	normal	2 min	W
Drain	-	-	E	-	30 sec	D
* Rinse 3	1-3	-	HL=NL	normal	3 min	W
* Spin	-	-	E	-	4.5 min	H
Slowdown	-	-	E	-	30 sec	-
Tumble	-	-	E	normal	30 sec	W

❑ WASH PROGRAM D: BADLY SOILED WASH - FLUSH

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Prewash 1	2- 3	33° 104 113 °F	Flush	normal	3 min	W
Drain	-	-	E	-	2 min	D
* Prewash 2	4-3	140° 194 198 °F	LL=NL	normal	6 min	W
Spin	-	-	E	-	1 min	L
* Main wash 1	4-3	140° 194 198 °F	LL=NL	normal	6 min	W
Spin	-	-	E	-	1 min	L
* Main wash 2	4-3	140° 194 198 °F	LL=NL	normal	6 min	W
Spin	-	-	E	-	1 min	L
* Rinse 1	2-6-3-4	-	HL=NH	normal	2 min	W
Drain	-	-	E	-	30 sec	D
* Rinse 2	2-6-3-4	-	HL=NH	normal	2 min	W
Drain	-	-	E	-	30 sec	D
* Rinse 3	1-3	-	HL=NL	normal	3 min	W
* Spin	-	-	E	-	4.5 min	H
Slowdown	-	-	E	-	30 sec	-
Tumble	-	-	E	normal	30 sec	W

❑ WASH PROGRAM E: RINSE AND SPIN

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Rinse 3	1-3	-	HL=NH	normal	3 min	W
* Spin	-	-	E	-	1.5 min	L
Slowdown	-	-	E	-	30 sec	-
Tumble	-	-	E	normal	30 sec	W

❑ WASH PROGRAM F: STARCHED LINEN

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Prewash	2- 3	33° 104 113 °F	LL=NL	normal	6 min	W
Drain	-	-	E	-	40 sec	D
* Main wash	4-3	140° 194 198 °F	LL=NL	normal	6 min	W
Spin	-	-	E	-	1 min	L
* Rinse 1	3-4	-	HL=NH	normal	3 min	W
Spin	-	-	E	-	1 min	L
* Rinse 2	2-6-3-4	-	HL=NH	normal	2 min	W
Spin	-	-	E	-	1 min	L
* Rinse 3	1-3	-	HL=NL	normal	4 min	W
* Spin	-	-	E	-	3.5 min	H
Slowdown	-	-	E	-	30 sec	-
Tumble	-	-	E	normal	30 sec	W

7. YOUR SETTINGS

7.1. INITIAL SETTINGS

IN „S“ ROUTINE

– Machine type : ……..…..

– *only for machines without door handle:*
Pump / Drain valve : ……..

– Program set: **EU1 ☐ EU2 ☐ US1 ☐**

IN „N“ ROUTINE (not for MCB 6B)

Programs On: 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F ☐

IN „U“ ROUTINE

Coin slot values: 1: .....
2: .....

Decimal point:

☐	☐	☐

IN „C“ ROUTINE:

WASH PROGRAM	NORMAL PRICE	SPECIAL PRICE
1		
2		
3		
4		
5		
6		
7		
8		
9		
A		
B		
C		
D		
E		
F		

IN „T“ ROUTINE

– Mode: **COIN ☐OPL ☐**
– Boiler Temperature: ……..……..
– Temperature on Display: **ON ☐ OFF ☐**
– Farenheid or Celsius: **ON ☐ OFF ☐**
– Wait for Heat: **ON ☐ OFF ☐**
– Full Heating: **ON ☐ OFF ☐**
– Start Liquid Soap Level: ……..……..
– Second Drain Valve: **ON ☐ OFF ☐**
– Reset to Program 0: **ON ☐ OFF ☐**
– Cooldown: **ON ☐ OFF ☐**

IF OPL

– Advance: **ON ☐ OFF ☐**

IF COIN

– Special Prices: **ON ☐ OFF ☐**
– External Payment: **OFF ☐ REL ☐**
COM ☐ SEL ☐

8. ANNEX: NETWORKING

8.1. GENERAL

By PC software configuration of a washing machine, washing programs, copying of programs between washing machines, monitoring of washing machines network etc. can be set.

For a more detailed explanation: see manual „TRACE-TECH“.

9. ANNEX: OVERVIEW OF ERROR CODES, MESSAGES AND TROUBLESHOOTING AIDS

9.1. ERROR HANDLING

The „Easy control“ computer allows the full control of the washing machine.
When an error occurs then automatically the machine will go over to a safe state. With the diagnostic program you can determine the problem. This program will test all the functions of the washing machine.

9.2. PROBLEM CHECK LIST

Problem	Cause	Solving the problem
When the power is switched on: the display is not lighting up	• no external power	• Switch on the external power suply • verify the external tension of the machine
Remark : The display must always light up when the power connector is connected to the electronic board (EPROM with software must be implemented)	• 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 electronic board has jumped	• if the transformer is deformated replace the electronic board Check the wiring and the tension at the power Connector If the transformer is still OK change the Fuse
	• disconnect the input connector	• if the display is lighting up: verify that the input signals or the +16V signal are not touching the cabinet
	• check if the EPROM that contains the software is implemented	• if there is no EPROM implemented on the electronic board, put the right EPROM with software into the socket
Coins are inserted but the displayed program price is not counting down	• the microcontact mounted on the coindrop is not functional	• verify the well functioning of the microcontact of the coindrop • positive pulses should be generated
	• the optocoupler mounted on the coindrop is not functional	• verify the well functioning of the optocoupler, positive pulses should be generated
	• check the wiring to the coindrop	• if the wiring is broken: repair the wiring
	• verify if you have entered a coin value in the „**u**“-submenu for the corresponding coindrop	• insert the correct coin value in the „**u**“-submenu
The machine is not starting up	• the key switch stands in „setup mode“ (WDH only)	• set the Key switch to „Run mode“
	• the correct amount of coins is inserted	• the start button must be pressed when 00 is flashing on the lower display
The machine is not responding on pressing the keyboard buttons	• the key switch is not functional (no dot is displayed when switching in „setup mode“, WDH only)	• check if the input connector „A“ is well connected and check the wiring between the input connector and the keyswitch
	• the „START“ button is not functional (the key switch stands in setup mode)	• set the Key switch to „Run mode“
	• the „SET“ button is not functional (the key switch stands in „Run mode“)	• set the Key switch to „Program mode“
	• no button is functional and the key switch is in the right possition	• check if the connector „K“ of the keyboard is well connected
The dot to indicate that the software is in program mode can not be enabled or disabled	• the key switch is not functional	• check if the input connector „A“ is well connected and check the wiring between the input connector and the keyswitch
	• the infrared key is not functional *(Not for machines without door handle)*	• set the „L“menu-item Ir = On • use the key switch at a distance less then 0,1 meter and in front of the machine • check the battery (the LED of the infrared key is eluminated when the button is pressed)
The machine is not behaving as expected	• if the wrong machine type is selected the wrong outputs will be	• check if the right machine type is selected in the „S“-submenu

Problem	Cause	Solving the problem
	activated	
A program is started, but the outputs are not activated	• check if connector „R“ and „Q“ are connected • check if connector „R“ and „Q“ are not inverted	• connect the connector at the correct position • Pin „Q10“ must be supplied with 220Vac when the door is closed
Dashes are displayed and on the lower display a counter is counting down	• this is a wait state caused by a power interuption or a safety sequence at the end of the process	• wait until the counter has reached 0 • do not switch of/on the power again as you will restart the counter
Wrong water level (the water level sensor must not be calibrated)	• check if the programmed water levels in the „P“-submenu are the correct ones • check if the right machine type is selected in the „S“-submenu • you have changed the machine type but the standard water levels are not changed	• set the right water levels • select the right machine type in the „S“-submenu • the standard water levels can only be reintialised by changing the program Set in the „S“-submenu : standard wash
You want to open the door but, the process is stopped and there is still water in the drum	• you can start a new program and advance the program to the tumble sequence • if the pump isn't functional anymore and the water isn't drained in the tumble sequence	• advancing a program : turn the key switch in program-mode and press the start button When the water is drained you can open the door • you can always open the door by the mechanical override Be sure that the temperature of the water is sufficiently low (see lower display) to avoid that you get burned by the water that will escape by the door hole

9.3. ERROR MESSAGES

If a failure occurs then the computer will display a diagnostic message. The message is a number that correspond with a typical problem.

Depending if the machine is configured as a Coin or an Opl machine another error handling will occur.

The different failure messages are explained in the next paragraphs.

9.4. HOW TO HANDLE THE ERROR MESSAGES

Verify in the manual what the Error message corresponds with.

You can erase the fault message by pressing the„SET“ button (key switch in setup mode) or switching the power off/on. For safety reasons the door will not be unlocked if:

– there is still water in the drum (not for machines without door handle)
– the water temperature is above 55°C
– the drum is still turning

This is the safety procedure that the machine will fulfil each time before the door is unlocked. If at the end of the cycle the safety conditions are not fulfilled, diagnostic message **99** will be displayed.

As long as diagnostic message 99 is flashing it is impossible to open the door.

❑ OVERRULING DIAGNOSTIC MESSAGE 99:

OPL - MACHINES:

The safety can be overruled by pressing the „SET“ button (key switch in setup mode). Fault message 99 will be erased and be replaced by the original fault message. It is up to the owner to erase the original fault message.

THIS HANDLING IS NOT RECOMMENDED AND SHOULD ONLY OCCUR WITH THE NECESSARY PRECAUTION.

The original fault message can be erased by pressing the „SET“ button (key switch in setup mode).

COIN - MACHINES:

– **User:**
If somebody will recuperate it's laundry in a Laundromat he has to insert a coin and press the „SET“ button to unlock the door. (key switch in Run mode) Fault message 99 will be erased and be replaced by the original fault message. It is up to the owner to erase the original fault message.

– **Owner:**
The safety can be overruled by pressing the „SET“ button (key switch in setup mode). Fault message 99

will be erased and be replaced by the original fault message. It is up to the owner to erase the original fault message.

THIS HANDLING IS NOT RECOMMENDED AND SHOULD ONLY OCCUR WITH THE NECESSARY PRECAUTION.

The original fault message can be erased by pressing the „SET“ button (key switch in setup mode).

REMARK:
Fault message 1 and 4 can be erased by opening the door without intervention of the owner.

Depending of the failure: the machine will start a specific procedure.

WHEN SAFETY IS INVOLVED:

- Full stop + tumble: the program is stopped but will fulfil 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:

- Skip + continue: the actual cycle step is skipped and the program continuous with the next step
- Continues: the program continuous

9.5. SWITCHING OFF AND ON THE POWER

Error messages can be erased by switching off and on the power.

IMPORTANT:
FAULT 24, 25 & 35 CAN ONLY BE ERASED BY SWITCHING OFF AND ON THE POWER.

Precaution:
Fault 31 and 32 can be erased by switching off and on the power. Fault 31 and 32 indicates that the frequency inverter is not loaded with the correct parameter setting. 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.

REMARK:
FAULT 34 CAN NOT BE ERASED BY SWITCHING OFF AND ON THE POWER.

When the program starts up, the software detects immediately that all programs are blocked.
The fault can only be erased by unblocking a program.

9.6. OVERVIEW

N°	Failure message	Coin Machine	OPL Machine	Fault occurence	*WDH(C)*
99	The door can not be opened as the safety conditions are not fulfilled			end cycle	✓
1	Drain failure Not final sequence	Skip + continue	Skip + continue	Draining	✓
2	Drain failure final sequence	Skip + continue	Skip + continue	Draining last step	✓
3	Out of balance : Before spin	Skip + continue	Full stop + tumble	Start spin	✓
4	Out of balance : Normal spin	Skip + continue	Skip + continue	After 10 x tilt	✓
5	Out of balance : high spin	Full stop + safety time	Full stop + safety time	>500 or 750 RPM	✓
6	Door switch failure	Full stop + safety time	Full stop + safety time	Whole cycle	✓
7	Door solenoid switch failure	Full stop + safety time	Full stop + safety time	Whole cycle	×
8	Door lock check at start failure	Don't start	Don't start	At start up	×
9	Door lock switch closed failure	Don't start	Don't start	End cycle	×
10	Bimetal	Continue	Continue	2 min 30 sec after start cycle	×
11	Fill failure	Full stop + tumble	Full stop + tumble	While filling	✓
12	Overfill failure	Continue	Full stop + tumble	While filling	✓
13	Heating failure	Continue (Release wash timer)	Full stop + tumble	While heating	✓
14	Heating time failure	Continue (Release	Full stop + tumble	While heating	✓

N°	Failure message	Coin Machine	OPL Machine	Fault occurence	*WDH(C)*
		wash timer)			
15	To Hot	Full stop + tumble	Full stop + tumble	While heating	✓
16	Coin Blocking 1	Continue + Don't start	/	Before start up	✓
17	Coin Blocking 2	Continue + Don't start	/	Before start up	(✓)
18	TH overcurrent security	Full stop + safety time	Full stop + safety time	Motor contactor ON	×
19	M1 wash + low spin motor security	Full stop + safety time	Full stop + safety time	Motor contactor ON	×
20	M2 distribution + high spin motor security	Full stop + safety time	Full stop + safety time	Motor contactor ON	×
21	Overflow failure	Full stop + tumble	Full stop + tumble	Wash step	×
22	Flush failure	Full stop + tumble	Full stop + tumble	Flush step	×
23	Defective PCB temperature sensor	Continue	Continue	Any time	×
24	Defective level sensor	Continue + Don't start	Continue + Don't start	Before start up	✓
25	Defective temperature sensor	Continue + Don't start	Continue + Don't start	Before start up	✓
26	Undefined frequency invertor error code	Full stop + tumble	Full stop + tumble	Whole cycle	×
27	Communication fault inverter	Full stop + safety time	Full stop + safety time	Whole cycle	×
28	THT Time out	Full stop + safety time	Full stop + safety time	At spin sequence	×
29	OV3 Time out	Full stop + safety time	Full stop + safety time	At spin sequence	×
30	Alarm frequency inverter	Full stop + safety time	Full stop + safety time	Whole cycle	×
31	Initialisation fault inverter	Don't start	Don't start	At initialisation	×
32	Verification fault inverter	Don't start	Don't start	At loading parameters	×
33	Stall prevention function active	Continue	Continue	At spin sequence	×
34	All programs blocked	Don't start	Don't start	At blocking programs	×
35	Wrong software version	Don't start	Don't start	New software version	✓
36	Defective motor contactor	Fatal error : Full stop	Fatal errror : Full stop	At tumble sequence	×
37	*Door Unlock fault (only WDH(C))*	*Continue*	*Continue*	*End cycle*	✓
38	*Defective tacho (#)*	*Continue*	*Continue*	*Whole cycle*	✓
39	*Defective SR-drive (#)*	*Continue*	*Continue*	*Any time*	✓
40 - 49	Memory Errors	Full stop + safety time	Full stop + safety time	Any time	✓
50	No Network Connection	Warning	Warning	Data Transfer Networking Interupted	✓
52	PCB-EEPROM CRC failure	Don't start	Don't start	At Power Up	✓
53	PCB-EEPROM Data out of range failure	Don't start	Don't start	At Power Up	✓
54	Lock Active	Don't start	Don't start	At start up	×
55	Lock Start	Don't start	Don't start	At start up	×
60	*No reset Drive (#)*	*Continue*	*Continue*	*Whole cycle*	✓
61	*Extended speed (#)*	*Full stop + safety time*	*Full stop + safety time*	*Whole cycle*	✓
62	*Continue spin (#)*	*Full stop + safety time*	*Full stop + safety time*	*Whole cycle*	✓
68	*NO SIGNAL SPIN (#)*	*Full stop + safety time*	*Full stop + safety time*	*At spin*	✓
70 - 88	Software errors	Full stop + safety time	Full stop + safety time	Any time	✓
90	Watch dog	Reset	Reset	Any time	✓

WDH = machine without door handle *WDHC = machine without door handle & with coin selector*

(#) Only FOR RS6-RS7-RS10, WDH, WDHC MACHINES

9.7. EXPLANATION ERROR MESSAGES

For each failure message diagnostics are added.

IMPORTANT!
TECHNICAL INTERVENTION ON THE WASHING MACHINE IS ONLY FOR QUALIFIED TECHNICIANS WITH SUFFICIENT TECHNICAL KNOWLEDGE OF THE EASY CONTROL WASHING MACHINE.

❑ FAILURE 1 : DRAIN FAILURE NOT FINAL SEQUENCE

Failure 1 occurs when the electronic timer detects that the water is not drained after 3 minutes in a drain or spin step. 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: verify if the drain valve is not energised The drain valve is normal open.	If the wiring is damaged: repair the wiring
4. Check the pump *(only machines without door handle)*	*If the pump is broken : repair or replace the pump*

❑ FAILURE 2: DRAIN FAILURE FINAL SEQUENCE

Failure 2 occurs when the electronic timer detects that the water is not drained after 3 minutes in the last programmed drain or spin step. 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: verify if the drain valve is not energized The drain valve is normal open.	If the wiring is damaged: repair the wiring
4. Check the pump *(only machines without door handle)*	*If the pump is broken : repair or replace the pump*

❑ FAILURE 3 : OUT OF BALANCE BEFORE SPIN

Failure 3 occurs when the out of balance sensor is activated before the spin sequence has started.

Result: the machine will not spin

DIAGNOSE:

1. Check if the out of balance switch is broken	If the out of balance switch is broken: replace the out of balance switch
2. Check the position of the out of balance switch	If the out of balance switch is not correctly mounted: install the out of balance switch properly
3. Check the wiring: the contact of the out of balance switch is normally closed	If there is no continuity: repair the wiring

❑ FAILURE 4 : OUT OF BALANCE NORMAL SPIN

Out of balance at normal Spin will occur when a wash machine is bad loaded.
The machine will try up to 10 times to redistribute the laundry in the drum before the spin step is skipped.
This functions will protect your machine against overload and guarantees the normal lifetime of the washing machine.

DIAGNOSE:

1. Check the position of the out of balance switch	If the out of balance 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 produce less unbalance than a drum that is only filled for 1/3
3. Check the wiring if there is no bad connection The out of balance sensor is a NC contact	If there is a bad connection: repair the wiring

❑ FAILURE 5 : OUT OF BALANCE HIGH SPIN

Failure 5 occurs when the out of balance sensor is activated at high spin. This failure indicates that there will be probably a mechanical defect.

DIAGNOSE:

1. Check the position of the out of balance switch	If the out of balance 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

❑ FAILURE 6 : DOOR SWITCH FAILURE

For safety reasons : while a process is running the door lock system is scanned all the time.

If the machine detect that the „DOOR SWITCH“ is not closed anymore then the machine will immediately stop all its functions. The door will stay locked.

DIAGNOSE:

1. Check the well functioning of the „DOOR SWITCH“. The „DOOR SWITCH“ is a NO normal open contact.	If the „DOOR SWITCH“ is broken or functions not 100%: replace the door lock system
2. Check the continuity of the wiring	If the wiring is not continue: repair the wiring

❑ FAILURE 7: DOOR SOLENOID SWITCH FAILURE

For safety reasons: the door locked system is scanned all the time.
If the machine detect that the „DOOR SOLENOID SWITCH“ is not closed anymore then the machine will immediately stop all its functions. The door will stay locked.

DIAGNOSE:

1. Check the well functioning of the „DOOR SOLENOID SWITCH“. The „DOOR SOLENOID SWITCH“ is a NO open contact.	If the door switch is broken or functions not 100%: replace the door lock system
2. Check the door lock coil	If the door lock coil doesn’t function: replace the door lock coil
3. Check the mechanical functionality of the door lock	If the door lock is not functioning mechanically: replace the door lock system
4. Check the continuity of the wiring	If the wiring is not continue: repair the wiring

❑ FAILURE 8: DOOR LOCK CHECK AT START FAILURE

The washing machine will not start a new process when the door is not locked after pressing start.
The machine will try up to 5 times to lock the door.
No error message is displayed : only the failure LED + Door open LED is flashing.
When you open the door : the failure LED is erased.

– OPL version: Door LED is erased
– COIN version: Door LED is flashing to indicate that you have to close the door for starting a new program as the price has been payed

DIAGNOSE:

1. Check if the input connector A is connected	If the input connector A is not connected : connect connector A
2. Check the well functioning of the „DOOR SOLENOID SWITCH“	If the door switch is broken or functions not 100% : replace the door lock system
3. Check the door lock coil	If the door lock coil doesn't function : replace the door lock coil
4. Check the mechanical functionality of the door lock	If the door lock is not functioning mechanically : replace the door lock system
5. Check the continuity of the wiring	If the wiring is not continue : repair the wiring
6. Check the output relay that powers the door lock coil	If the relay is broken, replace the electronic board
7. Check the output relay that powers the door lock coil	If the relay is not broken, but doesn't receive a signal from the electronic board, replace the electronic board

❑ FAILURE 9: DOOR SOLENOID SWITCH CLOSED FAILURE

If within 30 sec the „DOOR SOLENOID SWITCH“ doesn't change state at the end of the cycle:
Message 9 will be displayed. At the end of the cycle the Door Lock coil is switched off and the „DOOR SOLENOID SWITCH” must open it's contact. If the contact is broken and stay closed forever, the software will give a message to inform the user that the door lock system isn't safe anymore.

DIAGNOSE:

1. Check the well functioning of the „DOOR SOLENOID SWITCH“	If the door switch is broken or functions not 100%: replace the door lock system
2. Check the door lock coil	If the door lock coil doesn't function: replace the door lock coil
3. Check the mechanical functionality of the door lock	If the door lock is not functioning mechanically: replace the door lock system
4. Check the continuity of the wiring	If the wiring is not continue: repair the wiring
5. Check the output relay that powers the door lock coil	If the relay stay closed and the relay is broken, replace the electronic board
6. Check the output relay that powers the door lock coil	If the relay is not broken, but receives a not allowed signal from the electronic board, replace the electronic board

❑ FAILURE 10: BIMETAL OR LOCKING SPRING SYSTEM

The bimetal is an extra security that the door can not be opened immediately when the power is switched off. To verify that the bimetal is not defective, the bimetal is checked each cycle. If the bimetal is defective: at the end of the program failure message 10 is displayed.

DIAGNOSE:

1. Check the bimetal	If the bimetal is defective: replace the bimetal
2. Check the mechanical functionality of the door lock.	If the door lock is not functioning mechanically: replace the door lock system
3. Check the continuity of the wiring	If the wiring is not continue: repair the wiring

❑ FAILURE 11: FILL FAILURE

Failure 11 occurs when the water level has not reached its target level in X minutes.

ATTENTION:
THE RUBBER HOSE MUST BE FIXED WITH A FASTENER ON THE ELECTRONIC SENSOR.

DIAGNOSE: (X = 10' for R6, R7, R10, F6, F7, F10 X = 15' for R16, R22, F13, F16, F22, F23 X= 20' for R35)

1. Check if the external water valves are open	If the water valves are closed: open the water inlet valves
2. Check if the water inlet valves are not blocked by dust	If the water inlet valves are blocked by dust: clean the water inlet valves or replace the water inlet valves
3. Check the coil of the water inlet valves	If the coil of the water inlet valve is broken: replace the coil or the complete inlet valve
4. Check the drain valve	If the drain valve is defective: replace the drain valve
5. 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
6. Check if the hose on the electronic sensor is air tight.	If the air tube is not air tight: replace the air tube
7. 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
8. Check the continuity of the wiring	If the wiring is not continue: repair the wiring
9. 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 electronic board
10. Check the output relay that powers inlet valves and the drain valve	If the relay does not receives a command signal, replace the electronic board

❑ FAILURE 12: OVERFILL FAILURE

If the target water level is 10 units above the target level then failure message 12 will be displayed.
The fault message will not be generated when the user is switching from a program with a high water level to a program with a low water level.

DIAGNOSE:

1. Check if the water inlet valves are broken	If the water inlet valves are broken: replace the water inlet valves
2. Check if the water pressure is not to big	Lower the water pressure
3. Check the output relays that powers the inlet valve	If the relay stay closed and the relay is broken, replace the electronic board
4. Check the output relays that powers the inlet valve	If the relay is not broken, but receives a not allowed signal from the electronic board, replace the electronic board

❑ FAILURE 13: HEATING FAILURE

If the heating resistors are not functioning : failure message 13 will be displayed.
The failure message is generated when the temperature is not raising with 3°C in 10 minutes time.

For **HE = on** : wait for heat selected => fault message 13 can occur

For **HE = oFF** : no wait for heat selected => fault message 13 will not occur

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 resistors are heating	If the heating resistors are not heating: Repair the wiring or replace the defective resistors
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 electronic board
5. Check the output relay that powers the heating contactor	If the relay is not broken, but doesn't receive a signal from the electronic board, replace the electronic board

❑ FAILURE 14: HEATING TIME FAILURE

When after 75 minutes the target temperature is not reached (for a machine set as wait for heat): Message 14 will be displayed.

DIAGNOSE:

1. Check if the heating resistors are heating	If the heating resistors are not heating: Repair the wiring or replace the defective resistors
2. Check the water temperature	If the hot water temperature is too low: increase the temperature of the hot water
3. 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 is: message 15 will be displayed.

DIAGNOSE:

1. Check the water temperature	If the temperature of the supplied hot water is to high: decrease the temperature of the hot water
2. Check if the temperature sensor is functioning	If the temperature sensor is defective: replace the temperature sensor
3. Check if the heating contactor stay closed	If the heating contactor stay closed : replace the heating contactor
4. Check the output relay that powers the heating contactor	If the relay stay closed and the relay is broken, replace the electronic board
5. Check the output relay that powers the heating contactor	If the relay is not broken, but receives a not allowed signal from the electronic board, replace the electronic board

❑ FAILURE 16: COIN BLOCKING 1

When the input for coin drop 1 is blocked for more then 5 seconds: message 16 will be displayed.

Case EP = ON.

Fault 16 will be displayed if the external start release signal is high for more then 10 seconds when the door has been opened at the end of the program.

DIAGNOSE:

1. Check the well functioning of coin drop 1	If the coin drop micro contact or optocoupler is not functioning 100% : replace the coin drop
2. Check the continuity of the wiring	If the wiring is not continue : repair the wiring

❑ FAILURE 17: COIN BLOCKING 2

When the input for coin drop 1 is blocked for more then 5 seconds : message 17 will be displayed.

DIAGNOSE:

1. Check the well functioning of coin drop 2	If the coin drop micro contact or optocoupler is not functioning 100%: replace the coin drop
2. Check the continuity of the wiring	If the wiring is not continue: repair the wiring

❑ FAILURE 18: TH OVERCURRENT SECURITY

When the motor overcurrent security has tripped the motors are switched off. The contact will be closed again automatically after some time.
It is possible that when fault 18 is generated that not the thermal overcurrent security has tripped but the thermal security of Motor 1 and 2 at the same time. The occurence of this fault is exceptional (the thermal contact is only checked when an output relay for a motor is on).

DIAGNOSE:

1. Check if the overcurrent security is open.	If the overcurrent security is open, within 15 minutes the security will close automatically. If a motor is defective: the security can go open again when you restart the washing machine. If it was only a temperature problem and the motor is not defective: the overload security will not trip again.
2. If the overcurrent security is not closing after 15 minutes.	The overcurrent motor security will be probably defective.
3. If the overcurrent security is not open	Check if both motor securities are open. If both motor securities are open then there is a major motor problem.
4. Check the continuity of the wiring	If the wiring is not continue: repair the wiring

❑ FAILURE 19: M1 WASH + LOW SPIN MOTOR SECURITY

When the motor overcurrent security has tripped the motors are switched off. The contact will be closed again automatically after some time (the thermal contact is only checked when an output relay for a motor is on).

DIAGNOSE:

1. Check if the thermal security of the wash & low spin motor is open	If the thermal security is open, within 15 minutes the security will close automatically. If a motor is defective : the security can go open again when you restart the washing machine. If it was only a temperature problem and the motor is not defective: the overload security will not trip again.
2. Check if the temperature in the cabinet of the wash machine is becoming important during a hot wash with a very long programmed wash time	While the machine is washing : the motor is heating up. When the ambient temperature is becoming important and the motor can't loose it's energie for a long period than the thermal contact can trip. Change the program or lower the ambient temperature.
3. If the thermal motor security is not closing after 15 minutes.	The thermal motor security will be probably defective.
4. Check the continuity of the wiring	If the wiring is not continue: repair the wiring

❑ FAILURE 20 : M2 DISTRIBUTION + HIGH SPIN MOTOR SECURITY

When the motor overcurrent security has tripped the motors are switched off. The contact will be closed again automatically after some time (the thermal contact is only checked when an output relay for a motor is on).

DIAGNOSE:

1. Check if the thermal security of the distribution and high spin motor is open	If the thermal security is open, within 15 minutes the security will close automatically. If a motor is defective : the security can go open again when you restart the washing machine. If it was only a temperature problem and the motor is not defective: the overload security will not trip again.
2. If the thermal motor security is not closing after 15 minutes.	The thermal motor security will be probably defective.
3. Check the continuity of the wiring	If the wiring is not continue: repair the wiring

❑ FAILURE 21: OVERFLOW FAILURE

When the water level is raising above the hole of the overflow tube: 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 inlet valve	If the relay stay closed and the relay is broken, replace the electronic board
5. Check the output relay that powers the inlet valve	If the relay is not broken, but receives a not allowed signal from the electronic board, replace the electronic board

❑ FAILURE 22: FLUSH FAILURE

When the flush function is active and the machine is loosing 7 cm water then the drain will be opened. Message 22 will be displayed.

DIAGNOSE:

1. Check if the drain valve is not loosing water	If the drain valve is defective: replace the drain valve
2. Check if the machine is not loosing water	If the machine is loosing water: replace the defective parts

❑ FAILURE 23: DEFECTIVE PCB TEMPERATURE SENSOR

The electronic board is measuring the temperature of the electronic board. This value is used as a reference to adjust the water temperature and the water level.
When the on board temperature sensor is measuring wrong then the water level and water temperature will show a value that is slightly different from the correct value. Fault 23 is only written to the log register when the power is switched off.

DIAGNOSE:

1. Check the PCB board visually	If you see some damage : replace the PCB board
2. If the fault is persistent	Replace the PCB board

❑ FAILURE 24: DEFECTIVE LEVEL SENSOR

If the level sensor is broken then fault 24 will be displayed. The fault is only generated when the machine is in standby mode and no program is active.
The fault can only be erased by switching off and on the power.

DIAGNOSE:

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

❑ FAILURE 25: DEFECTIVE TEMPERATURE SENSOR

When the temperature sensor is broken then fault 25 will be displayed. The fault is only generated when the machine is in standby mode and no program is active.
The fault can only be erased by switching off and on the power. If the fault is still active after switching on the power : fault 25 will be activated again.

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 PCB board
6. If the fault is persistent	Replace the PCB board Be sure that the problem is related to the PCB board and not to a defective temperature sensor

❑ FAILURE 26: UNDEFINED FREQUENCY INVERTER ERROR CODE

This fault should never occur. Inform the manufacturer.

❑ FAILURE 27: COMMUNICATION FAULT INVERTER

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

DIAGNOSE:

1. 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
2. Check if the inverter is energized	Measure the tension at the input of the inverter
3. Check if the fuses are still functional	If the fuses are blown up : replace the fuses
4. Check if the safety contactor is activated	If the safety contactor is broken : replace the contactor
5. Check if the connectors on both sides of the communication cable are still connected	Connect the connectors on the electronic timer board and the inverter.
6. Check if the wiring is still continue	Repair the wiring
7. Check if the output relays that activates the safety inverter contactor is functional	If the relay is broken, replace the electronic board
8. Check if the output relays that activates the safety inverter contactor is functional	If the relay is not broken, but doesn't receive a signal from the electronic board, replace the electronic board
9. Check if the correct parameters are loaded in the inverter	If the correct parameters are not loaded in the inverter, load the correct parameters

❑ FAILURE 28: THT TIME OUT

Fault 28 occurs when the software can not handle the THT fault of the frequency inverter.
This fault is a specific fault of the frequency inverter caused by an overcurrent.

DIAGNOSE:

1. Check if the correct machine type is selected in the S-submenu	If the wrong machine type is selected, enter the right machine type
2. Check if the fault is persistent	If the fault is persistent, contact the manufacturer

❑ FAILURE 29: OV3 TIME OUT

Fault 29 occurs when the software can not handle the OV3 fault of the frequency inverter. This fault is a specific fault of the frequency inverter caused by an overvoltage during deceleration.

DIAGNOSE:

1. Check if the correct machine type is selected in the S-submenu	If the wrong machine type is selected, enter the right machine type
2. Check if there was a high unbalance during extraction, which can be caused by putting only half load in the machine.	Put always a full load in the machine drum. Do not put other material than textile linen (fabrics) in the machine.
3. Check if the fault is persistent	If the fault is persistent, contact the manufacturer

❑ FAILURE 30: ALARM FREQUENCY INVERTER

Fault 30 occurs when the frequency inverter goes into alarm. Except for the THT and the OV3 fault where the timer software will reset the inverter automatically (only 1x). The active process will be interrupted immediately. On the bottom display the corresponding error message of the frequency inverter will be displayed.

DIAGNOSE:

1. Check if the correct machine type is selected in the S-submenu	If the wrong machine type is selected, enter the right machine type
2. Check the frequency inverter error list to know what happened.(See manual inverter)	If the fault is persistent, contact the manufacturer

❑ FAILURE 31: INITIALISATION FAULT INVERTER

While the parameter set of the frequency inverter is written to the EEPROM memory of the inverter and a fault occurs during this action then Fault 31 will be displayed.

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

Parameter:
P35 = 1 (external communication)
P77 = 1(disabling parameter writing)
P53 = 10 (communication interval)

If these 3 parameters have another value, it is not possible to load the parameters by the „Easy Control“ computer and a parameter copy-unit is needed.

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 of 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

The software of the electronic timer will check if the parameter settings are correct loaded. If not:

Fault 32 will be displayed. Fault message 32 can not be reset by the „SET“ button.
The fault message can be erased by switching the power off / on.
The fault message can be erased by loading the correct parameterset.

DIAGNOSE:

1. Check if the correct machine type is selected in the S-submenu	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 of the inverter (see fault 27)
4. Write the parameters once more into the inverter	If the fault is persistent, contact the manufacturer

❑ FAILURE 33: STALL PREVENTION FUNCTION

This fault number indicates that the stall prevention of the frequency inverter is functioning now and then. The fault number is not displayed at the end of the program cycle. The number is only written to the error log register. The stall prevention function will only be activated to protect the motor for overcurrent.
This fault number is an indication that there is to much laundry loaded. It is also possible that due to the laundry the drum is not balanced what will produce an extra load for the motor.

DIAGNOSE:

1. Check if the drum is not to much loaded	Enter the correct amount of laundry in the drum
2. Check if the correct machine type has been selected in the „S“- system menu	The installed parameters are related to the motor and machine type size. If a wrong machine type was selected then the stall prevention will function for the wrong motor type. Select the right machine type.
3. Check if there are mechanical parts broken	Broken parts can cause an unbalance of the drum. Replace the broken parts.

❑ FAILURE 34: ALL PROGRAM'S BLOCKED

When you are blocking and unblocking programs then it can happen that by coincidence you block all the Programs. If you block all the programs then you can't start up a program and fault message 34 is displayed. The problem can be solved by unblocking 1 program. Switching off and on the power can not erase the software fault.

DIAGNOSE:

1. Check if all the program's are blocked in the n-submenu	Select program = on in the n-submenu

❑ FAILURE 35: WRONG SOFTWARE VERSION

When a total new software that isn't downward compatible with previous software versions is loaded, then the software will detect that the old and new softwares are not compatible.
One of the standard wash program SET's (EU1, EU2 or US1) must be loaded to ensure that the electronic timer will be configured properly.

ATTENTION!
BY LOADING THE STANDARD WASHPROGRAM'S ALL THE CUSTOM SETTINGS WILL BE ERASED.

Loading the standard wash programs :

Change the selection EU1 to EU2 or EU2 to US1 or US1 to EU1. By changing the selection a new SET of wash programs will be loaded. When you don't change the setting or select the old setting again, the default washprograms will not be loaded. (dashes will appear when the data is written in to memory)

Fault message 35 can only be erased by switching the power off/on. But to ensure the good functioning of the software the standard wash program's must be loaded in the S-submenu.

❑ FAILURE 36: DEFECTIVE MOTOR CONTACTOR

Fault 36 can only occur when the overcurrent thermal protection or both motor thermal protections are opened during the tumble sequence.
For generating the faults, the inputs of the thermal contacts must be high at the start of the tumble sequence and must be low at the end of the tumble sequence.

The fault is an indication that a spin motor is still energized due to it's spin contactor that stay closed while It's output relay is off. This is a fatal error and the door will not be unlocked. The door can only be opened by switching the power off and on.

REMARK:
THE BIMETAL WILL KEEP THE DOOR LOCKED. SO YOU WILL HAVE TO WAIT UNTIL THE BIMETAL HAS COLD TO OPEN THE DOOR.

DIAGNOSE:

1. Check if the drum is still spinning	For all intervention Switch off the power
2. Check if the spin contactor is broken	If the spin contactor is broken replace the spin contactor
3. Check if an output relay for the spin motor stay closed or is broken	If the relay is broken, replace the electronic board
4. Check if the output relay for the spin motor stay closed	If the relay is not broken, but receives a not allowed signal from the electronic board, replace the electronic board
5. Check if there is no short circuit on the wiring so that the spin contactor stay on.	Repair the wiring if a short circuit is found

❑ *FAILURE 37:DOOR UNLOCK FAULT*
ONLY FOR MACHINES WITHOUT DOOR HANDLE

When the door is not unlocked by pressing the Door Unlock button on the keypad, Fault 37 will occur after 50 retries.

DIAGNOSE:

1. Check if connector K of the keypad is connected on the timer.	If connector K is not or wrong connected on the timer, put the connector on the right position
2. Check if the LED of the Door Unlock button is illuminated.	If the LED is ON : the micro contact door Locked is closed The door Unlock coil is not functional or the door lock mechanism is broken
3. Check if the LED of the Door Unlock button is not illuminated.	If the LED is OFF : Check first if connector S of the keypad is connected on the timer The micro contact door Locked is open but the mechanical door lock mechanism is blocked: check the door lock mechanism
4. If the door unlock coil is functional and the door lock mechanism is functional. Check the output relay on the electronic board	If the relay for unlocking the door is broken, replace the electronic board
5. Check if the output relay for unlocking the door stay closed	If the relay is not broken, but receives a not allowed signal from the electronic board, replace the electronic board
6. Check if there is no short circuit on the wiring so that the door unlock coil stay activated.	Repair the wiring if a short circuit is found

❑ *FAILURE 38: NO FEEDBACK SPEED SIGNAL*
ONLY FOR MACHINES WITHOUT DOOR HANDLE

Fault 38 will occur when the tacho is not sending a feedback signal to the SR-drive.

DIAGNOSE:

1. Check the communication cable	If the communication cable is broken, repair the communication cable
2. Check the SR-drive	If the SR-drive is broken, replace the SR-drive
3. Check the Motor	If the motor is broken, replace the motor
4. Check the power cable to the SR-drive and the SR-motor	If the power cable is broken, repair the power cable
5. Check the output relay that powers the SR-motor drive	If the relay is broken, replace the electronic board
6. Check the output relay that powers the SR- motor drive	If the relay is not broken, but doesn't receive a signal from the electronic board, replace the electronic board

❑ *FAILURE 39: MOTOR EXCEED TARGET SPEED*
ONLY FOR MACHINES WITHOUT DOOR HANDLE

Fault 39 will occur when the tacho is sending a feedback signal to the SR-drive when the tacho is not expected to do so.
Fault 39 will also occur when the speed exceeds more then 50 RPM above the target speed.

DIAGNOSE:

1. Check the communication cable	If the communication cable is broken, repair the communication cable
2. Check the SR-drive	If the SR-drive is broken, replace the SR-drive
3. Check the Motor	If the motor is broken, replace the motor
4. Check the Belt	If the belt is broken, replace the belt. If the belt is slipping, check the fixation of the motor and pulley and the mechanical tension of the belt (assure that no water gets on the belt).

❑ FAILURE 40-49: MEMORY ERRORS

If a memory error occurs than something is going wrong with the eeprom.

DIAGNOSE:

1. Fault 44 After just installing new software, fault 44 can be ignored	This fault can be found in the error log after implementing an EPROM with new software As the new installed software will have another memory size this fault is generated.
2. If a memory error occurs	Check if the fault is persistent
3. If the fault is persistent, reload the standard wash programs (EU1, EU2, US1)	If the fault is still persistent, change the electronic board

❑ FAILURE 50: NO NETWORK CONNECTION

Failure 50 occurs when there is No Network Connection available anymore. Fore more information about the Networking see „Manual PC-Networking“. Do NOT switch Off the power of the washing machine while data is written into the EEPROM of the wash computer. You have to load the program's once more if Failure 50 has occurred.

DIAGNOSE:

1. Check the network cable.	If the network cable is broken, replace the network cable.
2. Check the RS232-RS485 converter	If the converter is out of order, replace it.

❑ FAILURE 51: HEATING FAILURE 2 PROGRAMSET DA1 ONLY

If the heating system is functioning partially but not sufficient too heat the machine correctly : failure message 51 will be displayed.
The message is generated when the temperature is not raising with 7°C in 10 minutes time.

DIAGNOSE:

1. Check if the heating resistors are heating	If the heating resistors are not heating: Repair the wiring or replace the defective resistors
2. Check the water temperature	If the hot water temperature is too low: increase the temperature of the hot water
3. Check if the temperature sensor is functioning	If the temperature sensor is defective : replace the temperature sensor

❑ FAILURE 52: PCB-EEPROM CRC FAILURE

At Power-up the wash computer checks if the factory settings in the EEPROM memory are still ok.
(Wrong CRC reading data from EEPROM)
Wash computer to be reset at manufacturer by Factory Test validation procedure.

❑ FAILURE 53: PCB-EEPROM DATA OUT OF RANGE FAILURE

At Power-up the wash computer checks if the factory settings in the EEPROM memory are still ok.
(Data out of range reading data from EEPROM)
Wash computer to be reset at manufacturer by Factory Test validation procedure.

❑ FAILURE 54: LOCK ACTIVE

Fault 54 occurs when at standby the door lock is locked nevertheless the door is open.
Before further usage of washing machine, door lock must be unlocked first by technical intervention.

DIAGNOSE:

1. Check correct functioning of the door lock system.	If door lock system is broken repair door lock system.

❑ FAILURE 55: LOCK START

Fault 55 occurs when at startup the door lock is locked nevertheless the door is open.

Before further usage of washing machine, door lock must be unlocked first by technical intervention.

DIAGNOSE:

1. Check correct functioning of the door lock system.	If door lock system is broken repair door lock system.

❑ *FAILURE 68: NO SIGNAL SPIN*

ONLY FOR RS6-RS7-RS10, WDH, WDHC MACHINES

Fault 68 will occur when there is no feedback signal from the Motor Drive at the spin sequence. Probably this also means that the drum is not turning.

DIAGNOSE:

1. Check the communication cable	If the communication cable is broken, repair the communication cable
2. Check the SR-drive	If the SR-drive is broken, replace the SR-drive
3. Check the Motor	If the motor is broken, replace the motor
4. Check the power cable to the SR-drive and the SR-motor	If the power cable is broken, repair the power cable
5. Check the output relay that powers the SR-motor drive	If the relay is broken, replace the electronic board
6. Check the contactor power supply motor drive. (contactor is not available on all machine types)	If the relay is not broken, replace the contactor

❑ FAILURE 70-88: SOFTWARE ERRORS

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

❑ FAILURE 90: WATCH DOG

If the watch dog has been activated, message 90 is logged in the Error log register. If this occurs often, take contact with a technician.

❑ FAILURE 99: SAFETY ERROR

When Error 99 occurs this is a main error message to prevent that the door can be opened.

On the lower display instead of Err, the temperature value is displayed.

Causes :

* If at the end of the wash cycle :
  - if there is still water in the tub, it's not allowed to open the door.
  - if the temperature in the tub is too hot (water ?), it's not allowed to open the door.

  If the problem disappears also Error 99 will disappear and the door can be opened.
* If there is a problem with the door lock system during the wash-spin cycle :
  - the wash-spin cycle is interrupted at once and the machine will keep the door locked.
  - Error 99 can only be removed by manual intervention (keyswitch in setup mode and pressing the **SET** button). As a result a new error number that corresponds with the door lock problem will be displayed. The door will only be unlocked after manual intervention.

⚠ **ATTENTION!**

BEFORE EACH INTERVENTION WAIT UNTIL THE TEMERATURE HAS REACHED A SAFE VALUE!

DIAGNOSE:

Check the Diagnoses like for error messages 2, 6,7 and 25.

❑ FAILURE 100-140: MITSUBISHI ERRORS

100 ErrOC1	106 ErrTHT	112 ErrOHT	118 E.6	124 OP2	130 MB3	136 OSD
101 ErrOC2	107 ErrTHM	113 ErrOPT	119 E.7	125 OP3	131 MB4	137 ECT
102 ErrOC3	108 ErrFAN	114 ErrPE	120 IPF	126 CTE	132 MB5	138 E.1
103 ErrOV1	109 ErrOLT	115 ErrPUE	121 UVT	127 P24	133 MB6	139 E.2
104 ErrOV2	110 ErrBE	116 ErrRET	122 LF	128 MB1	134 MB7	140 E.3
105 ErrOV3	111 ErrGF	117 ErrCPU	123 OP1	129 MB2	135 FIN	

DIAGNOSE FOR FAILURE 100-101-102: OC-ERRORS

1. Check if there is no short circuit on the output of the inverter. (loose wire of motor cable,…)	Repair the short circuit.
2. Check if there is no short circuit in the Terminal Box of the motor. (loose wire of the motor cable, screws or other metal pieces who can move inside the terminal box.)	Repair the short circuit. Make sure the screws are sufficiently tightened.

DIAGNOSE FOR FAILURE 103-104-105: OV-ERRORS

If there is too much regenerative energy coming from the motor (working as a generator) to the inverter, the voltage on the capacitors will become too high and the inverter goes into OV-alarm state.

1. Check if the correct machine type is selected in the S-Menu.	If the wrong machine type is selected, enter the right machine type
2. Check if there was a high unbalance during extraction, which can be caused by putting only half load in the machine.	Put always a full load in the machine drum. Do not put other material than textile linen (fabrics) in the machine.
3. Check if the fault is persistent	If the fault is persistent, contact the manufacturer

DIAGNOSE FOR FAILURE 106: THT-ERROR

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 correct machine type is selected in the S-Menu.	If the wrong machine type is selected, enter the right machine type.
4. Check if the correct parameters have been loaded in the inverter.	If the correct parameters are not loaded in the inverter, load the correct parameters.

DIAGNOSE FOR FAILURE 107: THM-ERROR

If the motor current is higher than allowed for a longer time, the inverter will active 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. (no abnormal high friction)	Repair / clean what is necessary.
2. Check if the correct machine type is selected in the S-Menu.	If the wrong machine type is selected, enter the right machine type.
3. Check if the correct parameters have been loaded in the inverter.	If the correct parameters are not loaded in the inverter, load the correct parameters.
4. Check if the fault is persistent.	If the fault is persistent, contact the manufacturer.

DIAGNOSE FOR FAILURE 113: OPT-ERROR
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-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-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 FOR FAILURE 135: FIN-ERROR
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 60-62, 145-157, 160-180 : WDH & WDHC MOTOR DRIVE ERRORS

60, 150, 151, 155	See Error 38	(reset drive)
61, 148	See Error 39	(Continue spin)
62, 147, 156, 157	See Error 39	(Extended speed)
145, 146	See Error 39	(EndCycle)
160,161, … , 180	No diagnostic	(Sequence Occurrence)

9.8. DIAGNOSTIC HELP PROGRAM

ATTENTION!
CLEAR THE ERROR LOG LIST FIRST. SEE E-SUBMENU IN THE CONFIGURATION MENU.

1. Select the H-submenu at the configuration menu.
2. Switch the menu-item H from „oFF“ to „on“.
3. Leave the H-menu.
4. Start the Diagnostic Help Program:
   - OPL machine: press the start button
   - Coin machine: insert the correct amount of coins and press the start button
5. Once the program is started, you can advance the program by the Start button.

Middle display: Step number diagnostic program (see first column table 9.8.)
Lower display: Info message diagnostic program (see second column table 9.8.)

TEST SEQUENCE:

– Display test and door lock test
– Sensor test
– Motor test
– Water fill, heating and drain test
– Basic Diagnostic Wash Program

ERROR MESSAGES:

– if the computer meets some problem during the Diagnostic Help Program, a diagnostic error message is generated
– check also the Error Log List at the E-menu
– check the error handling and explanation of the error messages in the installation manual or the annex of the programming manual

❑ DIAGNOSTIC SEQUENCE

Step	Info	Explanation
1	LEDS are tested 1 by 1	➜ Door lock test (locks and unlocks 5 x the door) ➜ Display test
2	None	➜ Sensor test (all wash machine sensors are tested)
3	rev (reverse)	➜ Wash speed, reverse direction (opposite spin direction)
4	STO (stop)	⇒ standstill motor
5	For (forward)	➜ Wash speed, forward direction (same as spin direction)
6	dIS (distribution)	➜ Distribution speed, clockwise direction
7	Lou (low)	➜ Low spin speed, clockwise direction
8	hig (high)	➜ High spin speed, clockwise direction
9		⇒ free run motor
20	I1 (inlet 1) temperature value	➜ open inlet 1 ➜ heating activated
21	dod (drain valve)	➜ open Drain valve
22	I2 (inlet 2)	➜ open inlet 2
23	dod (drain valve)	➜ open Drain valve
24	I3 (inlet 3)	➜ open inlet 3
25	dod (drain valve)	➜ open Drain valve
26	I4 (inlet 4)	➜ open inlet 4
27	dod (drain valve)	➜ open Drain valve
28	I5 (inlet 5)	➜ open inlet 5
29	dod (drain valve)	➜ open Drain valve
30	I6 (inlet 6)	➜ open inlet 6
31	dod (drain valve)	➜ open Drain valve
32 - 34		⇒ tumble sequence
0		⇒ End of the sequence

Tab. 9.8.

When 0 is displayed at the end of the Diagnostic Sequence:

- Open the door to finish the Diagnostics, or
- Press the Start Button to Start the Basic Diagnostic Wash Program.

❑ BASIC DIAGNOSTIC WASH PROGRAM

	Inlet	Temp.	Level	Wash action	Time	R.P.M
* Main wash	3-4-5	40 °C	LL=NL	normal	6 min	W
Drain	-	-	E	-	30 sec	D
* Rinse 1	2-5-6	-	HL=NH	normal	1.5 min	W
Spin	-	-	E	-	1 min	L
* Rinse 3	1(+6 EU2)	-	HL=NL	normal	2 min	W
* Spin	-	-	E	-	4,5 min	H
Slowdown	-	-	E	-	30 sec	-
Tumble	-	-	E	normal	30 sec	W

9.9. RS6-RS7-RS10, WDH, WDHC *MACHINES RELATED PROBLEMS*

Problem	Cause	Solving the problem
The drum is spinning at 60 rpm	• *the communication cable is not connected (if the communication cable is not connected then the motor will start spinning)*	• *verify if the communication cable is well connected*
The motor is spinning at 200 rpm	• *the belt is broken (when the belt is broken, the load is so small that the motor starts spinning at 200 RPM)*	• *change the motor belt.* *Error message 39 will be generated*
The motor is shaking	• *the connector of the tacho is inverted* • *the pins of the communication cable are not well connected*	• *verify if the connector of the tacho is well connected* • *make that the pins of the communication cable are at the right position and are making contact*
The drum is not able to spin more then 500-600 RPM with a fully loaded drum	• *1 phase is missing*	• *verify if the connector of motor supply is well connected*
The belt is slipping	• *Check if the belt is wet*	• *Make sure that no water gets on the belt*

10. ANNEX

10.1. ELECTRONIC COIN SELECTOR

Electronic Coin Selector Type EMP 500.12 v4.

Only the Electronic Coin Selectors as specified by the manufacturer can be used on the washing machines of the manufacturer.

Reason : the electronic coin selector is preset with coin values and output pulse lengths specific to operate with the wash computer.

The coin selector has 2 outputs signals.

Signal 1 (top wire) corresponds with first group of coins.

Signal 2 (bottom wire) corresponds with second group of coins.

Coins are only accepted by the Electronic Coin Selector when the device works with the right power supply.

By 16 dipswitches it is possible to customize the Electronic Coin Selector.

Default all dipswitches are in Off position. (bottom)

It is possible to block a group of coins.

Dipswitch 14 = On, coins group 1 is blocked.

Dipswitch 13 = On, coins group 2 is blocked.

The electronic coin selector is capable of accepting or blocking coins. If the electronic coin selector is accepting invalid coins (foreign coins), the tolerances can be narrowed. Valid coins may be occasionally rejected, but they will be returned to the customer.

Example :

Dipswitch for wide tolerance = On : "Medium" tolerance is selected.

Block coin completely : "Wide", "Medium" & "Narrow" tolerance dipswitches = On.

IMPORTANT!

MACHINE TYPE:	
PROGRAMMER: ELECTRONIC TIMER EASY CONTROL	
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: