Washer-Extractors

Control

Refer to Page 10 for Model Identification

Programming

Original Instructions

Keep These Instructions for Future Reference.

CAUTION: Read the instructions before using the machine.

(If this machine changes ownership, this manual must accompany machine.)

Alliance™ Laundry Systems

www.alliancelaundry.com

Part No. D1632ENR13
September 2022

Table of Contents

Safety Information 10
Important Safety Instructions 10

Introduction 11
Model Identification 11
Machine Type in Configuration Menu 16

Control Identification 18
Symbol Used 18
Main Menu 24

Basic Description of Controls 25
General 25
Specific 25
How to Get into the Setup Mode 26
99 Wash Programs - 99 Steps 27
Available Wash Sequences 28
The Creation of a Wash Program 28
Top Soap Dispenser and Front (or Side) Soap Dispenser 28
Programming the Wash Sequence 28
Programming the Drain Sequence 28
The Tumble Sequence 28
Programming the Functions 29
Programming the Water Temperature 29
Programming the Water Inlets Valves 29
Top Soap Dispenser Machines 29
Programming the Water Inlet Valves for Cabinet Hardmount 52 kg / 120 lb / 520 L Machine 29
Front or Side Soap Dispenser Washing Machines 30
Programming the Water Level 30
Cabinet Freestanding 6.5-28 kg / 14-70 lb / 65-280 L 31
Cabinet Freestanding 35-60 kg / 350-600 L 32
Cabinet Freestanding 33-120 kg / 75-275 lb / 335-1200 L 35
Cabinet Hardmount 7.5-52 kg / 20-120 lb / 80-520 L 38
Hygienic Barrier 18-28 kg / 40-65 lb / 180-280 L 41
Barrier Machines 36-70 kg / 360-700L 42
Programmable Water Level 44
Speed of Machines with Frequency Inverter 45
Programming the Wash Speed 48
Programming Extraction Speed 48

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Programming Supplies 48
Programming the Motor On and Off Times for Reversing 48
Programming the Sequence Time 48
Signal 49

Initializing the Machine 50
Initialization Menu 50
Configuration Menu 54
Passwords 55
Advanced Menu 60
Hygienic Cycle Menu 60
Program Mode Lock Menu 61
Program Lock Menu 62
Traceability Menu 63
Weighing Menu 64
Tilting System 65
Data EXPORT / IMPORT 65
Special 66

Programming 68
General 68
Step 1: Program Menu 68
Step 2: Program Functions 68
Step 3: Program Step Function 69
Step 4: Programming the Wash Part 71
Selecting the Wash Part 71
The Prewash Sequence 72
The Wash Sequence 73
The Cooldown Sequence 75
The Rinse Sequence 76
The Final Rinse Sequence 77
The Soak Sequence 79
The Spray Sequence 80
The No Wash Sequence 81
Step 5: Programming the Drain Step 81
Selecting the Drain / Extraction Step 81
The Drain Sequence 81
The Extract Sequence 82
The No Drain Sequence 83
The Static Drain Sequence 83
The Reversing Drain Sequence 83

Operation Menu 85
Starting Up 85
Switching On the Power 85
Load the Washing Machine 85

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Put Soap into the Soap Dispenser 85
Starting a Wash Program 85
Programming a Delay Time 85
The Active Program 86
Advancing a Wash Program 86
Wash Time 86
Program End 86
Water Fill Process 87
Heating Process 87
Cooldown Function 87
Spray Function 87
Unbalance 87
Adding Detergents 87
Stop 87
Open Soap Box 87
Wait State 88
How to Handle Failure Messages 88
How to Handle Power Interruptions 88
Special Function Buttons 88
External Liquid Soap Boxes 89
Automatic Weighing System (Optiload) 89
System with Manual Entering of the Linen Weight (SMART LOAD) 89

Pre-programmed Programs 91
Water Inlets (Valves) Information 91
Wash Program Legend Water Levels 92
Wash Actions 92
RPM (Revolutions per Minute) 92
Wash Programs for Washing Machines with Top Soap Dispenser 92
Hot Wash Intensive 194°F 90°C 92
Warm Wash Intensive 140°F 60°C 93
Colored Wash Intensive 104°F 40°C 95
Bright Wash Intensive 86°F 30°C 95
Woolens 59°F 15°C 96
Hot Wash 194°F 90°C 97
Warm Wash 140°F 60°C 98
Colored Wash 104°F 40°C 99
Bright Wash 86°F 30°C 100
Eco Hot Wash 194°F 90°C 100
Eco Warm Wash 140°F 60°C 101
Eco Color Wash 104°F 40°C 102
Eco Bright Wash 86°F 30°C 103
Extraction - Low Speed 103
Extraction - High Speed 104
Sport 140°F 60°C 104
Mops 140°F 60°C 105
Horse Cloths 104°F 40°C 106

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Jeans 140°F 60°C 107
Starching 108
Wash Programs for Washing Machines with Front Soap Dispenser 109
Hot Wash 194°F 90°C 109
Warm Wash 140°F 60°C 109
Colored Wash 104°F 40°C 110
Bright Colored Wash 86°F 30°C 111
Woolens 59°F 15°C 112
Eco Hot Wash 194°F 90°C 112
Eco Warm Wash 140°F 60°C 113
Eco Colored Wash 104°F 40°C 114
Eco Bright Colored Wash 86°F 30°C 114
Super Eco Hot Wash 194°F 90°C 115
Super Eco Warm Wash 140°F 60°C 115
Super Eco Color Wash 104°F 40°C 116
Super Eco Bright Color Wash 86°F 30°C 117
Extraction - Low Speed 117
Extraction - High Speed 118
Sport 140°F 60°C 118
Mops 140°F 60°C 119
Horse Cloths 104°F 40°C 119
Jeans 140°F 60°C 121
Starching 121
Wash Programs for Wet Cleaning 121
Wash Program 21: Wool Regular 123
Wash Program 22: Wool Delicate 124
Wash Program 23: Silk Regular 125
Wash Program 24: Silk Delicate 126
Wash Program 25: All in One Regular 126
Wash Program 26: All in One Delicate 127
Wash Program 27: Rinse Drum 128
Wash Program 28: Sanitation 128
Wash Program 29: Spin Modest 129
Wash Program 30: Spin Delicate 129
Wash Program 31: Rinse Modest 129
Wash Program 32: Rinse Low 130
Wash Program 33: Spin High 130
Wash Program 34: Spin Medium 130
Wash Program 35: Rinse with Condit. 131
Wash Program 36: All in One Reg + ... 131
Wash Program 37: Wedding Gowns 132
Wash Program 38: Wool Blanket 132
Wash Program 51: Wool 50% Regular 133
Wash Program 52: Wool 50% Delicate 134
Wash Program 53: Silk 50% Regular 135
Wash Program 54: Silk 50% Delicate 136
Wash Program 55: AIO 50% Regular 136

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Wash Program 56: AIO 50% Delicate 137

Troubleshooting 138
Display Messages 138
Fault Messages 138
How to Handle Fault Messages 138
Failure Message Overview 140
Service Menu 143
Faults Menu (Service Faults) 144
Toolbox Menu 144
Diagnostic Program 146
Test Sequence 146
Basic Diagnostic Wash Program 149
Troubleshooting 149
External Communication Problems 149
Error Message Descriptions 150
Failure 2: Drain Failure 150
Failure 3: Safety Switch Activated 150
Failure 4: The Linen is Not Correctly Distributed in the Stage when the Machine Starts Up the Spinning Sequence 150
Failure 5: Safety Switch Activated at High Revolutions 151
Failure 6: Door Lock Closing Switch Failure 151
Failure 7: Failure of Door Lock Closing 151
Failure 8: Door Lock Closing Failure in the Beginning of Cycle 151
Failure 9: Failure of Door Lock Opening at the End of Cycle 152
Failure 11: Fill Failure 152
Failure 12: Overfill Failure 153
Failure 13: Heating Failure 153
Failure 14: Heating Time Failure 153
Failure 15: Too Hot 153
Failure 18: Failure of Door Lock Closing 154
Failure 19: Door Lock Closing Failure in the Beginning of Cycle 154
Failure 21: Overflow Failure 155
Failure 24: Defective Level Sensor 155
Failure 25: Defective Temperature Sensor 155
Failure 26: Undefined Mitsubishi Frequency Inverter Error Code 155
Failure 27: Communication Fault Inverter 155
Failure 28: THT (Mitsubishi) Time Out 156
Failure 29: OV3 (Mitsubishi) Time Out 156
Failure 31: Initialization Fault Inverter 156
Failure 32: Verification Fault Inverter 157
Failure 35: Wrong Software Version 157
Failure 36: The Linen is Not Correctly Distributed in the Stage Before the Start Up of the Spinning Sequence 157
Failure 37: Drain Failure at the Spray Sequence 157
Failure 38: No Recycle Water 157
Failure 39: Empty Soap Supply Box 158

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Failure 40: Fill Failure Recycle 158
Failure 41: Service Due Warning 158
Failure 42: No Network Connection 158
Failure 43: Wrong Voltage Range Selection 159
Failure 44: Incorect Selection of Machine Type 159
Failure 45: Drum Rotation Sensor is not Working 159
Failure 56: Unload Speed 159
Failure 60: Inner Door Lock 159
Failure 61: Inner Door Calibration 160
Failure 62: MXB Drum Fixation 160
Failure 77: Time for Heating Blocking is Out 161
Failure 80: Time for Dispensing Liquid Detergents is Out 161
Failure 81: No Reheat 161
Failure 82: No Refill 161
Failure 83: Cycle Fail 162
Failure 85: RTC Low Battery 162
Failure 95: Watch Dog 162
Failure 100: Weigh NOCOMM 162
Failure 101: Weigh LOW 162
Failure 102: Weigh HIGH 162
Failure 103: Weigh Balance 162
Failure 104: Weigh Overload 163
Failure 106: Calibration Error 163
Failure 107: Not Calibrated 163
Failure 130-141: MXB Drum Fixation 163
Failure 142: Drum Rotation Error 165
Failure 300-353: Mitsubishi Inverter Alarm Message 166
Failure 300-301-302: OC Errors (OVERCURRENT) 169
Failure 303-304-305: OV Errors (OVERVOLTAGE) 169
Failure 306: THT-Error (INVERTER OVERLOAD) 169
Failure 307: THM-Error (MOTOR OVERLOAD) 169
Failure 309: OLT-Error (STALL PREVENTION) 169
Failure 313-315: OPT/PUE-Error (OPTION FAULT/PARAMETER UNIT LEAVE OUT) 169
Failure 335: FIN-Error (COOLING FIN INVERTER OVERHEAT) 170
Failure 500-526: Memory Errors 170
Failure 550: Traceability Write 170
Failure 551: Traceability Full 170
Failure 552: DAQ Full Error 170
Failure 553: Store DAQ>PC DATA 170
Failure 560: USB Not Found 170
Failure 561: File Not Found 170
Failure 562: Export Failed 170
Failure 563: Import Failed 170
Failure 600-628: Software Errors 171

Service Information 172
Maintenance 172

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Information for Service 172
Programmer Circuit Board 172
Instructions for Replacing the Programmer Boards 172
Instructions for Installing New Software 173

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Safety Information

Important Safety Instructions

WARNING

Before operating a machine controlled by an electronic programmer, read this manual. Incorrect use can result in serious injuries or damage to the machine controls. Ignoring instructions can cause an incorrect machine function, which may result in injuries or machine and/or linen damages.

C001

- Before installation, operating and maintenance of the machine, read complete instructions thoroughly which means the following manuals: "Original Programming Manual" and "Original Installation, maintenance and user's manual". Follow these instructions and keep them handy for later use.
- A machine must be installed by following the "Original Installation, maintenance and user's manual". Before the first machine start, it must be initialized and tested by a qualified worker.
- The electric service line must not be affected by other electrical loading. A nominal voltage, if loaded or not must work in the range ±10% with a maximum permanent frequency deviation of 1% or a short-time one at 2% of a given frequency. Connecting or starting the machine at an incorrect voltage can damage the programmer.
- The machine must not be exposed to high humidity or extreme high and low temperatures.
- Do not tamper with the controls.
- **Instructions in this manual do not cover all dangerous situations. It is up to the user to handle the machine carefully.**
- The manufacturer has the right to change specifications in this manual without prior notice. All the stated information is only for informative purpose and must be considered as general. It is not possible to present all the specific data of the device.

NOTE: Every circuit board has a serial number and board code. The model and serial number of the machine, must be mentioned in all correspondence or inquiries addressed to the distributor or manufacturer.

NOTE: The programmer uses machine type codes to select different machines´ programmable machines executions. The model number on the machine doesn’t indicate the machine type directly. It must be linked with the description of the machine type letters.

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Introduction

Model Identification

Information in this manual is applicable to these models:

HY105_HC-200	SAH080D	SYH520D	UYC080I
HY125_HC-200	SAH105D	SYH800D	UYC105I
HY135_HC-200	SAH135D	SYN020D	UYC10XI
HY180_HC-200	SAH180D	SYN025D	UYC12XI
HY20_HC-200	SAH240D	SYN030D	UYC135I
HY240_HC-200	SAU080D	SYN040D	UYC180I
HY25_HC-200	SAU105D	SYN055D	UYC240I
HY280_HC-200	SAX080D	SYN070D	UYC280I
HY30_HC-200	SAX105D	SYN090D	UYC335I
HY335_HC-200	SAX135D	SYN125D	UYC400I
HY40_HC-200	SAX180D	SYQ065D	UYC520I
HY400_HC-200	SAX240D	SYQ080D	UYC800I
HY520_HC-200	SAY080D	SYQ105D	UYE065I
HY55_HC-200	SAY135D	SYQ135D	UYE080I
HY65_HC-200	SAY180D	SYQ180D	UYE105I
HY70_HC-200	SAY240D	SYQ240D	UYE135I
HY80_HC-200	SH180_QED-SELECT	SYQ280D	UYE180I
HY90_HC-200	SH240_QED-SELECT	SYU065D	UYE240I
HYB180F	SH280_QED-SELECT	SYU080D	UYE280I
HYC065F	SHB0180D	SYU105D	UYG065I
HYC080F	SHC180D	SYU10XD	UYG080I
HYC105F	SHC240D	SYU12XD	UYG105I
HYC135F	SHC280D	SYU135D	UYG10XI
HYC180F	SHG0180D	SYU180D	UYG12XI
HYC240F	SHG0240D	SYU240D	UYG135I
HYC280F	SHG0280D	SYU280D	UYG180I
HYE065F	SHH180D	SYU335D	UYG240I
HYE080F	SHH240D	SYU400D	UYG280I

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HYE105F	SHH280D	SYU520D	UYG335I
HYE135F	SHU0180D	SYU800D	UYG400I
HYE180F	SHU0240D	SYW065D	UYG520I
HYE240F	SHU0280D	SYW080D	UYG800I
HYE280F	SHU180D	SYW105D	UYH065I
HYG065F	SHU240D	SYW135D	UYH080I
HYG080F	SHU280D	SYW180D	UYH105I
HYG105F	SHX180D	SYW240D	UYH10XI
HYG135F	SHX240D	SA105	UYH12XI
HYG180F	SHX280D	SYX065D	UYH135I
HYG240F	SY1000_QED-SELECT	SYX080D	UYH180I
HYG280F	SY105_QED-SELECT	SYX105D	UYH240I
HYG335F	SY1200_QED-SELECT	SYX10XD	UYH280I
HYG400F	SY125_QED-SELECT	SYX12XD	UYH335I
HYG520F	SY135_QED-SELECT	SYX135D	UYH400I
HYH065F	SY180_QED-SELECT	SYX180D	UYH520I
HYH080F	SY20_QED-SELECT	SYX240D	UYH800I
HYH105F	SY240_QED-SELECT	SYX280D	UYN020I
HYH135F	SY25_QED-SELECT	SYX335D	UYN025I
HYH180F	SY280_QED-SELECT	SYX400D	UYN030I
HYH240F	SY30_QED-SELECT	SYX520D	UYN040I
HYH280F	SY335_QED-SELECT	SYX800D	UYN055I
HYH335F	SY40_QED-SELECT	SYY065D	UYN070I
HYH400F	SY400_QED-SELECT	SYY080D	UYN090I
HYH520F	SY520_QED-SELECT	SYY105D	UYN125I
HYN020F	SY55_QED-SELECT	SYY135D	UYN180I
HYN025F	SY65_QED-SELECT	SYY180D	UYN230I
HYN030F	SY70_QED-SELECT	SYY240D	UYN275I
HYN040F	SY80_QED-SELECT	SYY280D	UYQ065I
HYN055F	SY800_QED-SELECT	UH180_PROFORM	UYQ080I
HYN070F	SY90_QED-SELECT	UH240_PROFORM	UYQ105I
HYN090F	SYB180D	UH280_PROFORM	UYQ135I
HYN125F	SYC065D	UHB0180I	UYQ180I

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HYQ065F	SYC080D	UHC180I	UYQ240I
HYQ080F	SYC105D	UHC240I	UYQ280I
HYQ105F	SYC10XD	UHC280I	UYU065I
HYQ135F	SYC12XD	UHG0180I	UYU080I
HYQ180F	SYC135D	UHG0240I	UYU105I
HYQ240F	SYC180D	UHG0280I	UYU10XI
HYQ280F	SYC240D	UHH180I	UYU12XI
HYU065F	SYC280D	UHH240I	UYU135I
HYU080F	SYC335D	UHH280I	UYU180I
HYU105F	SYC400D	UHU0180I	UYU240I
HYU135F	SYC520D	UHU0240I	UYU280I
HYU180F	SYC800D	UHU0280I	UYU335I
HYU240F	SYE065D	UHU180I	UYU400I
HYU280F	SYE080D	UHU280I	UYU520I
HYU335F	SYE105D	UHX180I	UYU800I
HYU400F	SYE135D	UHX240I	UYW065I
HYU520F	SYE180D	UHX280I	UYW080I
HYW065F	SYE240D	UY1000_PROFORM	UYW105I
HYW080F	SYE280D	UY105_PROFORM	UYW135I
HYW105F	SYG065D	UY1200_PROFORM	UYW180I
HYW135F	SYG080D	UY125_PROFORM	UYW240I
HYW180F	SYG105D	UY135_PROFORM	UYX065I
HYW240F	SYG10XD	UY180_POUNDS_PRO-FORM	UYX080I
HYX065F	SYG12XD	UY180_PROFORM	UYX105I
HYX080F	SYG135D	UY20_PROFORM	UYX10XI
HYX105F	SYG180D	UY230_PROFORM	UYX12XI
HYX135F	SYG240D	UY240_PROFORM	UYX135I
HYX180F	SYG280D	UY25_PROFORM	UYX180I
HYX240F	SYG335D	UY275_PROFORM	UYX240I
HYX280F	SYG400D	UY280_PROFORM	UYX280I
HYX335F	SYG520D	UY30_PROFORM	UYX335I
HYX400F	SYG800D	UY335_PROFORM	UYX400I

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HYX520F	SYH065D	UY40_PROFORM	UYX520I
SAC080D	SYH080D	UY400_PROFORM	UYX800I
SAC105D	SYH105D	UY520_PROFORM	UYY065I
SAC135D	SYH10XD	UY55_PROFORM	UYY080I
SAC180D	SYH12XD	UY65_PROFORM	UYY105I
SAC240D	SYH135D	UY70_PROFORM	UYY135I
SAE080D	SYH180D	UY80_PROFORM	UYY180I
SAE105D	SYH240D	UY800_PROFORM	UYY240I
SAE135D	SYH280D	UY90_PROFORM	UYY280I
SAE180D	SYH335D	UYB180I	UY350_PROFORM
SAE240D	SYH400D	UYC065I	UY450_PROFORM
UYC350I	UYH350I	UYY350I	UY600_PROFORM
UYC450I	UYH450I	UYY450I	SY350_QED-SELECT
UYC600I	UYH600I	UYY600I	SY450_QED-SELECT
SYC350D	SYH350D	SYY350D	SY600_QED-SELECT
SYC450D	SYH450D	SYY450D	HY350_HC-200
SYC600D	SYH600D	SYY600D	HY450_HC-200
HYC350F	HYH350F	HYY350F	HY600_HC-200
HYC450F	HYH450F	HYY450F	UMC360I
HYC600F	HYH600F	HYY600F	UMC500I
UMC700I	UMY360I	SMY500D	UMB700_PROFORM
SMC360D	UMY500I	SMY700D	SMB360_QED-SELECT
SMC500D	UMY700I	UMB360_PROFORM	SMB500_QED-SELECT
SMC700D	SMY360D	UMB500_PROFORM	SMB700_QED-SELECT
HYX350F	SAC332D	SAH520D	SAY280D
HYX450F	SAC520D	SAX280D	SAY332D
HYX600F	SAH280D	SAX332D	SAD520D
SA80	SAH332D	SAX520D	SHY180D
SMH360D	SYX350D	UHY180I	SHY240D
SMH500D	SYX450D	UHY240I	SHY280D
SMH700D	SYX600D	UHY280I	UMH500I
SY80_KIS_PHOTO-ME	UHU240I	UMH360I	UMH700I
UYX350I	UYX450I	UYX600I	

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Machine Type in Configuration Menu

Machine Type in Configuration Menu			
Dry Load Capacity	**Machine Type**		
	SY Decal	**UY Decal**	**HY Decal**
Freestanding, High Spin Washer Extractors			
6.5 kg / 14 lb / 65 L (100 G)	SY65N	UY65N	HY65N
6.5 kg / 14 lb / 65 L (400 G)	SY65H	UY65H	HY65H
7.5 kg / 20 lb / 80 L (100 G)	SY80N	UY80N	HY80N
7.5 kg / 20 lb / 80 L (400 G)	SY80H	UY80H	HY80H
10.5 kg / 25 lb / 105 L (100 G)	SY105N	UY105N	HY105N
10.5 kg / 25 lb / 105 L (400 G)	SY105H	UY105H	HY105H
13.5 kg / 30 lb / 135 L (100 G)	SY135N	UY135N	HY135N
13.5 kg / 30 lb / 135 L (400 G)	SY135H	UY135H	HY135H
18 kg / 40 lb / 180 L (100 G)	SY180N	UY180N	HY180N
18 kg / 40 lb / 180 L (400 G)	SY180H	UY180H	HY180H
24 kg / 55 lb / 240 L (100 G)	SY240N	UY240N	HY240N
24 kg / 55 lb / 240 L (400 G)	SY240H	UY240H	HY240H
28 kg / 70 lb / 280 L	SY280	UY280	HY280
35 kg / 350 L	SY350	UY350	HY350
45 kg / 450 L	SY450	UY450	HY450
60 kg / 600 L	SY600	UY600	HY600
33 kg / 75 lb / 335 L	SY335	UY335	HY335
40 kg / 90 lb / 400 L	SY400	UY400	HY400
55 kg / 125 lb / 520 L	SY520	UY520	HY520
80 kg / 180 lb / 800 L	SY800	UY800	N/A
100 kg / 230 lb / 1000 L	SY1000	UY1000	N/A
120 kg / 275 lb / 1200 L	SY1200	UY1200	N/A
Cabinet Hardmount Washer Extractors			
7.5 kg / 20 lb / 80 L	SA80	N/A	N/A
10.5 kg / 25 lb / 105 L	SA105	N/A	N/A
13.5 kg / 30 lb / 135 L	SA135	N/A	N/A
18 kg / 40 lb / 180 L	SA180	N/A	N/A

continues...

Table 1

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Machine Type in Configuration Menu			
Dry Load Capacity	**Machine Type**		
	SY Decal	**UY Decal**	**HY Decal**
24 kg / 55 lb / 240 L	SA240	N/A	N/A
28 kg / 70 lb / 280 L	SA280	N/A	N/A
35 kg / 80 lb / 332 L	SA332	N/A	N/A
52 kg / 120 lb / 520 L	SA520	N/A	N/A
High Spin Hygienic Barrier Machines			
18 kg / 40 lb / 180 L	SH180	UH180	N/A
24 kg / 55 lb / 240 L	SH240	UH240	N/A
28 kg / 70 lb / 280 L	SH280	UH280	N/A
36 kg / 360 L	SMB360	UMB360	N/A
50 kg / 500 L	SMB500	UMB500	N/A
70 kg / 700 L	SMB700	UMB700	N/A

Table 1

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Control Identification

Symbol Used

Buttons HY

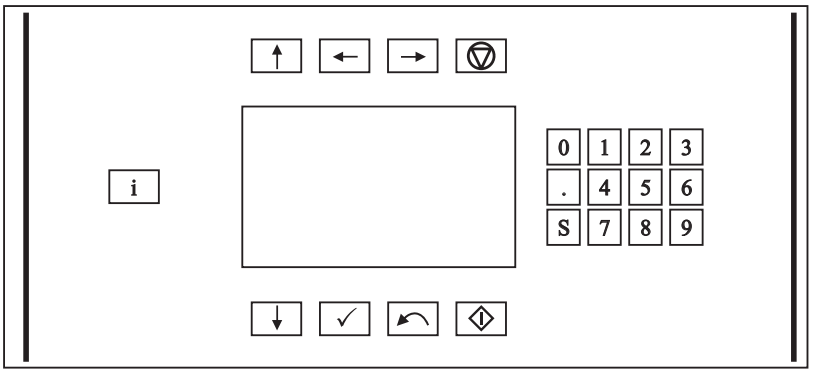
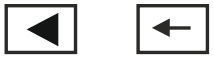


Figure 1

HY Decal	
 CHM1687R	**START** (**ADVANCE** functions)
 CHM2457N_SVG	**STOP** (program interruption)
 CHM2452N_SVG	**CONFIRM THE SELECTION (ENTER)**
 CHM1671R	**CANCEL THE SELECTION**
 CHM1672R or CHM1673R	**MOVE UP**
 CHM1674R or CHM1675R	**MOVE DOWN**
 CHM1676R or CHM1677R	**SELECTION NO DECREASING THE TIME SEQUENCE**
 CHM1678R or CHM1679R	**SELECTION YES INCREASING THE TIME SEQUENCE**
 CHM1680R	**INFORMATION** (overview of available wash programs and program information)

continues...

Table 2

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HY Decal	
S CHM2460N_SVG	**SERVICE INFORMATION** (servicing information)
. CHM1695R	**DELAYED START FUNCTION** (the delay starts running upon the pressing of the "start" button)
0 to 9	**NUMERIC KEYPAD**

Table 2

Buttons SY, SA, SH

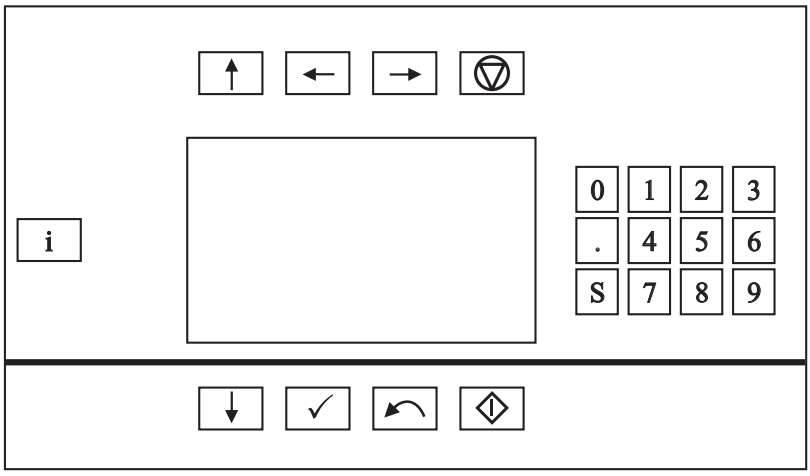
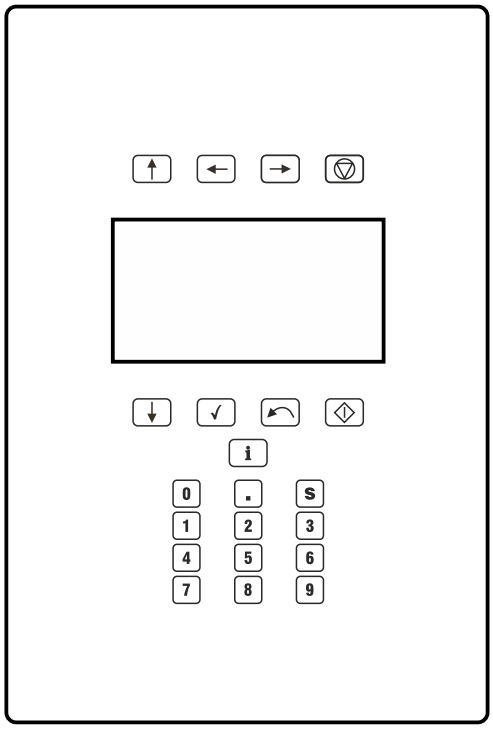


Figure 2

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Buttons SY*350-600, SM*360-700



CZB5R

Figure 3

SY, SA, SH, SM Decal	
CHM1687R	**START** (**ADVANCE** function)
CHM2457N_SVG	**STOP** (program interruption)
CHM2452N_SVG	**CONFIRM THE SELECTION (ENTER)**
CHM1671R	**CANCEL THE SELECTION**
CHM1672R or CHM1673R	**MOVE UP**
CHM1674R or CHM1675R	**MOVE DOWN**
CHM1676R or CHM1677R	**SELECTION NO DECREASING THE TIME SEQUENCE**

continues...

Table 3

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SY, SA, SH, SM Decal	
CHM1678R or CHM1679R	**SELECTION YES INCREASING THE TIME SEQUENCE**
CHM1680R	**INFORMATION** (overview of available wash programs and program information)
CHM2460N_SVG	**SERVICE INFORMATION** (servicing information)
CHM1695R	**DELAYED START FUNCTION** (the delay starts running upon the pressing of the "start" button)
0 to 9	**NUMERIC KEYPAD**

Table 3

Buttons UY, UH

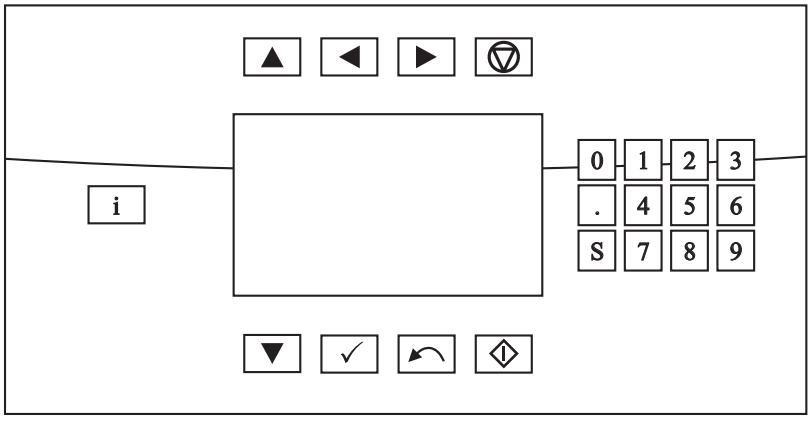
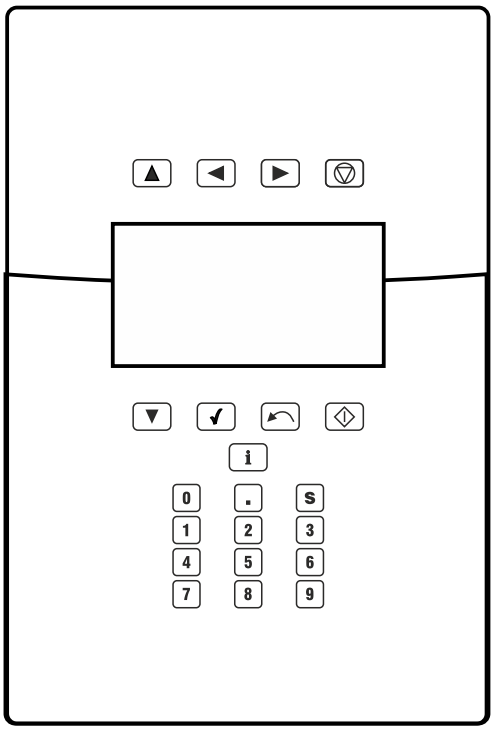


Figure 4

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Buttons UY*350-600, UM*360-700



CZB4R

Figure 5

UY, UH, UM Decal	
 CHM1687R	**START** (**ADVANCE** function)
 CHM2457N_SVG	**STOP** (program interruption)
 CHM2452N_SVG	**CONFIRM THE SELECTION (ENTER)**
 CHM1671R	**CANCEL THE SELECTION**
 CHM1672R or  CHM1673R	**MOVE UP**
 CHM1674R or  CHM1675R	**MOVE DOWN**
 CHM1676R or  CHM1677R	**SELECTION NO DECREASING THE TIME SEQUENCE**

continues...

Table 4

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UY, UH, UM Decal	
  CHM1678R or CHM1679R	**SELECTION YES INCREASING THE TIME SEQUENCE**
 CHM1680R	**INFORMATION** (overview of available wash programs and program information)
 CHM2460N_SVG	**SERVICE INFORMATION** (servicing information)
 CHM1695R	**DELAYED START FUNCTION** (the delay starts running upon the pressing of the "start" button)
0 to 9	**NUMERIC KEYPAD**

Table 4

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Main Menu

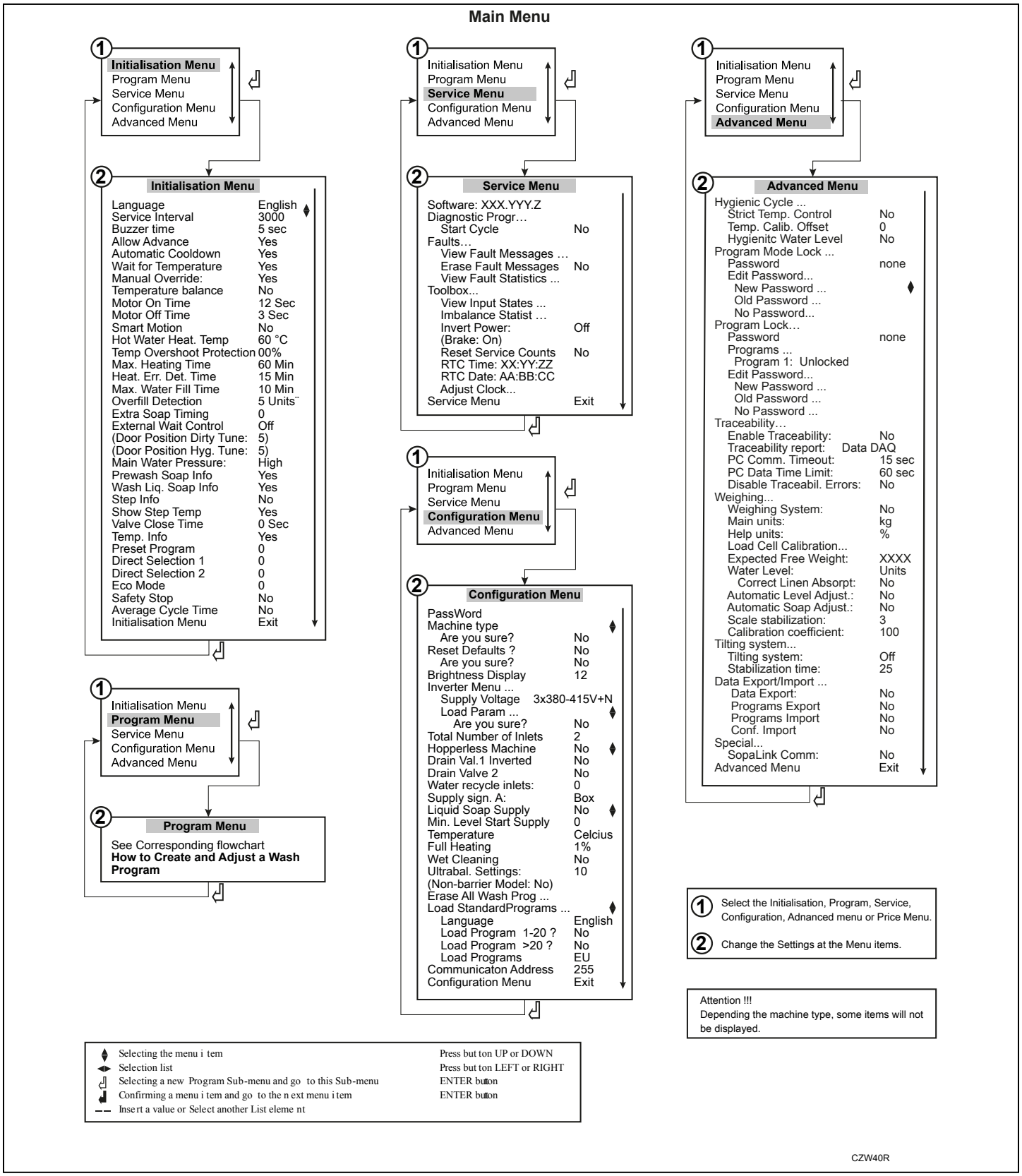


Figure 6

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Basic Description of Controls

General

The Control Offers:

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

In Operation the Following Data is Displayed:

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

The Operation Menu:

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

The Hardware and Software of the Wash Computer:

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

Specific

The PROGRAM Menu is Designated for:

- The creation of a specific name for a wash program.
- The creation and implementation of a new wash program step by step.
- Editing a wash program step by step.
- Inserting and deleting steps in the wash program.
- Copying a wash program.
- Deleting a wash program.
- Inspecting the wash program by the view function.

The CONFIGURATION Menu is Designated for :

- The selection of the machine type.
- Loading the default factory settings for the CONFIGURATION and INITIALIZATION menu.
- The selection of the Brightness of the display.
- The selection of the power supply voltage of the washing machine.
- Loading the frequency inverter parameters.
- Erasing all the programmed wash programs (reset Wash program EEPROM memory).
- Loading the standard wash programs.
- The selection of the number of wash machine water supply inlets.
- The selection of a second drain valve (water recycling system).
- Enablization of external liquid pumps (if applicable).
- The selection if the temperature must be displayed in degrees Celsius or degrees Fahrenheit.
- The selection Full Heating.
- The selection of Wet Cleaning (very low programmable water levels).
- The selection of the minimum level start supplies.

The INITIALIZATION Menu is Designated for :

- The selection of the displayed Language.
- Programming the Service due value.
- The selection of the Buzzer time interval.
- The selection of the Advance function.
- The selection of the Wait for temperature function.
- The selection of the Manual override function.
- The selection of the Temperature balance function.
- Programming the Default Motor On and Off times for reversing wash action.
- The selection of the Automatic Cooldown function.
- Programming the Boiler temperature (hot water supply).
- Programming the Temperature Overshoot Protection value.
- Programming the Maximum Heating time value.
- Programming the Maximum Fill time value.
- Programming the Maximum Level overfill value.

The SERVICE Menu is Designated for :

- The inspection of the error messages log register and the list with statistics.
- Activating the power of the frequency inverter.
- The inspection of the functionality of the electric input signals.
- Resetting the Cycle counter.

The ADVANCED Menu is Designated for :

- Special optional applications.

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How to Get into the Setup Mode

1. Press the SERVICE INFO button S on the keypad.
2. Press the Arrow Down Button ▼ or ↓ several times until you see the screen with the Menu Selection: "To program mode press 0".

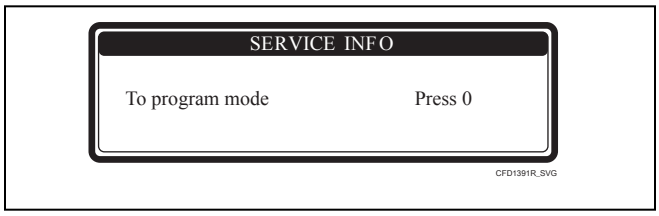


Figure 7

3. Press 0 (the Zero button). You will see the Main Menu Screen.
4. If a Password was enabled first you have to enter the correct Password.

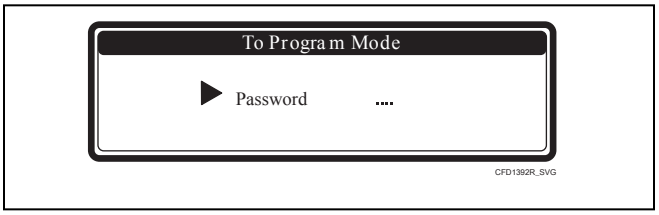


Figure 8

How to Leave a Setup Mode

When the "Main Menu" screen is shown.



1. Press the SERVICE INFO button CHM1694R on the keypad.
2. Then you will return to "Run Mode" and "SELECT CYCLE" is shown.

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99 Wash Programs - 99 Steps

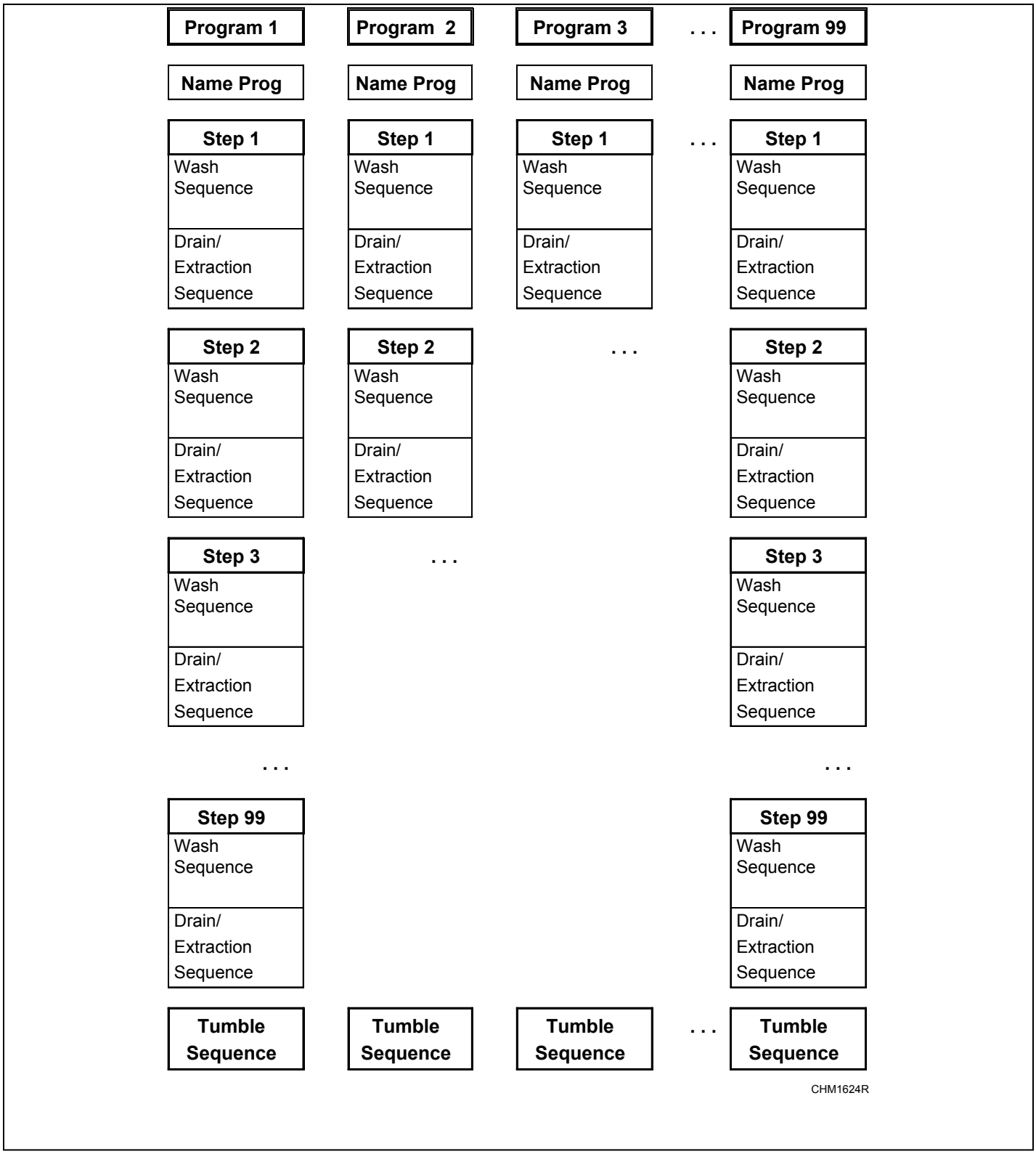


Figure 9

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Available Wash Sequences

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

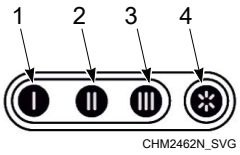
Available drain/extraction sequences: Drain, Extract, No drain, Static drain, Rev drain.

The Creation of a Wash Program

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

Top Soap Dispenser and Front (or Side) Soap Dispenser

Top Soap Dispenser



1. Detergent for the pre-wash
2. Detergent for the main wash
3. Liquid detergent for the main wash or liquid bleach, etc.
4. Liquid fabric softener or liquid starch for the last rinse

Figure 10

Front (or Side) Soap Dispenser



Dispenser A - First Wash

Dispenser B - Second Wash

Dispenser D - Last Rinse

Figure 11

Programming the Wash Sequence

First choose the type of Wash sequence.

Washing Machine with Top Soap Dispenser

- PREWASH
- WASH
- COOLDOWN
- RINSE
- FINAL RINSE
- SOAK
- SPRAY
- No WASH

Washing Machine with Front (or Side) Soap Dispenser

- WASH
- COOLDOWN
- RINSE
- SOAK
- SPRAY
- No WASH

Then program all the related functions of the sequence.

Available functions

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

Each step is pre-loaded with default settings. When creating a program, you can choose to utilize these suggested settings.

Programming the Drain Sequence

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

- DRAIN
- EXTRACTION
- No DRAIN
- STATIC DRAIN
- REVERSING DRAIN

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

Available functions

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

You can skip a sequence between two by programming No WASH or No Drain.

Example : The No drain sequence should be programmed between a wash and a cooldown sequence.

NOTE: A more detailed explanation for the specific sequences can be found in Chapter *Step 4: Programming the Wash Part*, *Step 5: Programming the Drain Step*.

The Tumble Sequence

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

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Programming the Functions

Limits

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

Programming the Water Temperature

Limits

- Minimum value : 33.8°F [1°C]
- Maximum value : 113°F [45°C] 197.6°F [45°C] for the PRE-WASH and SOAK and 197.6°F [92°C] for the WASH sequence.
- For RINSE, FINAL RINSE and SPRAY no Temperature can be programmed.

Programming the Water Inlets Valves

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

Top Soap Dispenser Machines

The Cold Water Inlet Valves

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

The Hot Water Inlet Valves

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

How to Select Inlet Valves: EXAMPLE		
For a Prewash:	Programmable temperature:	33.8 - 113°F [1 - 45°C]
	Inlet Valve 1 (cold) and/or 5 (hot)	soap box for a Prewash
	and/or 7 (cold)	direct Inlets
For a Wash:	Programmable temperature:	33.8 - 197.6°F [1 - 92°C]
	Inlet Valve 2 (cold) and/or 6 (hot)	soap box for a Wash - detergent
	and/or 7 (cold)	direct Inlets
For a Rinse:	Inlet valves 1+2+7 (cold)	No detergent is added
For a Final Rinse:	Inlet valve 4	soap box for a Final rinse
	and/or 7 (cold)	direct inlets

Table 5

WARNING

For machines with liquid supply pumps, direct water inlet valve 7 must be programmed because the liquid is added at the direct water inlet channel. For washing machines with water recycling, the water recycling supply must be connected to inlet valve 5 or 7.

C015

Programming the Water Inlet Valves for Cabinet Hardmount 52 kg / 120 lb / 520 L Machine

The Cold Water Inlet Valves

- Inlet Valve 1 is a direct Inlet Valve and speeds up the water fill process.
- Inlet Valve 2 is a direct Inlet Valve and speeds up the water fill process.
- Inlet Valve 4 corresponds with soap box for a Prewash.
- Inlet Valve 5 corresponds with soap box for a Wash - detergent.
- Inlet Valve 6 corresponds with soap box for a Wash - liquid soap.
- Inlet Valve 7 corresponds with soap box for a Final Rinse.

The Hot Water Inlet Valves

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- Inlet Valve 3 is a direct Inlet Valve and speeds up the water fill process.
- Inlet Valve 8 corresponds with soap box for a Prewash.

Front or Side Soap Dispenser Washing Machines

The Cold Water Inlet Valves

- Inlet Valve 1 : Cold Hard Water or Recycled Water
- Inlet Valve 2 : Cold Soft Water

The Hot Water Inlet Valve

- Inlet Valve 3 : Warm Soft Water

WARNING

For a front soap dispenser washing machine, to add soap, the supplies must be programmed.

C017

Programming the Water Level

Water Level Limits

- Refer to *Table 13*. The values are different for each machine type.
- Minimum value: above the heating elements and the temperature sensor.
- Maximum value: half the wash drum.

Normal Low Level, Normal High Level

- The Normal Low Level is recommended for the PRE-WASH, WASH and SOAK sequences.
- The Normal High Level is recommended for the RINSE and FINAL RINSE Sequences.
- At the COOLDOWN sequence, the Wash Computer makes use of a low water level and is draining the water automatically.
- At the Spray sequence, the Drain valve stays open.

Wet Cleaning Selection Configuration Menu

- It's possible to program a level below default minimum programmable level. Refer to *Table 13*.
- The heating will not be functional for a water level below the standard minimum programmable water level.

NOTE: For woolens and other delicate linen a normal high water level is recommended. The economic function should only be used for lightly soiled and/or smaller volumes of laundry. In other cases, the program will give poor washing quality.

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Cabinet Freestanding 6.5-28 kg / 14-70 lb / 65-280 L

Water Volume per Water Level - With No Load - Cabinet Freestanding Models							
Water Level	**Machine Capacity**						
	6.5 kg / 14 lb / 65 L	**7.5 kg / 20 lb / 80 L**	**10.5 kg / 25 lb / 105 L**	**13.5 kg / 30 lb / 135 L**	**18 kg / 40 lb / 180 L**	**24 kg / 55 lb / 240 L**	**28 kg / 70 lb / 280 L**
7	-	-	-	-	2.11 gal [8 l]	3.83 gal [14.5 l]	2.93 gal [11.1 l]
8	-	-	-	-	2.64 gal [10 l]	4.62 gal [17.5 l]	3.72 gal [14.1 l]
9	2.51 gal [9.5 l]	2.77 gal [10.5 l]	2.77 gal [10.5 l]	3.17 gal [12 l]	3.30 gal [12.5 l]	5.55 gal [21 l]	4.54 gal [17.2 l]
10	2.91 gal [11 l]	3.17 gal [12 l]	3.17 gal [12 l]	3.83 gal [14.5 l]	3.83 gal [14.5 l]	6.34 gal [24 l]	5.57 gal [21.1 l]
11	(1) 3.43 gal [13 l]	3.57 gal [13.5 l]	3.70 gal [14 l]	4.36 gal [16.5 l]	4.49 gal [17 l]	7.40 gal [28 l]	6.46 gal [24.4 l]
12	(2) 3.83 gal [14.5 l]	(1) 4.09 gal [15.5 l]	(1) 4.23 gal [16 l]	5.02 gal [19 l]	5.15 gal [19.5 l]	8.32 gal [31.5 l]	7.50 gal [28.4 l]
13	(3) 4.23 gal [16 l]	(2) 4.49 gal [17 l]	(2) 4.76 gal [18 l]	(1) 5.68 gal [21.5 l]	5.81 gal [22 l]	8.85 gal [33.5 l]	8.53 gal [32.3 l]
14	(4) 4.76 gal [18 l]	(3) 5.02 gal [19 l]	(3) 5.28 gal [20 l]	(2) 6.34 gal [24 l]	6.60 gal [25 l]	9.77 gal [37 l]	9.64 gal [36.5 l]
15	5.15 gal [19.5 l]	(4) 5.55 gal [21 l]	(4) 5.81 gal [22 l]	(3) 7.13 gal [27 l]	7.40 gal [28 l]	10.83 gal [41 l]	10.83 gal [41 l]
16	5.68 gal [21.5 l]	6.08 gal [23 l]	6.47 gal [24.5 l]	(4) 7.79 gal [29.5 l]	(1) 8.32 gal [31.5 l]	(1) 11.89 gal [45 l]	(1) 11.83 gal [44.8 l]
17	6.21 gal [23.5 l]	6.74 gal [25.5 l]	7.13 gal [27 l]	8.59 gal [32.5 l]	(2) 9.11 gal [34.5 l]	(2) 12.81 gal [48.5 l]	(2) 13.18 gal [49.9 l]
18	6.74 gal [25.5 l]	7.26 gal [27.5 l]	7.79 gal [29.5 l]	9.51 gal [36 l]	(3) 10.04 gal [38 l]	(3) 13.74 gal [52 l]	(3) 14.50 gal [54.9 l]
19	7.26 gal [27.5 l]	7.79 gal [29.5 l]	8.45 gal [32 l]	10.30 gal [39 l]	(4) 10.83 gal [41 l]	(4) 14.40 gal [54.5 l]	(4) 15.80 gal [59.8 l]
20	7.66 gal [29 l]	8.32 gal [31.5 l]	8.98 gal [34 l]	11.23 gal [42.5 l]	11.76 gal [44.5 l]	15.72 gal [59.5 l]	17.14 gal [64.9 l]
21	8.19 gal [31 l]	8.85 gal [33.5 l]	9.77 gal [37 l]	12.02 gal [45.5 l]	12.68 gal [48 l]	16.91 gal [64 l]	18.33 gal [69.4 l]
22	8.85 gal [33.5 l]	9.51 gal [36 l]	10.43 gal [39.5 l]	12.81 gal [48.5 l]	13.60 gal [51.5 l]	18.10 gal [68.5 l]	19.65 gal [74.4 l]
23	9.51 gal [36 l]	10.17 gal [38.5 l]	11.10 gal [42 l]	13.74 gal [52 l]	14.53 gal [55 l]	19.28 gal [73 l]	21.13 gal [80 l]

continues...

Table 6

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Water Volume per Water Level - With No Load - Cabinet Freestanding Models							
Water Level	**Machine Capacity**						
	6.5 kg / 14 lb / 65 L	**7.5 kg / 20 lb / 80 L**	**10.5 kg / 25 lb / 105 L**	**13.5 kg / 30 lb / 135 L**	**18 kg / 40 lb / 180 L**	**24 kg / 55 lb / 240 L**	**28 kg / 70 lb / 280 L**
24	10.17 gal [38.5 l]	10.7 gal [40.5 l]	11.89 gal [45 l]	14.53 gal [55 l]	15.45 gal [58.5 l]	20.47 gal [77.5 l]	22.48 gal [85.1 l]
25	10.70 gal [40.5 l]	11.36 gal [43 l]	12.68 gal [48 l]	15.45 gal [58.5 l]	16.51 gal [62.5 l]	21.93 gal [83 l]	23.78 gal [90 l]
26	11.36 gal [43 l]	12.15 gal [46 l]	13.47 gal [51 l]	16.38 gal [62 l]	17.44 gal [66 l]	22.85 gal [86.5 l]	25.20 gal [95.4 l]
27	12.15 gal [46 l]	12.94 gal [49 l]	14.27 gal [54 l]	17.17 gal [65 l]	18.36 gal [69.5 l]	24.04 gal [91 l]	26.60 gal [100.7 l]
28	12.94 gal [49 l]	13.74 gal [52 l]	15.06 gal [57 l]	18.10 gal [68.5 l]	19.28 gal [73 l]	25.23 gal [95.5 l]	27.71 gal [104.9 l]
29	13.74 gal [52 l]	14.53 gal [55 l]	15.98 gal [60.5 l]	18.89 gal [71.5 l]	20.21 gal [76.5 l]	26.55 gal [100.5 l]	29.09 gal [110.1 l]
30	-	-	16.77 gal [63.5 l]	19.81 gal [75 l]	21.13 gal [80 l]	27.74 gal [105 l]	30.56 gal [115.7 l]
(1) Economic Low Level							
(2) Economic High Level							
(3) Normal Low Level							
(4) Normal High Level							

Table 6

Cabinet Freestanding 35-60 kg / 350-600 L

Water Volume per Water Level - With No Load – Cabinet Freestanding Models			
Water Level	**Machine Capacity**		
	35 kg / 350 L	**45 kg / 450 L**	**60 kg/ 600 L**
23	-	-	8.41 gal [31.83 l]
24	-	-	9.21 gal [34.90 l]
25	-	-	10.31 gal [39.03 l]
26	-	-	11.28 gal [42.70 l]
27	-	-	12.36 gal [46.77 l]
28	-	-	13.44 gal [50.87 l]
29	6.40 gal [24.23 l]	8.18 gal [30.97 l]	14.76 gal [55.87 l]
30	7.03 gal [26.63 l]	9.08 gal [34.37 l]	15.90 gal [60.17 l]

continues...

Table 7

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Water Volume per Water Level - With No Load – Cabinet Freestanding Models			
Water Level	**Machine Capacity**		
	35 kg / 350 L	**45 kg / 450 L**	**60 kg/ 600 L**
31	7.85 gal [29.70 l]	9.98 gal [37.77 l]	17.31 gal [65.53 l]
32	8.74 gal [33.07 l]	11.00 gal [41.63 l]	(1) 18.76 gal [71.00 l]
33	9.52 gal [36.03 l]	11.90 gal [45.07 l]	20.28 gal [76.77 l]
34	10.36 gal [39.23 l]	12.96 gal [49.07 l]	(2) 21.75 gal [82.33 l]
35	11.26 gal [42.63 l]	14.06 gal [53.23 l]	23.32 gal [88.27 l]
36	(1) 12.20 gal [46.20 l]	15.27 gal [57.80 l]	25.00 gal [94.60 l]
37	13.26 gal [50.20 l]	16.44 gal [62.23 l]	26.73 gal [101.17 l]
38	(2) 14.34 gal [54.27 l]	(1) 17.75 gal [67.20 l]	28.45 gal [107.70 l]
39	15.38 gal [58.23 l]	19.09 gal [72.27 l]	30.20 gal [114.33 l]
40	16.47 gal [62.33 l]	(2) 20.44 gal [77.37 l]	31.90 gal [120.80 l]
41	17.53 gal [66.37 l]	21.77 gal [82.40 l]	33.66 gal [127.43 l]
42	18.67 gal [70.67 l]	23.28 gal [88.13 l]	(3) 35.50 gal [134.37 l]
43	19.96 gal [75.57 l]	24.89 gal [94.23 l]	37.45 gal [141.77 l]
44	21.28 gal [80.57 l]	26.37 gal [99.83 l]	39.48 gal [149.43 l]
45	(3) 22.56 gal [85.40 l]	27.95 gal [105.80 l]	41.44 gal [156.90 l]
46	23.96 gal [90.70 l]	(3) 29.48 gal [111.60 l]	43.28 gal [163.87 l]
47	(4) 25.22 gal [95.47 l]	31.09 gal [117.67 l]	(4) 45.32 gal [171.57 l]
48	26.59 gal [100.67 l]	32.63 gal [123.50 l]	47.37 gal [179.37 l]
49	28.02 gal [106.07 l]	(4) 34.41 gal [130.27 l]	49.51 gal [187.40 l]
50	29.36 gal [111.13 l]	36.17 gal [136.90 l]	51.62 gal [195.40 l]
51	30.84 gal [116.73 l]	37.98 gal [143.77 l]	53.69 gal [203.23 l]
52	32.27 gal [122.17 l]	39.68 gal [150.20 l]	55.79 gal [211.17 l]
53	33.68 gal [127.50 l]	41.48 gal [157.00 l]	57.99 gal [219.5 l]
54	35.02 gal [132.57 l]	43.25 gal [163.73 l]	60.09 gal [227.47 l]
55	36.53 gal [138.27 l]	45.09 gal [170.67 l]	62.28 gal [235.77 l]
56	38.01 gal [143.90 l]	46.81 gal [177.20 l]	64.42 gal [243.87 l]
57	39.44 gal [149.30 l]	48.66 gal [184.20 l]	66.54 gal [252.00 l]
58	40.92 gal [154.90 l]	50.46 gal [191.03 l]	68.94 gal [260.97 l]
59	42.49 gal [160.87 l]	52.32 gal [198.07 l]	71.29 gal [269.87 l]

continues...

Table 7

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Water Volume per Water Level - With No Load – Cabinet Freestanding Models			
Water Level	**Machine Capacity**		
	35 kg / 350 L	**45 kg / 450 L**	**60 kg/ 600 L**
60	43.97 gal [166.43 l]	54.13 gal [204.90 l]	73.41 gal [277.90 l]
61	45.42 gal [171.93 l]	56.08 gal [212.27 l]	75.65 gal [286.37 l]
62	46.86 gal [177.37 l]	57.82 gal [218.87 l]	77.77 gal [294.40 l]
63	48.21 gal [182.50 l]	59.76 gal [226.23 l]	79.85 gal [302.27 l]
64	49.91 gal [188.93 l]	58.96 gal [233.17 l]	82.05 gal [310.60 l]
65	541.24 gal [193.97 l]	63.45 gal [240.17 l]	84.35 gal [319.30 l]
66	52.68 gal [199.40 l]	65.37 gal [247.47 l]	86.68 gal [328.13 l]
67	54.13 gal [204.90 l]	67.14 gal [254.17 l]	88.93 gal [336.63 l]
68	55.72 gal [210.93 l]	69.06 gal [261.43 l]	90.95 gal [344.27 l]
69	57.36 gal [217.13 l]	70.87 gal [268.70 l]	93.20 gal [352.80 l]
70	58.87 gal [222.83 l]	72.81 gal [275.63 l]	95.56 gal [361.73 l]
71	60.36 gal [228.47 l]	74.78 gal [283.07 l]	97.93 gal [370.70 l]
72	61.83 gal [234.07 l]	76.72 gal [290.40 l]	100.22 gal [379.37 l]
73	63.33 gal [239.73 l]	78.68 gal [297.83 l]	102.45 gal [387.80 l]
74	64.87 gal [245.57 l]	80.69 gal [305.43 l]	104.85 gal [396.90 l]
75	66.45 gal [251.53 l]	82.64 gal [312.83 l]	107.07 gal [405.30 l]
76	67.97 gal [257.30 l]	84.42 gal [319.57 l]	109.48 gal [414.43 l]
77	69.55 gal [263.27 l]	86.41 gal [327.10 l]	111.96 gal [423.80 l]
78	71.02 gal [268.83 l]	88.25 gal [334.10 l]	114.12 gal [432.00 l]
79	72.53 gal [274.57 l]	90.12 gal [341.13 l]	116.48 gal [440.93 l]
80	74.03 gal [280.23 l]	91.98 gal [348.20 l]	118.57 gal [448.83 l]
(1) Economic Low Level			
(2) Economic High Level			
(3) Normal Low Level			
(4) Normal High Level			

Table 7

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Cabinet Freestanding 33-120 kg / 75-275 lb / 335-1200 L

Water Volume per Water Level - With No Load – Cabinet Freestanding Models						
Water Level	**Machine Capacity**					
	33 kg / 75 lb / 335 L	**40 kg / 90 lb / 400 L**	**55 kg / 125 lb / 520 L**	**80 kg / 180 lb / 800 L**	**100 kg / 230 lb / 1000 L**	**120 kg / 275 lb / 1200 L**
27	-	-	-	34.34 gal [130 l]	-	-
28	-	-	-	36.46 gal [138 l]	-	-
29	-	-	-	37.78 gal [143 l]	-	-
30	-	-	-	39.63 gal [150 l]	38.30 gal [145 l]	42.8 gal [162 l]
31	-	-	-	41.48 gal [157 l]	40.15 gal [152 l]	45.70 gal [173 l]
32	-	-	-	43.59 gal [165 l]	(1) 42.27 gal [160 l]	48.34 gal [183 l]
33	7.13 gal [27 l]	-	-	(1) 45.44 gal [172 l]	44.38 gal [168 l]	50.99 gal [193 l]
34	7.93 gal [30 l]	11.36 gal [43 l]	11.89 gal [45 l]	47.55 gal [180 l]	47.55 gal [180 l]	(1) 52.83 gal [200 l]
35	8.72 gal [33 l]	12.15 gal [46 l]	12.94 gal [49 l]	49.93 gal [189 l]	50.46 gal [191 l]	56 gal [212 l]
36	9.51 gal [36 l]	13.21 gal [50 l]	14 gal [53 l]	(2) 52.83 gal [200 l]	(2) 53.10 gal [201 l]	59.17 gal [224 l]
37	10.30 gal [39 l]	14.27 gal [54 l]	15.06 gal [57 l]	55.48 gal [210 l]	55.48 gal [210 l]	61.82 gal [234 l]
38	(1) 11.36 gal [43 l]	(1) 15.32 gal [58 l]	(1) 16.38 gal [62 l]	58.38 gal [221 l]	57.85 gal [219 l]	63.93 gal [242 l]
39	12.42 gal [47 l]	16.38 gal [62 l]	17.44 gal [66 l]	60.50 gal [229 l]	60.23 gal [228 l]	(2) 66.31 gal [251 l]
40	(2) 13.47 gal [51 l]	(2) 17.44 gal [66 l]	(2) 18.49 gal [70 l]	62.61 gal [237 l]	62.61 gal [237 l]	69.74 gal [264 l]
41	14.53 gal [55 l]	18.49 gal [70 l]	20.08 gal [76 l]	64.72 gal [245 l]	65.78 gal [249 l]	72.65 gal [275 l]
42	15.59 gal [59 l]	19.55 gal [74 l]	21.66 gal [82 l]	67.63 gal [256 l]	69.74 gal [264 l]	76.61 gal [290 l]
43	16.64 gal [63 l]	20.61 gal [78 l]	23.25 gal [88 l]	70.80 gal [268 l]	(3) 72.38 gal [274 l]	80.04 gal [303 l]
44	17.70 gal [67 l]	21.93 gal [83 l]	25.10 gal [95 l]	(3) 73.18 gal [277 l]	76.35 gal [289 l]	83.21 gal [315 l]
45	18.49 gal [70 l]	23.25 gal [88 l]	26.68 gal [101 l]	75.29 gal [285 l]	78.72 gal [298 l]	85.86 gal [325 l]
46	19.55 gal [74 l]	24.57 gal [93 l]	28.27 gal [107 l]	77.40 gal [293 l]	80.57 gal [305 l]	(3) 88.23 gal [334 l]
47	20.61 gal [78 l]	(3) 26.15 gal [99 l]	(3) 30.38 gal [115 l]	80.57 gal [305 l]	(4) 83.48 gal [316 l]	92.46 gal [350 l]

continues...

Table 8

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Water Volume per Water Level - With No Load – Cabinet Freestanding Models						
Water Level	**Machine Capacity**					
	33 kg / 75 lb / 335 L	**40 kg / 90 lb / 400 L**	**55 kg / 125 lb / 520 L**	**80 kg / 180 lb / 800 L**	**100 kg / 230 lb / 1000 L**	**120 kg / 275 lb / 1200 L**
48	(3) 21.93 gal [83 l]	27.74 gal [105 l]	32.23 gal [122 l]	83.48 gal [316 l]	86.38 gal [327 l]	95.89 gal [363 l]
49	23.25 gal [88 l]	29.32 gal [111 l]	34.34 gal [130 l]	(4) 87.18 gal [330 l]	89.82 gal [340 l]	98.27 gal [372 l]
50	(4) 24.57 gal [93 l]	(4) 31.17 gal [118 l]	36.46 gal [138 l]	90.35 gal [342 l]	91.93 gal [348 l]	101.18 gal [383 l]
51	25.62 gal [97 l]	32.49 gal [123 l]	38.04 gal [144 l]	93.25 gal [353 l]	94.57 gal [358 l]	103.56 gal [392 l]
52	26.68 gal [101 l]	33.81 gal [128 l]	(4) 39.63 gal [150 l]	95.1 gal [360 l]	97.22 gal [368 l]	(4) 107.52 gal [407 l]
53	27.74 gal [105 l]	35.13 gal [133 l]	41.21 gal [156 l]	97.22 gal [368 l]	100.39 gal [380 l]	110.95 gal [420 l]
54	28.79 gal [109 l]	36.72 gal [139 l]	43.32 gal [164 l]	100.91 gal [382 l]	104.61 gal [396 l]	115.18 gal [436 l]
55	30.12 gal [114 l]	38.30 gal [145 l]	45.44 gal [172 l]	103.82 gal [393 l]	107 gal [405 l]	119.14 gal [451 l]
56	31.44 gal [119 l]	40.15 gal [152 l]	47.82 gal [181 l]	105.93 gal [401 l]	109.63 gal [415 l]	121.52 gal [460 l]
57	32.49 gal [123 l]	41.74 gal [158 l]	49.66 gal [188 l]	108.31 gal [410 l]	112.27 gal [425 l]	124.43 gal [471 l]
58	33.55 gal [127 l]	43.32 gal [164 l]	51.51 gal [195 l]	110.95 gal [420 l]	115.97 gal [439 l]	126.8 gal [480 l]
59	34.87 gal [132 l]	45.17 gal [171 l]	53.63 gal [203 l]	113.86 gal [431 l]	119.93 gal [454 l]	131.29 gal [497 l]
60	36.19 gal [137 l]	46.23 gal [175 l]	55.48 gal [210 l]	117.56 gal [445 l]	123.37 gal [467 l]	135.78 gal [514 l]
61	37.51 gal [142 l]	47.29 gal [179 l]	57.59 gal [218 l]	119.67 gal [453 l]	127.07 gal [481 l]	138.43 gal [524 l]
62	39.10 gal [148 l]	48.61 gal [184 l]	59.7 gal [226 l]	122.05 gal [462 l]	129.44 gal [490 l]	140.80 gal [533 l]
63	40.22 gal [153 l]	50.46 gal [191 l]	61.55 gal [233 l]	124.43 gal [471 l]	132.09 gal [500 l]	143.18 gal [542 l]
64	47.74 gal [158 l]	52.31 gal [198 l]	63.4 gal [240 l]	127.60 gal [483 l]	134.46 gal [509 l]	147.94 gal [560 l]
65	43.06 gal [163 l]	54.16 gal [205 l]	65.51 gal [248 l]	130.77 gal [495 l]	138.69 gal [525 l]	152.16 gal [576 l]

continues...

Table 8

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Water Volume per Water Level - With No Load – Cabinet Freestanding Models						
Water Level	**Machine Capacity**					
	33 kg / 75 lb / 335 L	**40 kg / 90 lb / 400 L**	**55 kg / 125 lb / 520 L**	**80 kg / 180 lb / 800 L**	**100 kg / 230 lb / 1000 L**	**120 kg / 275 lb / 1200 L**
66	44.38 gal [168 l]	55.74 gal [211 l]	67.63 gal [256 l]	132.88 gal [503 l]	142.65 gal [540 l]	154.54 gal [585 l]
67	45.70 gal [173 l]	57.33 gal [217 l]	70 gal [265 l]	134.99 gal [511 l]	146.09 gal [553 l]	156.92 gal [594 l]
68	47.29 gal [179 l]	59.17 gal [224 l]	72.38 gal [274 l]	137.37 gal [520 l]	149.79 gal [567 l]	159.56 gal [604 l]
69	48.61 gal [184 l]	60.50 gal [229 l]	74 gal [280 l]	140.80 gal [533 l]	152.69 gal [578 l]	163.79 gal [620 l]
70	49.93 gal [189 l]	61.82 gal [234 l]	75.82 gal [287 l]	144.24 gal [546 l]	155.07 gal [587 l]	168.28 gal [637 l]
71	51.51 gal [195 l]	63.14 gal [239 l]	77.67 gal [294 l]	146.62 gal [555 l]	-	-
72	52.83 gal [200 l]	65 gal [246 l]	79.78 gal [302 l]	149.26 gal [565 l]	-	-
73	54.42 gal [206 l]	66.84 gal [253 l]	81.89 gal [310 l]	-	-	-
74	56 gal [212 l]	68.95 gal [261 l]	84.01 gal [318 l]	-	-	-
75	57.06 gal [216 l]	70.27 gal [266 l]	86.12 gal [326 l]	-	-	-
76	58.12 gal [220 l]	71.85 gal [272 l]	88.23 gal [334 l]	-	-	-
77	59.44 gal [225 l]	73.44 gal [278 l]	90.61 gal [343 l]	-	-	-
78	60.76 gal [230 l]	74.5 gal [282 l]	92.46 gal [350 l]	-	-	-
79	62.08 gal [235 l]	75.82 gal [287 l]	94.57 gal [358 l]	-	-	-
80	63.4 gal [240 l]	77.14 gal [292 l]	96.69 gal [366 l]	-	-	-
(1) Economic Low Level						
(2) Economic High Level						
(3) Normal Low Level						
(4) Normal High Level						

Table 8

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Cabinet Hardmount 7.5-52 kg / 20-120 lb / 80-520 L

Water Volume per Water Level - With No Load – Cabinet Hardmount Models								
Water Level	Machine Capacity							
	7.5 kg / 20 lb / 80 L	10.5 kg / 25 lb / 105 L	13.5 kg / 30 lb / 135 L	18 kg / 40 lb / 180 L	24 kg / 55 lb / 240 L	28 kg / 70 lb / 280 L	35 kg / 80 lb / 332 L	52 kg / 120 lb / 520 L
7	-	-	-	2 gal [7.6 l]	2.40 gal [9.10 l]	2.17 gal [8.2 l]	-	-
8	-	-	-	2.54 gal [9.6 l]	3.06 gal [11.60 l]	2.88 gal [10.9 l]	-	-
9	2.38 gal [9 l]	2.64 gal [10 l]	2.77 gal [10.5 l]	3.17 gal [12 l]	3.83 gal [14.50 l]	3.59 gal [13.6 l]	-	-
10	2.77 gal [10.5 l]	3.17 gal [12 l]	3.30 gal [12.5 l]	3.78 gal [14.3 l]	4.49 gal [17 l]	4.46 gal [16.9 l]	-	-
11	3.30 gal [12.5 l]	3.70 gal [14 l]	4.09 gal [15.5 l]	4.39 gal [16.6 l]	5.36 gal [20.3 l]	5.36 gal [20.3 l]	-	-
12	(1) 3.83 gal [14.5 l]	(1) 4.23 gal [16 l]	4.62 gal [17.5 l]	5.10 gal [19.3 l]	6.23 gal [23.6 l]	6.37 gal [24.1 l]	-	-
13	(2) 4.23 gal [16 l]	(2) 4.76 gal [18 l]	(1) 5.28 gal [20 l]	5.73 gal [21.7 l]	7.21 gal [27.3 l]	7.34 gal [27.8 l]	-	-
14	(3) 4.89 gal [18.5 l]	(3) 5.28 gal [20 l]	(2) 5.94 gal [22.5 l]	6.55 gal [24.8 l]	8.27 gal [31.3 l]	8.40 gal [31.8 l]	-	-
15	(4) 5.42 gal [20.5 l]	(4) 5.94 gal [22.5 l]	(3) 6.74 gal [25.5 l]	7.26 gal [27.5 l]	9.14 gal [34.6 l]	9.46 gal [35.8 l]	5.28 gal [20 l]	-
16	5.94 gal [22.5 l]	6.60 gal [25 l]	(4) 7.53 gal [28.5 l]	(1) 8.06 gal [30.5 l]	(1) 10.20 gal [38.6 l]	(1) 10.62 gal [40.2 l]	6.21 gal [23.5 l]	-
17	6.60 gal [25 l]	7.26 gal [27.5 l]	8.19 gal [31 l]	(2) 8.93 gal [33.8 l]	(2) 11.25 gal [42.6 l]	(2) 11.78 gal [44.6 l]	7.26 gal [27.5 l]	8.72 gal [33 l]
18	7.13 gal [27 l]	7.93 gal [30 l]	8.98 gal [34 l]	(3) 9.85 gal [37.3 l]	(3) 12.36 gal [46.8 l]	(3) 13.05 gal [49.4 l]	8.19 gal [31 l]	10.43 gal [39.5 l]
19	7.66 gal [29 l]	8.45 gal [32 l]	9.77 gal [37 l]	(4) 10.78 gal [40.8 l]	(4) 13.58 gal [51.4 l]	(4) 14.27 gal [54 l]	9.11 gal [34.5 l]	12.02 gal [45.5 l]
20	8.19 gal [31 l]	9.25 gal [35 l]	10.57 gal [40 l]	11.62 gal [44 l]	14.40 gal [54.5 l]	15.59 gal [59 l]	10.17 gal [38.5 l]	13.21 gal [50 l]
21	8.72 gal [33 l]	9.77 gal [37 l]	11.36 gal [43 l]	12.55 gal [47.5 l]	15.72 gal [59.5 l]	16.80 gal [63.6 l]	11.23 gal [42.5 l]	15.32 gal [58 l]
22	9.38 gal [35.5 l]	10.57 gal [40 l]	12.15 gal [46 l]	13.31 gal [50.4 l]	16.83 gal [63.7 l]	18.10 gal [68.5 l]	12.55 gal [47.5 l]	17.17 gal [65 l]
23	9.91 gal [37.5 l]	11.23 gal [42.5 l]	13.08 gal [49.5 l]	14.24 gal [53.9 l]	18.10 gal [68.5 l]	19.44 gal [73.6 l]	13.47 gal [51 l]	19.02 gal [72 l]

continues...

Table 9

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Water Volume per Water Level - With No Load – Cabinet Hardmount Models								
Water Level	**Machine Capacity**							
	7.5 kg / 20 lb / 80 L	**10.5 kg / 25 lb / 105 L**	**13.5 kg / 30 lb / 135 L**	**18 kg / 40 lb / 180 L**	**24 kg / 55 lb / 240 L**	**28 kg / 70 lb / 280 L**	**35 kg / 80 lb / 332 L**	**52 kg / 120 lb / 520 L**
24	10.57 gal [40 l]	11.89 gal [45 l]	14 gal [53 l]	15.16 gal [57.4 l]	19.28 gal [73 l]	20.74 gal [78.5 l]	14.66 gal [55.5 l]	21 gal [79.5 l]
25	11.10 gal [42 l]	12.55 gal [47.5 l]	14.79 gal [56 l]	16.14 gal [61.1 l]	20.53 gal [77.7 l]	22.14 gal [83.8 l]	15.98 gal [60.5 l]	22.72 gal [86 l]
26	11.76 gal [44.5 l]	13.21 gal [50 l]	15.72 gal [59.5 l]	17.04 gal [64.5 l]	21.74 gal [82.3 l]	23.70 gal [89.7 l]	17.17 gal [65 l]	24.96 gal [94.5 l]
27	12.28 gal [46.5 l]	13.87 gal [52.5 l]	16.51 gal [62.5 l]	18.04 gal [68.3 l]	22.9 gal [86.7 l]	25 gal [94.6 l]	(1) 18.49 gal [70 l]	(1) 26.81 gal [101.5 l]
28	12.81 gal [48.5 l]	14.53 gal [55 l]	17.30 gal [65.5 l]	18.94 gal [71.7 l]	24.15 gal [91.4 l]	26.34 gal [99.7 l]	(2) 19.55 gal [74 l]	(2) 28.66 gal [108.5 l]
29	13.47 gal [51 l]	15.19 gal [57.5 l]	18.10 gal [68.5 l]	19.92 gal [75.4 l]	25.39 gal [96.1 l]	27.71 gal [104.9 l]	(3) 20.87 gal [79 l]	(3) 30.51 gal [115.5 l]
30	-	15.85 gal [60 l]	19.02 gal [72 l]	20.90 gal [79.1 l]	26.63 gal [100.8 l]	29.19 gal [110.5 l]	(4) 22.32 gal [84.5 l]	(4) 32.89 gal [124.5 l]
31	-	-	-	-	-	-	23.51 gal [89 l]	34.74 gal [131.5 l]
32	-	-	-	-	-	-	24.83 gal [94 l]	36.72 gal [139 l]
33	-	-	-	-	-	-	26.29 gal [99.5 l]	38.97 gal [147.5 l]
34	-	-	-	-	-	-	27.61 gal [104.5 l]	41.21 gal [156 l]
35	-	-	-	-	-	-	28.93 gal [109.5 l]	43.46 gal [164.5 l]
36	-	-	-	-	-	-	30.12 gal [114 l]	45.83 gal [173.5 l]
37	-	-	-	-	-	-	31.57 gal [119.5 l]	47.82 gal [181 l]
38	-	-	-	-	-	-	33.02 gal [125 l]	50.19 gal [190 l]
39	-	-	-	-	-	-	34.34 gal [130 l]	52.57 gal [199 l]
40	-	-	-	-	-	-	35.80 gal [135.5 l]	54.95 gal [208 l]
41	-	-	-	-	-	-	37.12 gal [140.5 l]	57.06 gal [216 l]

continues...

Table 9

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Water Volume per Water Level - With No Load – Cabinet Hardmount Models								
Water Level	**Machine Capacity**							
	7.5 kg / 20 lb / 80 L	**10.5 kg / 25 lb / 105 L**	**13.5 kg / 30 lb / 135 L**	**18 kg / 40 lb / 180 L**	**24 kg / 55 lb / 240 L**	**28 kg / 70 lb / 280 L**	**35 kg / 80 lb / 332 L**	**52 kg / 120 lb / 520 L**
42	-	-	-	-	-	-	38.57 gal [146 l]	59.31 gal [224.5 l]
43	-	-	-	-	-	-	40.02 gal [151.5 l]	61.68 gal [233.5 l]
44	-	-	-	-	-	-	41.34 gal [156.5 l]	63.80 gal [241.5 l]
45	-	-	-	-	-	-	42.93 gal [162.5 l]	67.10 gal [254 l]
46	-	-	-	-	-	-	44.38 gal [168 l]	69.87 gal [264.5 l]
47	-	-	-	-	-	-	45.83 gal [173.5 l]	71.99 gal [272.5 l]
48	-	-	-	-	-	-	47.29 gal [179 l]	74.23 gal [281 l]
49	-	-	-	-	-	-	48.74 gal [184.5 l]	76.74 gal [290.5 l]
50	-	-	-	-	-	-	50.19 gal [190 l]	79.25 gal [300 l]
51	-	-	-	-	-	-	51.51 gal [195 l]	81.63 gal [309 l]
52	-	-	-	-	-	-	53.10 gal [201 l]	83.74 gal [317 l]
53	-	-	-	-	-	-	54.68 gal [207 l]	86.38 gal [327 l]
54	-	-	-	-	-	-	-	88.76 gal [336 l]
(1) Economic Low Level								
(2) Economic High Level								
(3) Normal Low Level								
(4) Normal High Level								

Table 9

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Hygienic Barrier 18-28 kg / 40-65 lb / 180-280 L

Water Volume per Water Level - With No Load – Hygienic Barrier Machines			
Water Level	**Machine Capacity**		
	18 kg / 40 lb / 180 L	**24 kg / 55 lb / 240 L**	**28 kg / 65 lb / 280 L**
7	-	-	-
8	-	-	-
9	3.70 gal [14 l]	3.72 gal [14.1 l]	4.90 gal [18.53 l]
10	4.41 gal [16.7 l]	4.54 gal [17.2 l]	5.87 gal [22.20 l]
11	5.20 gal [19.7 l]	5.42 gal [20.5 l]	6.91 gal [26.14 l]
12	5.97 gal [22.6 l]	6.39 gal [24.2 l]	7.91 gal [29.95 l]
13	(1) (2) 6.87 gal [26 l]	(1) (2) 7.42 gal [28.1 l]	(1) (2) 9.08 gal [34.37 l]
14	7.77 gal [29.4 l]	8.45 gal [32 l]	10.26 gal [38.83 l]
15	8.66 gal [32.80 l]	9.54 gal [36.1 l]	11.54 gal [43.68 l]
16	9.56 gal [36.2 l]	10.70 gal [40.5 l]	12.84 gal [48.62 l]
17	(3) 10.54 gal [39.9 l]	(3) 11.86 gal [44.9 l]	(3) 14.13 gal [53.48 l]
18	11.49 gal [43.5 l]	13.10 gal [49.6 l]	15.52 gal [58.74 l]
19	12.50 gal [47.3 l]	14.32 gal [54.2 l]	16.89 gal [63.92 l]
20	(4) 13.55 gal [51.3 l]	(4) 15.61 gal [59.1 l]	(4) 18.31 gal [69.30 l]
21	14.56 gal [55.1 l]	16.91 gal [64 l]	19.54 gal [73.97 l]
22	15.67 gal [59.3 l]	18.23 gal [69 l]	21.00 gal [79.50 l]
23	16.72 gal [63.3 l]	19.55 gal [74 l]	22.42 gal [84.87 l]
24	17.81 gal [67.4 l]	21 gal [79.5 l]	23.89 gal [90.43 l]
25	18.89 gal [71.5 l]	22.35 gal [84.6 l]	25.47 gal [96.42 l]
26	20 gal [75.7 l]	23.70 gal [89.7 l]	26.98 gal [102.13 l]
27	21.16 gal [80.1 l]	25.18 gal [95.3 l]	28.45 gal [107.69 l]
28	22.30 gal [84.4 l]	26.60 gal [100.7 l]	29.91 gal [113.24 l]
29	23.46 gal [88.8 l]	28.03 gal [106.1 l]	31.46 gal [119.08 l]

continues...

Table 10

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Water Volume per Water Level - With No Load – Hygienic Barrier Machines			
Water Level	**Machine Capacity**		
	18 kg / 40 lb / 180 L	**24 kg / 55 lb / 240 L**	**28 kg / 65 lb / 280 L**
30	24.70 gal [93.5 l]	29.48 gal [111.60 l]	33.08 gal [125.22 l]
(1) Economic Low Level			
(2) Economic High Level			
(3) Normal Low Level			
(4) Normal High Level			

Table 10

Barrier Machines 36-70 kg / 360-700L

Water Volume per Water Level - With No Load – Barrier Washer Machines			
Water Level	**Machine Capacity**		
	36 kg / 360 L	**50 kg / 500 L**	**70 kg / 700 L**
19	N/A	N/A	12.86 gal [48.68 l]
20	N/A	8.92 gal [33.75 l]	14.85 gal [56.22 l]
21	N/A	10.28 gal [38.91 l]	16.79 gal [63.55 l]
22	7.78 gal [29.46 l]	11.76 gal [44.51 l]	19.04 gal [72.09 l]
23	8.84 gal [33.47 l]	13.20 gal [49.95 l]	20.90 gal [79.13 l]
24	9.95 gal [37.67 l]	14.79 gal [55.99 l]	23.27 gal [88.09 l]
25	11.09 gal [41.99 l]	16.30 gal [61.69 l]	25.71 gal [97.33 l]
26	(1) 12.24 gal [46.34 l]	18.12 gal [68.58 l]	(1) 28.21 gal [106.79 l]
27	13.47 gal [51.02 l]	(1) 20.01 gal [75.73 l]	30.67 gal [116.11 l]
28	14.86 gal [56.24 l]	21.91 gal [82.93 l]	33.43 gal [126.56 l]
29	(2) 16.15 gal [61.14 l]	23.87 gal [90.36 l]	(2) 36.13 gal [136.78 l]
30	17.56 gal [66.47 l]	(2) 25.80 gal [97.65 l]	38.93 gal [147.37 l]
31	19.04 gal [72.06 l]	27.88 gal [105.53 l]	41.63 gal [157.60 l]
32	20.58 gal [77.92 l]	(3) 29.99 gal [113.52 l]	(3) 44.65 gal [169.03 l]
33	(3) 22.03 gal [83.38 l]	32.07 gal [121.38 l]	47.53 gal [179.9 1]
34	23.62 gal [89.43 l]	34.28 gal [129.76 l]	50.59 gal [191.49 l]
35	25.09 gal [94.96 l]	(4) 36.47 gal [138.06 l]	(4) 53.62 gal [202.96 l]
36	(4) 26.68 gal [101.01 l]	38.67 gal [146.37 l]	56.89 gal [215.34 l]
37	28.43 gal [107.62 l]	41.07 gal [155.48 l]	59.90 gal [226.77 l]

continues...

Table 11

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Water Volume per Water Level - With No Load – Barrier Washer Machines			
Water Level	**Machine Capacity**		
	36 kg / 360 L	**50 kg / 500 L**	**70 kg / 700 L**
38	29.78 gal [112.74 l]	43.24 gal [163.69 l]	63.04 gal [238.63 l]
39	31.47 gal [119.13 l]	45.56 gal [172.48 l]	66.72 gal [252.57 l]
40	33.14 gal [125.44 l]	48.04 gal [181.87 l]	70.06 gal [265.19 l]
41	34.84 gal [131.88 l]	50.37 gal [190.69 l]	73.31 gal [277.52 l]
42	36.84 gal [139.47 l]	53.21 gal [201.41 l]	77.72 gal [294.20 l]
43	38.47 gal [145.62 l]	55.88 gal [211.53 l]	81.59 gal [308.84 l]
44	40.45 gal [153.13 l]	58.75 gal [222.40 l]	86.13 gal [326.04 l]
45	42.40 gal [160.49 l]	61.29 gal [232.01 l]	89.30 gal [338.05 l]
46	44.34 gal [167.84 l]	64.39 gal [243.73 l]	93.86 gal [355.29 l]
47	46.40 gal [175.63 l]	66.90 gal [253.26 l]	97.61 gal [369.51 l]
48	48.17 gal [182.36 l]	69.60 gal [263.45 l]	101.86 gal [385.60 l]
49	50.34 gal [190.56 l]	72.26 gal [273.55 l]	105.89 gal [400.82 l]
50	52.50 gal [198.72 l]	75.20 gal [284.66 l]	109.74 gal [415.42 l]
51	54.80 gal [207.44 l]	78.54 gal [297.29 l]	114.19 gal [432.25 l]
52	56.88 gal [215.30 l]	81.52 gal [308.57 l]	118.75 gal [449.52 l]
53	58.69 gal [222.18 l]	84.20 gal [318.72 l]	122.50 gal [463.71 l]
54	61.16 gal [231.51 l]	86.99 gal [329.28 l]	126.47 gal [478.76 l]
55	63.30 gal [239.63 l]	90.02 gal [340.75 l]	131.47 gal [497.68 l]
56	65.41 gal [247.61 l]	92.71 gal [350.93 l]	135.61 gal [513.35 l]
57	67.39 gal [255.09 l]	95.69 gal [362.22 l]	139.76 gal [529.05 l]
58	69.50 gal [263.10 l]	98.51 gal [372.90 l]	143.96 gal [544.93 l]
59	71.87 gal [272.05 l]	101.33 gal [383.56 l]	148.30 gal [561.36 l]
60	73.94 gal [279.89 l]	104.31 gal [394.84 l]	152.61 gal [577.69 l]
61	75.84 gal [287.10 l]	107.08 gal [405.35 l]	156.94 gal [594.07 l]
62	78.10 gal [295.65 l]	110.15 gal [416.98 l]	161.69 gal [612.06 l]
63	80.03 gal [302.95 l]	112.88 gal [427.30 l]	166.02 gal [628.46 l]
64	82.60 gal [312.66 l]	115.62 gal [437.67 l]	169.72 gal [642.46 l]
65	84.45 gal [319.6875 l]	118.60 gal [448.9425 l]	173.92 gal [658.325 l]
(1) Economic Low Level			

continues...

Table 11

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Water Volume per Water Level - With No Load – Barrier Washer Machines			
Water Level	**Machine Capacity**		
	36 kg / 360 L	**50 kg / 500 L**	**70 kg / 700 L**
(2) Economic High Level			
(3) Normal Low Level			
(4) Normal High Level			

Table 11

Programmable Water Level

Programmable Water Level				
Machine Type	**Minimum Programmable Level**	**Normal Low Level Default Value**	**Normal High Level Default Value**	**Maximum Programmable Level**
Cabinet Freestanding				
6.5 kg / 14 lb / 65 L	9	13	14	29
7.5 kg / 20 lb / 80 L	9	14	15	29
10.5 kg / 25 lb / 105 L	9	14	15	30
13.5 kg / 30 lb / 135 L	9	15	16	30
18 kg / 40 lb / 180 L	7	18	19	30
24 kg / 55 lb / 240 L	7	18	19	30
28 kg / 70 lb / 280 L	7	18	19	30
35 kg / 350 L	34	45	47	80
45 kg / 450 L	34	46	49	80
60 kg / 600 L	28	42	47	80
33 kg / 75 lb / 335 L	33	48	50	80
40 kg / 90 lb / 400 L	34	47	50	80
55 kg / 125 lb / 520 L	34	47	52	80
80 kg / 180 lb / 800 L	27	44	49	72
100 kg / 230 lb / 1000 L	30	43	47	70
120 kg / 275 lb / 1200 L	30	46	52	70
Cabinet Hardmount				
7.5 kg / 20 lb / 80 L	9	14	15	29
10.5 kg / 25 lb / 105 L	9	14	15	30
13.5 kg / 30 lb / 135 L	9	15	16	30

continues...

Table 12

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Programmable Water Level				
Machine Type	**Minimum Programmable Level**	**Normal Low Level Default Value**	**Normal High Level Default Value**	**Maximum Programmable Level**
18 kg / 40 lb / 180 L	7	18	19	30
24 kg / 55 lb / 240 L	7	18	19	30
28 kg / 70 lb / 280 L	7	18	19	30
35 kg / 80 lb / 332 L	15	29	30	53
52 kg / 120 lb / 520 L	17	29	30	54
Hygienic Barrier Washers				
18 kg / 40 lb / 180 L	9	17	20	30
24 kg / 55 lb / 240 L	9	17	20	30
28 kg / 65 lb / 280 L	9	17	20	30
36 kg / 360 L	22	33	36	60
50 kg / 500 L	20	32	35	60
70 kg / 700 L	19	32	35	60

Table 12

Speed of Machines with Frequency Inverter

Speed of Machines with Frequency Inverter								
Machine Type	**Wash Speed**			**Spin Speed**				**Low Spin Speed**
	Default RPM	**Minimum RPM**	**Maximum RPM**	**Default RPM**	**Minimum RPM**	**Locking RPM**	**Maximum RPM**	**Default RPM**
Cabinet Freestanding								
6.5 kg / 14 lb / 65 L (G-factor 100) - 7 mm drum perforation	50	10	60	540	150	91-149	580	250
6.5 kg / 14 lb / 65 L (G-factor 400)	50	10	60	1120	150	91-149	1165	250
7.5 kg / 20 lb / 80 L (G-factor 100) - 7 mm drum perforation	50	10	60	540	150	91-149	580	250
7.5 kg / 20 lb / 80 L (G-factor 400)	50	10	60	1120	150	91-149	1165	250

continues...

Table 13

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Speed of Machines with Frequency Inverter								
Machine Type	Wash Speed			Spin Speed				Low Spin Speed
	Default RPM	Minimum RPM	Maxi-mum RPM	Default RPM	Minimum RPM	Locking RPM	Maxi-mum RPM	Default RPM
10.5 kg / 25 lb / 105 L (G-factor 100) - 7 mm drum perforation	46	10	60	500	150	91-149	540	250
10.5 kg / 25 lb / 105 L (G-factor 400)	46	10	60	1035	150	91-149	1075	250
13.5 kg / 30 lb / 135 L (G-factor 100) - 7 mm drum perforation	46	10	60	500	150	91-149	540	250
13.5 kg / 30 lb / 135 L (G-factor 400)	46	10	60	1035	150	91-149	1075	250
18 kg / 40 lb / 180 L (G-factor 100) - 7 mm drum perforation	42	10	60	875	150	91-149	915	250
18 kg / 40 lb / 180 L (G-factor 400)	42	10	60	940	150	91-149	980	250
24 kg / 55 lb / 240 L (G-factor 100) - 7 mm drum perforation	42	10	60	450	150	91-149	490	250
24 kg / 55 lb / 240 L (G-factor 400)	42	10	60	940	150	91-149	980	250
28 kg / 70 lb / 280 L (G-factor 350)	42	10	55	875	150	91-149	915	250
35 kg / 350 L (G-factor 360)	38	10	45	790	75	130-300	839	550
45 kg / 450 L (G-factor 360)	38	10	45	790	75	130-300	839	550
60 kg / 600 L (G-factor 360)	36	10	42	745	70	130-300	788	520
33 kg / 75 lb / 335 L (G-factor 350)	038	010	045	790	75	351-449	830	550
40 kg / 90 lb / 400 L (G-factor 350)	038	010	045	790	75	351-449	830	550
55 kg / 125 lb / 520 L (G-factor 350)	038	010	045	790	75	351-449	830	550
80 kg / 180 lb / 800 L (G-factor 350)	036	010	045	720	75	351-449	750	550

continues...

Table 13

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Speed of Machines with Frequency Inverter								
Machine Type	Wash Speed			Spin Speed				Low Spin Speed
	Default RPM	Minimum RPM	Maximum RPM	Default RPM	Minimum RPM	Locking RPM	Maximum RPM	Default RPM
100 kg / 230 lb / 1000 L (G-factor 350)	033	010	045	690	75	351-449	722	550
120 kg / 275 lb / 1200 L (G-factor 350)	032	010	045	660	75	351-449	695	550
Cabinet Hardmount								
7.5 kg / 20 lb / 80 L (G-factor 100)	50	10	60	530	150	91-149	580	250
10.5 kg / 25 lb / 105 L (G-factor 100)	46	10	60	490	150	91-149	540	250
13.5 kg / 30 lb / 135 L (G-factor 100)	46	10	60	490	150	91-149	540	250
18 kg / 40 lb / 180 L (G-factor 100)	42	10	55	440	150	91-149	490	250
24 kg / 55 lb / 240 L (G-factor 100)	42	10	55	440	150	91-149	490	250
28 kg / 70 lb / 280 L (G-factor 100)	42	10	55	440	150	91-149	490	250
28 kg / 70 lb / 280 L (G-factor 200)	42	10	55	640	150	91-149	690	250
35 kg / 80 lb / 332 L (G-factor 100)	38	10	55	390	150	91-149	440	250
35 kg / 80 lb / 332 L (G-factor 150)	38	10	55	490	150	91-149	540	250
52 kg / 120 lb / 520 L (G-factor 100)	38	10	55	390	150	91-149	440	250
Hygienic Barrier Washers								
18 kg / 40 lb / 180 L (G-factor 370)	42	10	55	900	150	91-149	939	370
24 kg / 55 lb / 240 L (G-factor 370)	42	10	55	900	150	91-149	939	370
28 kg / 65 lb / 280 L (G-factor 350)	42	10	55	870	150	91-149	914	370
36 kg / 360 L (G-factor 350)	41	10	50	880	80	160-190	900	550

continues...

Table 13

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Speed of Machines with Frequency Inverter								
Machine Type	Wash Speed			Spin Speed				Low Spin Speed
	Default RPM	Minimum RPM	Maximum RPM	Default RPM	Minimum RPM	Locking RPM	Maximum RPM	Default RPM
50 kg / 500 L (G-factor 350)	41	10	50	880	80	100-160	900	550
70 kg / 700 L (G-factor 350)	41	10	50	880	80	100-160	900	550

Table 13

Programming the Wash Speed

- Standard reversing wash speed is between 40 and 50 RPM. Exact values can be found in *Table 13*.
- For some special applications the drum should only turn very slowly.

Speed Limits

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

Programming Extraction Speed

Extraction [150 - 1165] RPM

- Between 90 and 150 RPM . Refer to *Table 13* to verify exact value. It's not allowed to program a steady speed, as the machine could VIBRATE TOO MUCH.

Speed Limits

- Refer to *Table 13* which contains the minimum and maximum speed limits. The limits differ depending on the maximum allowed g-force at high spin for each washing machine type.

Programming Supplies

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

Time Limits

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

NOTE: If for some special application more than 4 supplies must be programmed in the same sequence, this can be solved by programming the same sequence twice; one after the other. Split the water level (so it will take water for the second fill, say 60%, 100%), step time, and the number of supplies, over the two subsequent sequences. Program A "NO DRAIN" between the two sequences to avoid draining the water. Set temperature the same for both parts.

Programming the Motor On and Off Times for Reversing

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

Programming the Sequence Time

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

Recommendation:

At least a cooldown of 3 minutes must be programmed. And to avoid the shrinking of the garments, it's recommended to program the time so that the temperature will decrease with about 37.4°F [3°C] for each minute.

NOTE: For a spray sequence, if a supply has been programmed, the sequence time corresponds with the programmed supply time.

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Signal

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

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Initializing the Machine

Initializing the Machine Goes in Four Steps:

1. Install the machine mechanically. Refer to Installation/Operation/Maintenance Manual.
2. Select the machine specific settings in the Configuration Menu.
3. Select the operator specific settings in the Initialization Menu.
4. Adjust standard Programs or create new Programs at the Program Menu.

WARNING

The initialization should be performed by qualified personnel only. An incorrect initialization may cause serious injuries and serious damage to the machine!

C026

WARNING

Before making changes in the configuration and initialization menu read this manual carefully.

C027

Changes you have made will influence the wash program processes.

We recommend before making changes to carefully write down what the previous settings were.

As the wash computer is used for a whole range of washing machines, after the installation of a new wash computer, you need to program machine specific settings into the configuration menu.

At the installation of new software, after loading the factory settings you need to check the default settings one by one to find out if they correspond with the setup as you prefer.

The configuration and initialization of the washing machine has been done at the factory. For the creation of new programs, no changes have to be made in the initialization or configuration menus.

Initialization Menu

How to Get into the Initialization Menu

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

- Select Cycle is displayed.
- Switch the machine to the setup mode. Refer to section *How to Get into the Setup Mode*.
- The Main menu is now available.
- The Initialization Menu is the first Menu.

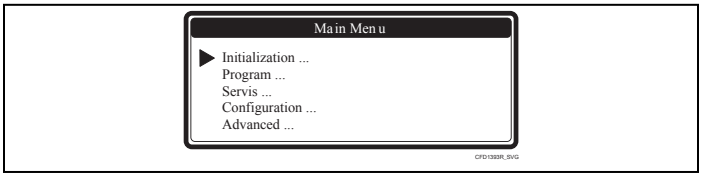


Figure 12

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

Initialization Menu			
Display Message	**Default**	**Information**	**Limits**
Language	**English**	Language selection: English, Spanish, French,…	List
Service Interval	**3000**	Number of cycles at which maintenance is required. 3000 : top soap dispenser machines 9990 : front soap dispenser machines 9999 : the servicing interval is ignored	1 - 9999
Buzzer Time	**5 seconds**	The time the Buzzer is beeping at end of wash cycle while "Unload" is displayed.	0 - 99

continues...

Table 14

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Initialization Menu			
Display Message	**Default**	**Information**	**Limits**
Allow Advance	**Yes**	The Advance function allows to Skip a Sequence or to extend & decrease the time of a sequence.	No / Yes
Automatic Cooldown	**Yes**	Automatic Cooldown (*) selection.	No / Yes
Wait for Temperature	**Yes**	Wash Process time is put on Hold as long as the programmed temperature hasn't been reached. Once the temperature has been reached, the wash cycle time will decrease.	No / Yes
Manual Override	**Yes**	Activates special functions in the Service Information menu. The operator can directly operate the water inlet, drain, heating and spin speed functions. **NOTE: The particular functions can only be used if the safety conditions are fulfilled. For example: if there is no water in the drum, the heating function cannot be activated.**	No / Yes
Temperature Balance	**No**	The right water temperature at the water fill process is obtained by switching the cold and hot water inlet valves. For high temperatures extra heating will be required after the fill process. For some special customer applications, it is allowed to switch off the automatic Temperature Balance control. **Cabinet Freestanding: 33-40-55-80-100-120 kg / 75-90-125-180-230-275 lb / 335-400-520-800-1000- 1200 L : Yes**	No / Yes
Motor On Time	**12 seconds**	At normal wash action, drum turns for 12 seconds. Recommended 3 seconds for Gentle wash action (= suggested values for the program menu).	1 - 99 seconds
Motor Off Time	**3 seconds**	At normal wash action, drum is stopped for 3 seconds. Recommended 12 seconds for Gentle wash action (= suggested values for the program menu). **Cabinet Freestanding: 80-100-120 kg / 180-230- 275 lb / 800-1000-1200 L : 5 seconds off time**	1 - 99 seconds
Smart Motion	**No**	This option decreases the drum R.P.M. during water filling therefore the laundry absorbs water more quickly and washing efficiency increases. **Cabinet Freestanding: 33-40-55-80-100-120 kg / 75-90-125-180-230-275 lb / 335-400-520-800-1000- 1200 L : Yes**	No / Yes
Hot Water Heater Temp.	**140°F [60 °C]**	The Hot Water Heater Temperature should correspond with the hot water supply of the washing machine. The value of the hot water supply temperature is required to obtain a correct bath temperature at the water fill process.	122 - 176 °F [50 - 80 °C]

continues...

Table 14

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Initialization Menu			
Display Message	**Default**	**Information**	**Limits**
Temp. Overshoot Prot.	**0 %**	To avoid temperature overshoot at steam heating, the % value is the reduced temperature at which the heating is switching off before reaching the target value. In the tub cold and hot water gets mixed and if after 30 seconds the programmed target temperature is not reached, the heating will be started again.	0 - 30 %
Max. Heating Time	**60 Minutes**	A diagnostic message is generated by the wash computer when the water hasn't reached the programmed temperature in 60 Minutes. (Err 14). **NOTE: If 99 minutes has been selected, NO error message will be generated at all, even if the heating time exceeds 99 minutes. The machine will only stop heating when the programmed temperature has been reached.**	10 - 90 Minutes
Heat.Err.Det.Time	**10 Minutes**	If Wait for Temperature has been enabled, Error 13 will appear in the control's display if the water temperature doesn't increase by 5.4°F [3°C] within the programmed amount of time.	10 - 20 Minutes
Max. Water Fill Time	**10 Minutes**	A diagnostic message is generated by the wash computer when the water hasn't reached the programmed level in 10 Minutes. (Err 11). **NOTE: If 99 minutes has been selected, NO error message will be generated at all, even if the heating time exceeds 99 minutes. The machine will only stop filling when the programmed water level has been reached.**	5 - 99 Minutes
Overfill Detection	**5 units**	A diagnostic message is generated by the wash computer when the water has reached the programmed level + 5 units. (Err 12). **NOTE: It's strongly recommended that the heating power of the steam installation has enough power to heat the bath quickly. Otherwise the tub will be filled with extra water and an error message will occur that the machine takes more then 5 units extra water. This will also increase the water, energy and detergent supply consumption.** To solve the problem in another way, reduce the programmed target water level so that less energy is needed to heat up the bath and with the extra water of the condensed steam you will wash with a normal amount of water. **Cabinet Freestanding: 33-40-55 kg / 75-90-125 lb / 335-400-520 L: 10 units** **Cabinet Freestanding: 80-100-120 kg / 180-230-275 lb / 800-1000-1200 L: 25 units**	3 - 25 units

continues...

Table 14

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Initialization Menu			
Display Message	**Default**	**Information**	**Limits**
External Wait Control	**Off**	Liquid soap supply system: Selection for a washing machine connected to a central liquid soap supply system. Some washing machines are connected to a central liquid soap supply system which can only provide 1 washing machine at a time with liquid soap. This central pump system is able to let Wait the washing machine before continuing the wash process until the central pump system is free to pump the liquid soap supply into the machine. Heating, (for installations with limited power supply): You can disable the heating system of the machine by an external signal. The heating will switch on again and the wash process will continue as soon as the external signal is switched off. **Wait:** External signal suspends the whole wash process until the external signal gets switched off. **Time:** External signal stops the count-down of washing process. All functions of wash cycle continue. When the external signal stops, the count-down will continue in a standard manner.	Off / Soap / Heating / Wait / Time
Extra Soap Timing	**0 Seconds (Off)**	When enabled, this feature allows the soap dispenser valves to open individually for the programmed time.	0 - 20 Seconds
Door Position Dirty Tune	**5**	**Hygienic Barrier Machines only** At the end of the wash cycle the drum is automatically positioned for loading & unloading.	0-9
Door Position Hyg. Tune	**5**	**Hygienic Barrier Machines only** By the value "Door Position Dirty Tune" & "Door Position Hyg. Tune", the angle between the drum door and cabinet door can be adjusted. (To allow easier loading & unloading.)	
Prewash Soap Info	**Yes**	Selection whether the information on soap dosage for prewash should be shown or not.	No / Yes
Wash Liquid Soap Info	**Yes**	Selection whether the information on liquid soap dosage for the main wash should be shown or not.	No / Yes

continues...

Table 14

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Initialization Menu			
Display Message	**Default**	**Information**	**Limits**
Main Water Pressure	**High**	**Front Soap Dispenser machines only.** If the main water supply pressure is low, it can happen that the plastic soap boxes don't fall during the water intake sequence. In this case you should select "Main Water Pressure": "Low" = main water inlet is closed before the plastic soap box falls down. "High" = the main water inlet stays open.	Low / Medium / High
Step info	**No**	Selection whether the current operating step shall be viewed on the display.	No / Yes
Show Step Temp.	**Yes**	Selection whether the requested step temperature is displayed in program overview screen.	No / Yes
Valve Close Time	**0**	It is the time that the valves will close in advance.	0.99 second
Exit		Return to Main Menu.	

(*) Automatic Cooldown

To avoid mechanical temperature shock and to extend the life time of your washing machine, after a hot wash, cold water is temperature will be lowered to about 149°F [65°C] .

The automatic cooldown function will only be functional if a hot wash with a temperature above 149°F [65°C] has been programmed and if a cold water inlet valve is programmed in the next step. When a Cooldown sequence has been programmed, the automatic cooldown will not function.

The automatic cooldown differs from a normal cooldown sequence. The purpose of a normal cooldown sequence is to avoid the shrinking of the garments. (Takes more time). Refer to section *Programming*.

Table 14

Configuration Menu

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

WARNING

Only a qualified technician should change the configuration set up. An incorrect configuration can cause injuries and serious machine damage.

C028

How to Get into the Configuration Menu

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

- SELECT CYCLE is displayed.
- Switch the machine to the setup mode. Refer to section *How to Get into the Setup Mode*.
- The Main Menu is now available.
- Press the ARROW DOWN button to select the Configuration Menu.

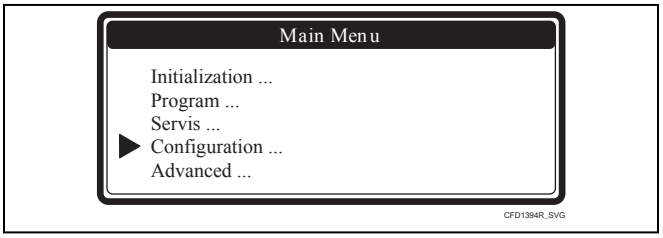


Figure 13

- Press the ENTER button to make your selection.
- For the Configuration Menu a password is required.

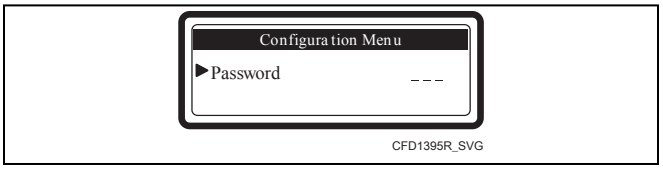


Figure 14

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Passwords

- Insert **214** for North American models, starting software version 771.214.0, through software version 771.216.3 and Press the **ENTER** button.
- Insert **412** for North American models that start with a “U”, starting software version 771.217.0 and Press the **ENTER** button.
- Insert **658** for North American models that start with a “S”, starting software version 771.217.0 and Press the **ENTER** button.
- Insert **714** for North American models that start with a “H”, starting software version 771.217.0 and Press the **ENTER** button.
- Insert **214** for models outside of North America that start with a “U” starting software version 771.214.0, through software version 771.216.3 and Press the **ENTER** button.
- Insert **314** for models outside of North America that start with a “U”, starting software version 771.217.0 and Press the **ENTER** button.
- Insert **856** for models outside of North America that start with a “S” starting software version 771.214.0 and Press the **ENTER** button.
- Insert **856** for models outside of North America that start with a “H” starting software version 771.214.0, through software version 771.216.3. and Press the **ENTER** button.
- Insert **417** for models outside of North America that start with a “H”, starting software version 771.217.0 and Press the **ENTER** button.
- Now you will see the first menu item.
- By pressing the **ARROW DOWN** or **UP** button you can select the menu items one by one.

Configuration Menu			
Display Message	**Default**	**Information**	**Limits**
Machine Type **Are You Sure ?**	**XXXX** **No**	The machine type was set by the manufacturer and it cannot be changed. Machine type setting can only be done on a newly installed control board which has not been configured yet. Select the right machine type. • Look at Machine Name Plate at the rear of the washing machine. • Confirm selection of the machine type. **NOTE: Reset Defaults must (only) be executed for each new installed wash Computer and after selecting a new machine type. This will ensure correct EEPROM memory configuration!** **NOTE: Make sure that you have selected the correct machine type. There is only one correct setting for machine type. If the wrong machine type was selected, replace the display board or send it to the factory for repair.**	List No / Yes
Reset Defaults ? **Are You Sure ?**	**No** **No**	All the Initialization and Configuration Menu Settings will be reset to its default Factory settings. Should only be used at SETUP of a new wash computer. • Confirm that you want to Reset Defaults. **NOTE: Reset Defaults must (only) be executed for each new installed wash Computer and after selecting a new machine type, to ensure correct EEPROM memory configuration!** **NOTE: Be sure you want to erase the old settings, as they can´t be recaptured.**	No / Yes No / Yes
Brightness Display	**12**	The brightness of the display is changed by adjusting the contrast of the optimal viewing angle.	1 - 20

continues...

Table 15

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Configuration Menu			
Display Message	**Default**	**Information**	**Limits**
Inverter Menu…		**NOTE: The washing machine can only operate correctly if the correction inverter (same as washing machine) has been set in the Configuration menu.**	
Supply Voltage XXXXXXX **(Inverter Type)**	**No**	Select the correct inverter. • Look at Machine Name Plate on the rear of the washing machine. • Select the Supply Voltage as shown on the Machine Name Plate. The frequency inverter will be selected by default. • Check Inverter Type. **NOTE: The washing machine can only perform properly if the inverter contains the right list of inverter parameters. By the wash computer it is possible to load the list of parameters in the inverter. Make sure that the correct Supply Voltage has been selected first.**	List
New Motor	**Yes**	Selection of motor type In 08/2018 new motor type was introduced in production. During inverter parameters loading it must be selected correct motor type installed in machine. Only Hardmount machine 7.5kg / 20 lb /80L.	No / Yes

Load Param… Are You Sure ?	**No**	**NOTE: Loading parameters is only required after installing a new inverter.**
		Load the inverter Parameters.
		• Door must be closed.
		• Check if the SETUP is correct.
		  • Parameter List Version
		  • Machine type, inverter type, software version
		• Confirm that you want to load the inverter Parameters.
		• Check status screen while parameters are loaded.
		  • Sending Param.: 0 - 100 %
		  • Verify Param: 0 - 100 %
		  • Auto Tuning: 0-100% (only Cabinet Freestanding: 40-55 kg/ 90-125lb/400-520L)
			No / Yes

continues...

Table 15

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Configuration Menu			
Display Message	**Default**	**Information**	**Limits**
Total Number of Inlets	**2**	A washing machine can be delivered with 2 or 3 main water Inlet supplies. A machine with 2 main water inlet supplies is prepared for: • soft warm water • soft cold water A machine with 3 main water inlet supplies is prepared for: • soft warm water • soft cold water • hard or recycled cold water Depending on this selection other inlet valves will be suggested at the final rinse sequence. Depending on this selection other inlet valves will be programmed when the standard programs are loaded. **Cabinet Freestanding: 33-40-55-80-100-120 kg / 75-90-125-180-230-275 lb / 335-400-520-800-1000- 1200 L : 3**	2 / 3
HopperLess Machine	**No**	Water inlets in a hopperless washer system are redirected according to this formula: 3 water inlets machines: I5 = I5 OR I6 OR I8 I4 = I4 OR I7 I1 = I1 OR I2 OR I3 2 water inlets machines: I5 = I5 OR I6 OR I8 I1 = I1 OR I2 OR I3 OR I4	FX65 / 80 / 105 / 135 / 180 / 240 only
Two Drain Valves	**No**	If the machine has 2 drain valves You must select Yes. **Cabinet Freestanding: 24 kg / 55kg / 240 L (G-factor 400) and 28 kg / 70 lb / 280 L (G-factor 350)**	No / Yes
Drain Val.1 Inverted	**No**	If a drain valve 1 with inverted function (normally closed) or a pump is used on the machine, then this item must be set to “Yes”.	No / Yes
Drain Valve 2	**No**	Some machines with water recovery are equipped with a second drain valve. If this second drain valve is a normal Closed drain Valve, then drain valve 2 must be Selected Yes.	No / Yes

continues...

Table 15

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Configuration Menu			
Display Message	**Default**	**Information**	**Limits**
Water Recycle Inlets	**0**	**Front Soap Dispenser machines only.** First select menu item "Drain valve 2". By selecting "Water Recycle Inlets" 1 / 2 / 3 it's possible to program 1 / 2 / 3 extra water inlet valves I4, I5, I6 in the wash sequences and 3 extra outlet vales for water recycling combined with pump in the drain extraction sequences. **NOTE: Some machines need additional electrical components to complete installation Water Recovery!** **Cabinet freestanding: 80-100-120 kg / 180-230-275 lb / 800-1000-1200 L : Only two inlet valves of recycled water can be set.**	0 / 1 / 2 / 3
Supply Sign. A	**Box**	**Front Soap Dispenser machines only.** If equipped with soap supply pump for supply signals A, B, C, D & E , the signal must be set liquid, then NO pulse will interrupt the soap supply signal. Supply Sign A corresponds with the First Soap Box. … Supply Sign E corresponds with the Fifth Soap Box.	Box / Liquid
Liquid Soap Supply	**No**	Some washing machines function with external Liquid soap supplies and others do not. To program External Liquid soap supplies at the Program Menu, this selection must be Yes.	No / Yes
Min. Level Start Sup.	**5 units**	Soap Supply signals are only started when the pre-set "Minimum water level Start Supply" has been reached. Refer to *Table 13*, minimum programmable levels. **NOTE: Setting a low or even 0 level increases the risk of chemical corrosion of the drain valve and the hose between the tub and drain valve as undiluted detergents will get in contact with these parts.**	0 - Minimum progr. level
Temperature	**Celsius**	Select Celsius or Fahrenheit, depending if you prefer that the temperature is displayed in degrees Celsius or degrees Fahrenheit.	Celsius / Fahrenheit

continues...

Table 15

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Configuration Menu			
Display Message	**Default**	**Information**	**Limits**
Full Heating	**1 %**	This function allows to reduce the energy consumption at long hot washes. When the heating has reached the programmed target temperature, heating will be restarted when the bath temperature goes below the temperature hysteresis. • Full Heating 100 %, the heating will be restarted until the end of the hot wash sequence. • Full Heating 1 %, the heating will not be restarted once the target temperature has been reached. • Full Heating 67 %, the heating will be switched Off 1/3 before the end of the hot wash sequence. **NOTE: In case of a hygienic program, 100% must be selected.** **Cabinet Freestanding:33-40-55-80-100-120 kg / 75-90-125-180-230-275 lb / 335-400-520-800-1000- 1200 L : 67%**	- 100 %
Wet Cleaning	**No**	Selection Wet Cleaning allows to program water levels below the standard minimum programmable levels. The heating will not be functional for a water level below the standard minimum programmable water level.	No / Yes
Ultrabal.Settings	**10**	**Cabinet Freestanding 7kg - 28 kg / 14-70 lb / 65-280 L only.** Setting the limit of unbalance detection during the spinning sequence.	10 / 15
Model Type	**Standard Model**	**Hygienic Barrier Machines only 36-50kg/360-500L.**	Non-barrier Model/standard model/Pullman
Lock Timer (0.1s)	**15**	**Hygienic Barrier Machines only 36-50-70 kg / 360-500-700 L Time (1,5 - 2.5 seconds) of bolt movement from-into a drum position lock disk.**	15-25
Second Display	**No**	**Hygienic Barrier Machines only.** If the second display is installed on hygienic side (unloading side) then Yes must be selected.	No / Yes
Erase All Wash Prog ? **Are You Sure ??**	**No** **No**	Allows erasing all the wash programs at once. To be used only at the installation of a new wash computer and if you want to ensure that no old programs stay in the memory of the wash computer anymore. All the memory Blocks will be cleared one by one. **NOTE: Erase All Wash Programs must be executed for each new installed wash Computer, to ensure correct EEPROM memory configuration!**	No / Yes

continues...

Table 15

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

Table 15

Advanced Menu

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

How to Get into the Advanced Menu

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

- SELECT CYCLE is displayed.
- Switch the machine to the setup mode. Refer to section *How to Get into the Setup Mode.*
- The Main menu is now available.

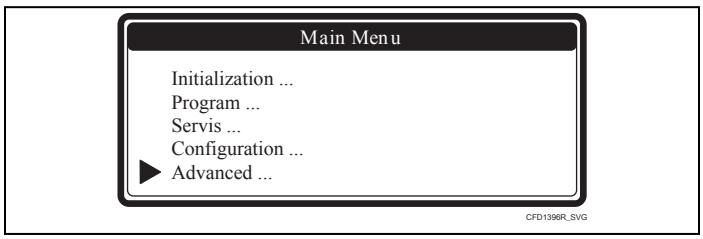


Figure 15

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

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

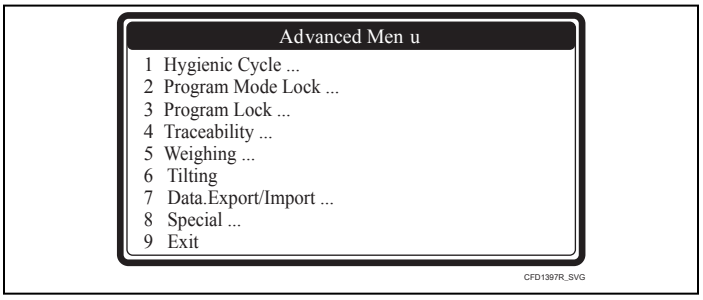


Figure 16

Hygienic Cycle Menu

Strict Temperature Control

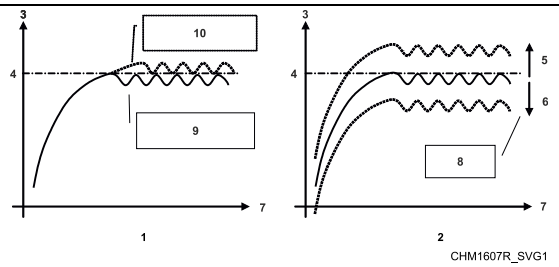
In normal operation, the washing machine heating system works with a temperature control hysteresis below the programmed target temperature value.

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Some washing machine operators want strict temperature control for hygienic wash cycles.

Example: this means when 158°F [70°C] 158°F [70°C] is programmed, the linen must be washed at a temperature that doesn't drop below 158°F [70°C] . This solution is possible by switching on the "Strict Temperature Control" function. In this case the wash computer works with a temperature control with a hysteresis above the programmed temperature value.

Strict Temperature Control is not applicable for delicates and woolens, and will not work for a programmed temperature < 86°F [30°C] .



1. Strict Temperature Control
2. Temperature Calibration Offset
3. Water temperature
4. Target Temperature Calibration
5. Target Temperature Calibration: +9°F or +5°C
6. Target Temperature Calibration: -9°F or -5°C
7. Time
8. Offset adjustment
9. Normal Temperature Control
10. Strict Temperature Control

Figure 17

Temperature Calibration Offset

The temperature sensor of the washing machine can be calibrated with an external temperature measurement device as reference. The temperature sensor value can be adjusted in a range of +9°F or +5°C and -9°F or -5°C.

For normal washing machine use such calibration is not required.

Hygienic Cycle Menu			
Display Message	**Default**	**Information**	**Limits**
Strict Temp. Control	**No**	Strict Temperature Control ensures that the fabrics are washed at same value as the programmed target temperature.	No / Yes
Temp. Calib. Offset	**0**	By changing the Temperature Calibration Offset value the water temperature sensor value is adjusted so that it gets equal with the value of an external reference temperature sensor.	+9°F or +5°C -9°F or -5°C
Hygienic Water Level	**No**	This option activates the mode of more accurate checks of the required water level during the washing procedure.	No / Yes
Exit		Return to Advanced Menu.	

Table 16

Program Mode Lock Menu

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

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Program Mode Lock Menu			
Display Message	**Default**	**Information**	**Limits**
Password	**None**	Enter a 4 digit value for the Password and press ENTER. **NOTE: The Password will not be requested if it has not been set.**	0000 - 99999
Edit Password …			
New Password ….		Insert a 4 digit numeric value to create a new password.	
No Password …		Select the menu item "No Password" if you want to get rid of the Password.	
Old Password ….		To change the Password insert first the old Password, then you are invited to create a new Password.	
Exit		Return to Advanced Menu	

Table 17

Program Lock Menu

Each wash program can be locked individually.

When the program is locked, it means no settings can be changed anymore.

It avoids that programs once created get changed by somebody else.

To get access to this menu a password is needed if it has been set.

Program Lock Menu			
Display Message	**Default**	**Information**	**Limits**
Password	**None**	Enter a 4 digit value for the Password and press ENTER. **NOTE: The Password will not be requested if it has not been set.**	0000 - 99999
Programs …	**Unlocked**	Each program can be locked – unlocked individually. When the program is locked, it means no Program settings can be changed anymore. It avoids that programs once created get changed by somebody else.	
1 HOT 194°F [90°C] INTENS (Unlocked) **2 WARM 140°F [60°C] INTENS (Locked)**			
99 Program 99	**Unlocked**		

continues...

Table 18

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Program Lock Menu			
Display Message	**Default**	**Information**	**Limits**
EXIT			
Edit Password …			
New Password ….		Insert a 4 digit numeric value to create a new password.	
No Password …		Select the menu item "No Password" if you want to get rid of the Password.	
Old Password ….		To change the Password insert first the old Password, then you are invited to create a new Password.	
Exit		Return to Advanced Menu	

Table 18

Traceability Menu

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

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

For more information about traceability refer to Manual Traceability Management Software.

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

Table 19

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Weighing Menu

Weighing Menu			
Display Message	**Default**	**Information**	**Limits**
Weighing System	**No**	No - Without weighing system. Auto - Automatic linen-weighing system. Manual - Manual entering of the linen weight.	No / Auto / Manual
Main Units	**kg**	The weight unit may be displayed in kg or as a percentage value (of the machine capacity). • Main units correspond to the largest figures on the display.	Kg / %
Help Units	**%**	The weight unit may be displayed in kg or as a percentage value (of the machine capacity). • The secondary units correspond to the smallest figures on the display.	% / kg / off
Load Cell Calibration …		Load cell calibration shows current weight which is applied to each of the load cells. When the sign "Calibrated" appears in the middle of the screen, it means that the calibration process has finished. For further information please read the Installation/Operation/Maintenance manual.	
Expected Free Weight	**XXXX**	This value states the weight of the washer. This value is used to verify correct function of the weighing system. In case that the currently measured weight is out of range, a diagnostic error appears.	0 / 9999
Water Level	**Units**	Water consumption programmable in (units), liters or liters per kilogram (only for machines with Weighing system). In case that units are selected, the water consumption is higher than when liters are selected. The system measures the exact amount of water in liters when litres are selected. In case that liters per kilogram is selected, exact amount of water is calculated based on real weight of linen.	Units / Liters / Liters per kg
Wash Steps l/kg...		Only if Water Level is set to liters per kilogram, the default values for water level calculation can be set.	1 - 20
Correct Linen absorpt.	**No**	In case that liters or liters per kilograms are selected, it might occur that there won't be sufficient amount of water as required for the prewash because dry linen may absorb large amount of water. This problem may be solved by selecting "Linen absorption correction". An increased amount of water will then be fed into the washer for the prewash cycle.	No / Yes
Automatic Level Adjust.	**No**	If the amount of weighed load in the washing machine is smaller then the capacity of the washing machine, then the washing machine will run automatically with a reduced amount of water. This will reduce the water consumption of the washing machine.	No / Yes

continues...

Table 20

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Weighing Menu			
Display Message	**Default**	**Information**	**Limits**
Automatic Soap Adjust.	**No**	Similar like Automatic water Level Adjustment, also the time value of the liquid soap signal is adjusted in relation with the amount of weighed load, which will reduce the liquid soap consumption of the washing machine.	No / Yes
Scale Stabilization	**3**	This item is used for stabilization of the displayed weight value during the weighing process.	3 - 15
Calibration coefficient	**100**	This item serves the purpose of manual finishing of calibration - weighing system.	80-120
Exit		Return to Advanced Menu.	

Table 20

Tilting System

Tilting System Menu			
Display Message	**Default**	**Information**	**Limits**
Tilting system	**Off**	Tilting system setting: Off – tilting system is off 1 – One side tilting system 2 – Both side tilting system	Off / 1 / 2
Stabilization Time	**25**	Time delay for complete system stabilization after tilting operation.	10-300 seconds
Exit		Return to Advanced Menu	

Table 21

Data EXPORT / IMPORT

Data EXPORT / IMPORT			
Display Message	**Default**	**Information**	**Limits**
Programs Export	**No**	All wash programs and washer settings are copied from the control board internal memory onto a USB flash disk. (The USB flash disk must be inserted in the USB connector).	No / Yes
Programs Import	**No**	All wash programs are copied from USB flash disk into the control board internal memory. (The USB flash disk must be inserted in the USB connector). Wash programs can only be copied into the washer from the same model of washer (i.e. from 6.5 kg / 14 lb / 65 L machine into another 6.5 kg / 14 lb / 65 L machine).	No / Yes

continues...

Table 22

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Data EXPORT / IMPORT			
Display Message	**Default**	**Information**	**Limits**
Conf. Import	**No**	Settings of the machine are copied from USB flash disk into the control board internal memory. (The USB flash disk must be inserted in the USB connector). Settings can only be copied into the washer from the same model of washer (i.e. from 6.5 kg / 14 lb / 65 L machine into another 6.5 kg / 14 lb / 65 L machine).	No / Yes
Exit		Return to Advanced Menu.	

Table 22

Special

SoapLink is communication protocol between washer extractor and dosing PLC.

Special Menu			
Display Message	**Default**	**Information**	**Limits**
SoapLink Comm	**No**	This item activates communication with dispensing PLC system.	No / Yes
Show Customer ID	**No**	Displays the customer ID at the start of a cycle	No/Yes
Abort Dosing Sig	**No**	If the external wait signal is set for soap and the signal is high, the communication will be stopped until the signal is low before transmitting again.	No/Yes
Exit		Return to Advanced Menu	

Table 23

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How to Create and Adjust a Wash Program

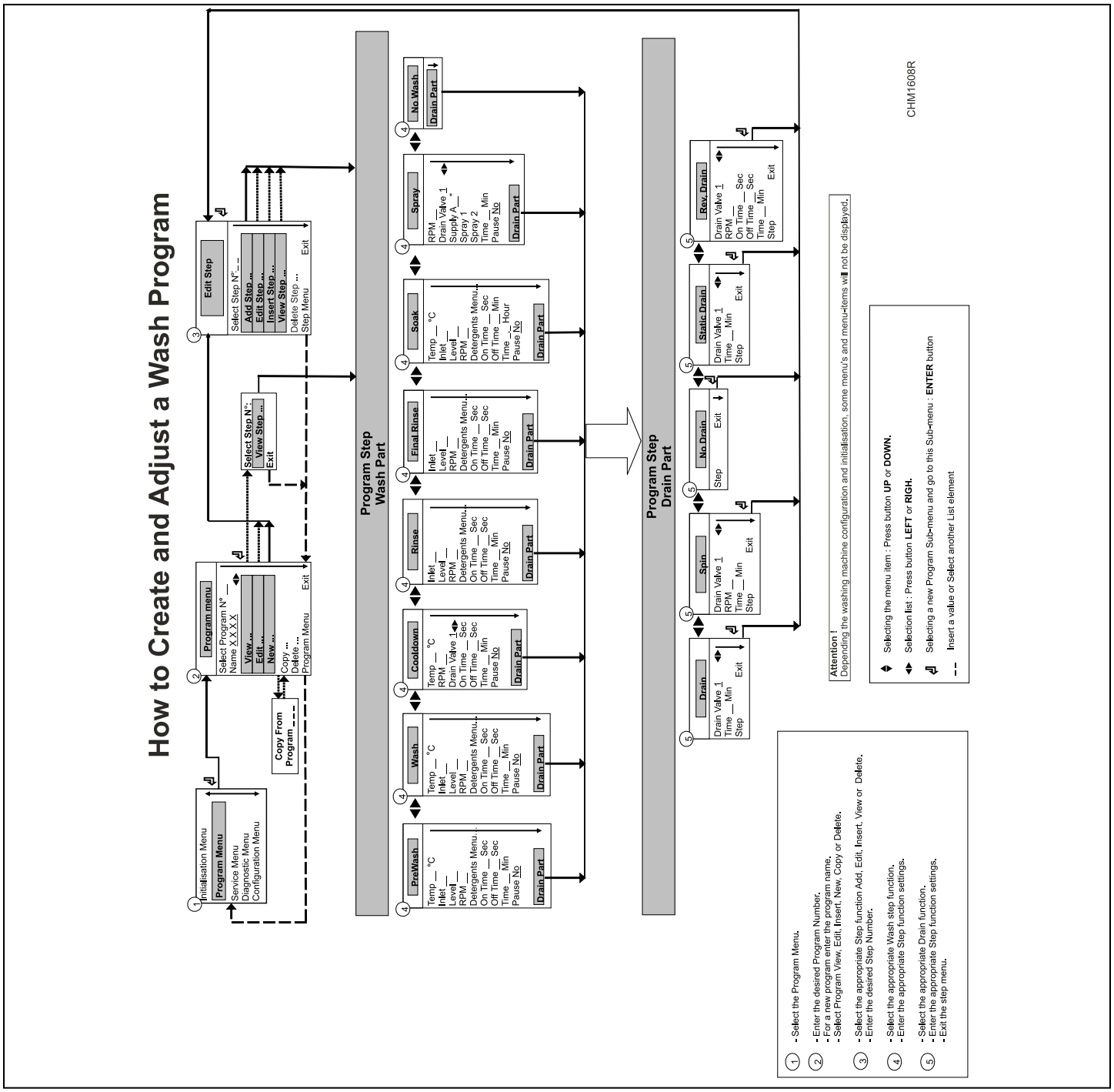


Figure 18

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Programming

General

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

Functions for the Complete Program

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

Functions for the Program Steps

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

Follow the flowchart step by step.

Step 1: Program Menu

How to Get into the Program Menu

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

- SELECT CYCLE is displayed.
- Switch the machine to the setup mode. Refer to section *How to Get into the Setup Mode*.
- The Main menu is now available.
- Press the ARROW DOWN button to select the Program Menu.

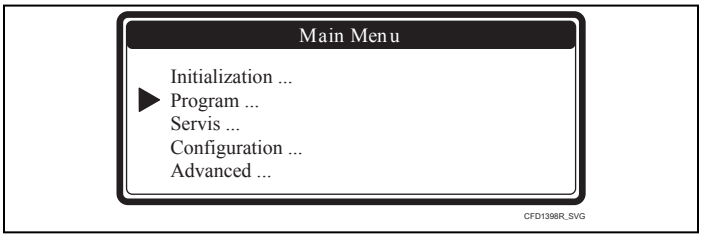
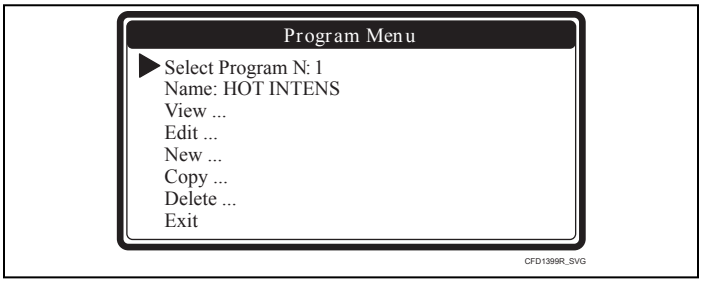


Figure 19

- Press the ENTER button to confirm your selection.
- Go to *Step 2: Program Functions*.

Step 2: Program Functions



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

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

Program Functions	
Display Message	**Information**
Select Program Number: 1	Insert the desired program number. Program 1 to 99 can be selected.
Name: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	The Program Name gives information about the type of wash Program. With the ARROW LEFT and RIGHT button you can select the character position. With the ARROW UP and DOWN button you can select the desired character. By pressing the ENTER button, the dashes will disappear.

continues...

Table 24

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

Table 24

Step 3: Program Step Function

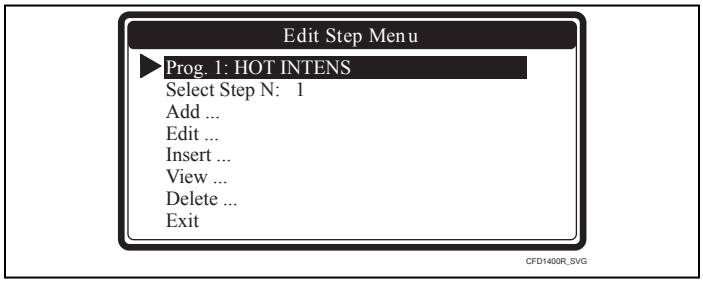


Figure 20

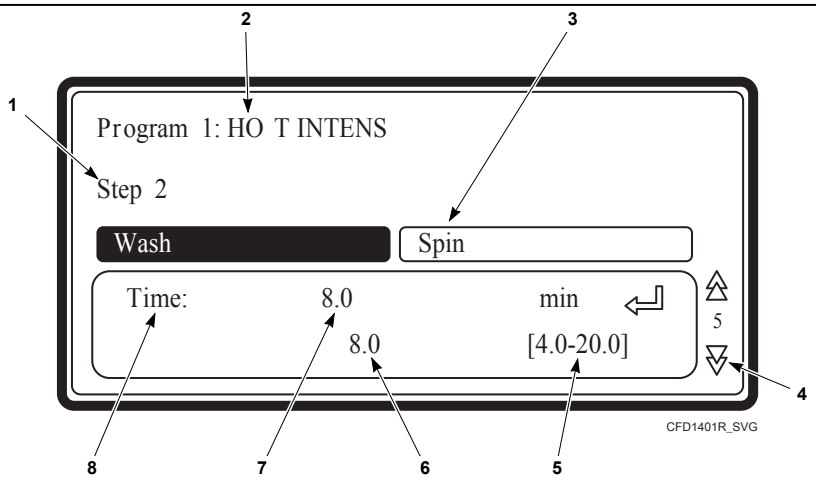
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Program Step Function	
Display Message	**Information**
Select Step Number: 1	Insert the desired step number. Step 1 to 99 can be selected. **NOTE: If the number is not accepted, this means that the step is not available. No Step number must be selected for "Add Step" function.**
Add Step	To create new programs, a new extra step should be added at the end of the program.
Edit Step	To change values and list elements from an existing step.
Insert Step	A new step is inserted in between two existing steps. If the number is not accepted, this means there is no step with a step number = inserted number - 1 available. A new step can only be inserted between two available steps.
View Step	Before making changes in a wash program, it's recommended to have a look at the actual settings by the view function. No changes can be made at the View Step function.
Delete Step	An existing Step in the program disappears when it's deleted. A confirmation is asked first before deleting the Old Step.
Exit	Return to Program Menu.

Table 25

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Step 4: Programming the Wash Part



1. Step number
2. Program number + name
3. STEP Wash <-> Spin part
4. Position menu item
5. Limits menu item
6. Original value
7. Value menu item
8. Menu item

Figure 21

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

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

Selecting the Wash Part

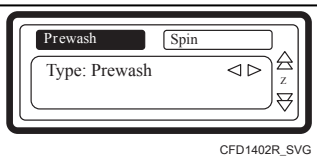


Figure 22

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

Washing Machines with Top Soap Dispenser

- Prewash
- **Wash**
- Cooldown
- Rinse
- Final Rinse

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- Soak
- Spray
- No wash

Washing Machines with Front Soap Dispenser

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

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

The Prewash Sequence

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

The Prewash Sequence			
Display Message	**Default**	**Information**	**Limits**
Temperature	**104 °F [40 °C]**	The water temperature.	33.8 - 113 °F [1 - 45 °C]
Inlet		The suggested inlet valves are related to the temperature and the soap box to be used. **NOTE: If you insert other inlet valves than the suggested ones, problems can occur at the water fill process.**	
(top soap dispenser)	**I1 – I5**		I1...I8
(front soap dispenser)	**I2 – I3**		I1...I3
Level	**Normal Low**	The suggested water level depends on the machine type. For machines with Weighing system: Liters: In each wash step it can be set exact value of water (in liters) that will be filled in drum during step. Liters per kilogram: Amount of water is calculated as multiplication of set value and real weight of linen in machine. Setting of water in liters or liters per kilogram must be activated in weighing menu.	Refer to *Table 13*
RPM	**-**	The suggested RPM depends on the machine Type.	Refer to *Table 13*

continues...

Table 26

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The Prewash Sequence			
Display Message	**Default**	**Information**	**Limits**
Detergents Menu… **Supply 1, …, 8**	**0 seconds**	Time selection for external liquid soap supplies. You can program up to 4 supplies at the same time. If you have programmed more then 4 supplies an error message will be generated. Put the time of the supplies back to zero until not more than 4 non-zero time values are remaining. (Liquid soap supplies must be switched on at the configuration Menu)	0 - 99 seconds
On Time	**12 seconds**	The wash action (motor "On" Time). Gentle wash action : 3 seconds. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 seconds
Off Time	**3 seconds**	The wash action (motor "Off" Time). Gentle wash action : 12 seconds. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 seconds
Time	**4.0 minutes**	The Prewash Sequence Time. (for 0 Minutes the Prewash sequence will be skipped) (programmable in steps of 0.5 Minutes)	0 - 99.5 minutes
Pause	**No**	When a signal Pause is programmed, a pause will be introduced at the end of the Wash Step. This allows the operator to add soap for the next step. A buzzer signal warns the operator that the cycle has been interrupted.	No / Yes

Table 26

The Wash Sequence

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

The Wash Sequence			
Display Message	**Default**	**Information**	**Limits**
Temperature	**140 °F [60 °C]**	The water temperature.	33.8 - 197.6 °F [1 - 92 °C]
Inlet		The suggested inlet valves are related to the temperature and the soap box to be used. **NOTE: If you insert other inlet valves than the suggested ones, problems can occur at the water fill process.**	
(top soap dispenser)	**I1-I2-I3-I5-I6-I8**		I1...I8

continues...

Table 27

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The Wash Sequence			
Display Message	**Default**	**Information**	**Limits**
(front soap dispenser)	**I2 – I3**		I1...I3
Level	**Normal Low**	The suggested water level depends on the machine type. For machines with Weighing system: Liters: In each wash step it can be set exact value of water (in liters) that will be filled in drum during step. Liters per kilogram: Amount of water is calculated as multiplication of set value and real weight of linen in machine. Setting of water in liters or liters per kilogram must be activated in weighing menu.	Refer to *Table 13*
RPM	**-**	The suggested RPM depends on the machine Type.	Refer to *Table 13*
Detergents Menu…		Time selection for Soap Boxes (hopper) and external liquid soap supplies. You can program up to 4 supplies at the same time. If you have programmed more then 4 supplies an error message will be generated. Put the time of the supplies back to zero until not more than 4 non-zero time values are remaining. (Liquid Soap Supplies Must Be Switched On At The Configuration Menu)	0 - 99 seconds
Box A, B, C, D, E	**0 seconds**	Box A, B, C, D, E are only available on Front Soap Dispenser machines).	
Supply 1, …, 8	**0 seconds**		
On Time	**12 seconds**	The wash action (motor "On" Time). Gentle wash action : 3 seconds. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 seconds
Off Time	**3 seconds**	The wash action (motor "Off" Time). Gentle wash action : 12 seconds. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 seconds
Time	**7.0 minutes**	The Wash Sequence Time. (for 0 Minutes the Wash sequence will be skipped) (programmable in steps of 0.5 Minutes)	0 - 99.5 minutes
Pause	**No**	When a signal Pause is programmed, a pause will be introduced at the end of the Wash Step. This allows the operator to add soap for the next step. A buzzer signal warns the operator that the cycle has been interrupted.	No / Yes

Table 27

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The Cooldown Sequence

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

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

WARNING

Do not program a drain sequence before a cooldown sequence.

C048

The Cooldown Sequence			
Display Message	**Default**	**Information**	**Limits**
Temperature	**140 °F [60 °C]**	The water temperature.	33.8 - 140 °F [1 - 60 °C]
RPM	**-**	The suggested RPM depends on the machine Type.	Refer to *Table 13*
Drain Valve	**1**	Only available on washing machines with both : a normal Open and normal Closed Drain valve.	1 - 2
On Time	**12 seconds**	The wash action (motor "On" Time). Gentle wash action : 3 seconds. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 seconds
Off Time	**3 seconds**	The wash action (motor "Off" Time). Gentle wash action : 12 seconds. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 seconds

continues...

Table 28

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The Cooldown Sequence			
Display Message	**Default**	**Information**	**Limits**
Time	**7.0 minutes**	The programmed time = time needed to decrease the water temperature. Once the programmed temperature has been reached, the next Sequence will be started. (for 0 Minutes the Prewash sequence will be skipped) (programmable in steps of 0.5 Minutes) **NOTE: If a short time is programmed, the water temperature will decrease fast.** **NOTE: Recommendation! Program 1 minute for each 37.4 °F [3 °C] 194 °F [3 °C] temperature drop. Example : For a hot wash of 194 °F [90 °C] 140 °F [90 °C] and a Cooldown Sequence of 140 °F [60 °C] 86 °F/37.4 °F [60 °C] a time of about 86 °F/37.4 °F [30 °C/3 °C] = 10 Minutes should be programmed for the Cooldown Sequence.**	0 - 99.5 minutes
Pause	**No**	When a signal Pause is programmed, a pause will be introduced at the end of the Wash Step. This allows the operator to add soap for the next step. A buzzer signal warns the operator that the cycle has been interrupted.	No / Yes

Table 28

The Rinse Sequence

- Prewash
- Wash
- Cooldown
- **Rinse**
- Final Rinse
- Soak
- Spray
- No wash
- No temperature can be programmed as a Rinse is only dedicated for cold water.

The Rinse Sequence			
Display Message	**Default**	**Information**	**Limits**
Inlet		3 Inlets can be programmed. The suggested inlet valves are related to the temperature and the soap box to be used. **NOTE: If you insert other inlet valves than the suggested ones, problems can occur at the water fill process.**	
(top soap dispenser)	**I1-I2-I7**		I1,2,3,4,7
(front soap dispenser)	**I2**		I1-I2

continues...

Table 29

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The Rinse Sequence			
Display Message	**Default**	**Information**	**Limits**
Level	**Normal High**	The suggested water level depends on the machine type. For machines with Weighing system: Liters: In each wash step it can be set exact value of water (in liters) that will be filled in drum during step. Liters per kilogram: Amount of water is calculated as multiplication of set value and real weight of linen in machine. Setting of water in liters or liters per kilogram must be activated in weighing menu.	Refer to *Table 13*
RPM	**-**	The suggested RPM depends on the machine Type.	Refer to *Table 13*
Detergents Menu…		Time selection for Soap Boxes (hopper) and external liquid soap supplies. You can program up to 4 supplies at the same time. If you have programmed more then 4 supplies an error message will be generated. Put the time of the supplies back to zero until not more than 4 non-zero time values are remaining. (liquid soap supplies must be switched on at the configuration menu) .	0 - 99 seconds
Box A, B, C, D, E	**0 seconds**	(Box A, B, C, D, E are only available on Front Soap Dispenser machines)	
Supply 1, …, 8	**0 seconds**		
On Time	**12 seconds**	The wash action (motor "On" Time). Gentle wash action : 3 seconds. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 seconds
Off Time	**3 seconds**	The wash action (motor "Off" Time). Gentle wash action : 12 seconds. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 seconds
Time	**2.0 minutes**	The Rinse Sequence Time. (for 0 Minutes the Rinse sequence will be skipped) (programmable in steps of 0.5 Minutes)	0 - 99.5 minutes
Pause	**No**	When a signal Pause is programmed, a pause will be introduced at the end of the Wash Step. This allows the operator to add soap for the next step. A buzzer signal warns the operator that the cycle has been interrupted.	No / Yes

Table 29

The Final Rinse Sequence

Washing Machines with Top Soap Dispenser

- Prewash
- Wash

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- Cooldown
- Rinse
- **Final Rinse**
- Soak
- Spray
- No wash
- No temperature can be programmed as a Last Rinse is only dedicated for cold (hard) water.

The Final Rinse Sequence			
Display Message	**Default**	**Information**	**Limits**
Inlet **(top soap dispenser)**	**I4-I7** (3 inlets) **I4** (4 inlets)	3 Inlets can be programmed. The suggested inlet valves are related to the temperature and the soap box to be used. **NOTE: If you insert other inlet valves than the suggested ones, problems can occur at the water fill process.**	I1,2,3,4,7
Level	**Normal High**	The suggested water level depends on the machine type. For machines with Weighing system: Liters: In each wash step it can be set exact value of water (in liters) that will be filled in drum during step. Liters per kilogram: Amount of water is calculated as multiplication of set value and real weight of linen in machine. Setting of water in liters or liters per kilogram must be activated in weighing menu.	Refer to *Table 13*
RPM	**-**	The suggested RPM depends on the machine Type.	Refer to *Table 13*
Detergents Menu… **Supply 1, …, 8**	**0 seconds**	Time selection for external liquid soap supplies. You can program up to 4 supplies at the same time. If you have programmed more then 4 supplies an error message will be generated. Put the time of the supplies back to zero until not more than 4 non-zero time values are remaining. (liquid soap supplies must be switched on at the configuration menu) .	0 - 99 seconds
On Time	**12 seconds**	The wash action (motor "On" Time). Gentle wash action : 3 seconds. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 seconds
Off Time	**3 seconds**	The wash action (motor "Off" Time). Gentle wash action : 12 seconds. (The suggested default values can be adjusted at the Initialization menu)	1 - 99 seconds
Time	**2.0 minutes**	The Final Rinse Sequence Time. (for 0 Minutes the Final Rinse sequence will be skipped) (programmable in steps of 0.5 Minutes)	0 - 99.5 minutes

continues...

Table 30

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The Final Rinse Sequence			
Display Message	**Default**	**Information**	**Limits**
Pause	**No**	When a signal Pause is programmed, a pause will be introduced at the end of the Wash Step. This allows the operator to add soap for the next step. A buzzer signal warns the operator that the cycle has been interrupted.	No / Yes

Table 30

The Soak Sequence

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

The Soak Sequence			
Display Message	**Default**	**Information**	**Limits**
Temperature	**104 °F [40 °C]**	The water temperature.	33.8 - 113 °F [1 - 45 °C]
Inlet		The suggested inlet valves are related to the temperature and the soap box to be used. **NOTE: If you insert other inlet valves than the suggested ones, problems can occur at the water fill process.**	
(top soap dispenser)	**I4-I7**		I1...I8
(front soap dispenser)	**I2-I3**		I1...I3
Level	**Normal Low**	The suggested water level depends on the machine type. For machines with Weighing system: Liters: In each wash step it can be set exact value of water (in liters) that will be filled in drum during step. Liters per kilogram: Amount of water is calculated as multiplication of set value and real weight of linen in machine. Setting of water in liters or liters per kilogram must be activated in weighing menu.	Refer to *Table 13*
RPM	-	The suggested RPM depends on the machine Type.	Refer to *Table 13*

continues...

Table 31

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The Soak Sequence			
Display Message	**Default**	**Information**	**Limits**
Detergents Menu…		Time selection for Soap Boxes (hopper) and external liquid soap supplies. You can program up to 4 supplies at the same time. If you have programmed more then 4 supplies an error message will be generated. Put the time of the supplies back to zero until not more than 4 non-zero time values are remaining. (liquid soap supplies must be switched on at the configuration menu) .	0 - 99 seconds
Box A, B, C, D, E	**0 seconds**	(Box A, B, C, D, E are only available on Front Soap Dispenser machines).	
Supply 1, …, 8	**0 seconds**		
On Time	**12 seconds**	The wash action (motor "On" Time). (The suggested default values can be adjusted at the Initialization menu)	1 - 99 seconds
Off Time	**10 minutes**	The wash action (motor "Off" Time). (The suggested default values can be adjusted at the Initialization menu)	1 - 99 minutes
Time	**1.0 Hour**	The Soak Sequence Time. (for 0 Hour the Soak sequence will be skipped) (programmable in steps of 0.1 Hour)	0 - 25.5 Hour
Pause	**No**	When a signal Pause is programmed, a pause will be introduced at the end of the Wash Step. This allows the operator to add soap for the next step. A buzzer signal warns the operator that the cycle has been interrupted.	No / Yes

Table 31

The Spray Sequence

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

Water or Liquid is injected at Distribution or Low Spin Speed.

No standard water inlets can be programmed in this function.

The liquid will be injected based on soap supply programming.

The Spray Sequence			
Display Message	**Default**	**Information**	**Limits**
RPM	**-**	The suggested RPM depends on the machine Type.	Refer to *Table 13*
Drain Valve	**1**	Only available on washing machines with both : a normal Open and normal Closed Drain valve.	1 - 2

continues...

Table 32

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The Spray Sequence			
Display Message	**Default**	**Information**	**Limits**
Detergents Menu…		Time selection for Soap Boxes (hopper) and external liquid soap supplies. The Spray sequence only functions with 1 Supply. If you have programmed more then 1 supply an error message will be generated. Put the time of the supplies back to zero until not more than 1 non-zero time value is remaining. If No supply has been programmed: the Spray sequence will be skipped. (Liquid soap supplies must be switched on at the configuration menu).	0 - 99 seconds
Box A, B, C, D, E	**0 seconds**		
Supply 1, …, 8	**0 seconds**		
Pause	**No**	When a signal Pause is programmed, a pause will be introduced at the end of the Wash Step. This allows the operator to add soap for the next step. A buzzer signal warns the operator that the cycle has been interrupted.	No / Yes

Table 32

The No Wash Sequence

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

In case of a No Wash Sequence, the wash function of the programmed step is skipped. Go to *Step 5: Programming the Drain Step.*

Step 5: Programming the Drain Step

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

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

NOTE: You don't have to program a drain sequence before an extraction sequence as the water will automatically be drained at the extraction sequence.

The Drain Sequence

- **Drain**
- Extract
- No Drain
- Static Drain
- Reversing Drain

Selecting the Drain / Extraction Step

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

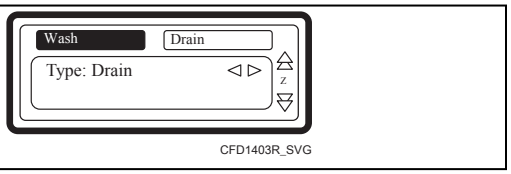


Figure 23

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

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

Table 33

The Extract Sequence

- Drain
- **Extract**
- No Drain
- Static Drain
- Reversing Drain

The Extract Sequence			
Display Message	**Default**	**Information**	**Limits**
Drain Valve	**1**	Only available on washing machines with both : a normal Open and normal Closed Drain valve.	1 - 2
RPM	**-**	The suggested RPM depends on the machine Type.	Refer to *Table 13*
Time	**4.5 minutes**	The Extract Sequence Time. (for 0 Minutes the Extract sequence will be skipped) (programmable in steps of 0.5 Minutes)	0 - 15.0 minutes
Exit		Return to Edit Program Menu.	

Table 34

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The No Drain Sequence

- Drain
- Extract
- **No Drain**
- Static Drain
- Reversing Drain

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

WARNING

For some specific functions "No Drain" must be programmed. Example: If you want to program a cooldown sequence, then "No Drain" must be programmed between the hot wash and the cooldown sequence.

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The No Drain Sequence			
Display Message	**Default**	**Information**	**Limits**
Exit		Return to Edit Program Menu.	

Table 35

The Static Drain Sequence

- Drain
- Extract
- No Drain
- **Static Drain**
- Reversing Drain

The drum is at standstill while the water is drained.

The Static Drain Sequence			
Display Message	**Default**	**Information**	**Limits**
Drain Valve	**1**	Only available on washing machines with both : a normal Open and normal Closed Drain valve.	1 - 2
RPM	**-**	The suggested RPM depends on the machine Type.	Refer to *Table 13*
Time	**0.5 minutes**	The Static Drain Sequence Time.. (for 0 Minutes the Static Drain sequence will be skipped) (programmable in steps of 0.5 Minutes)	0 - 15.0 minutes
Exit		Return to Edit Program Menu.	

Table 36

WARNING

It's not recommended to program a spin sequence just after a static drain sequence. At a static drain sequence, the garments are not distributed around the drum while the water is drained. When the spin sequence starts, the garments are a big imbalance and the imbalance (tilt) function will be activated.

C051

The Reversing Drain Sequence

- Drain
- Extract
- No Drain
- Static Drain
- **Reversing Drain**

The drum is reversing while the water is drained.

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The Reversing Drain Sequence			
Display Message	**Default**	**Information**	**Limits**
Drain Valve	**1**	Only available on washing machines with both : a normal Open and normal Closed Drain valve.	1 - 2
RPM	**-**	The suggested RPM depends on the machine Type.	Refer to *Table 13*
On Time	**12 seconds**	The mechanical action (motor "On" Time). (The suggested default values can be adjusted at the Initialization menu)	1 - 99 seconds
Off Time	**3 seconds**	The mechanical action (motor "Off" Time). (The suggested default values can be adjusted at the Initialization menu)	1 - 99 seconds
Time	**0.5 minutes**	The Static Drain Sequence Time. (for 0 Minutes the Static Drain sequence will be skipped) (programmable in steps of 0.5 Minutes)	0 - 15.0 minutes
Exit		Return to Edit Program Menu.	

Table 37

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Operation Menu

Starting Up

WARNING

Before starting up the first time, be sure that the machine is well installed. Refer to the Installation/ Operation/Maintenance manual. Make sure that the configuration and initialization menu have the correct settings.

C063

Switching On the Power

The display lights up when you switch on the power.

- If the program is ready to be started, Select CYCLE is displayed.

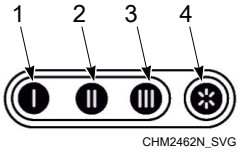
Load the Washing Machine

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

Put Soap into the Soap Dispenser

Put the correct amount of soap into the soap dispenser.

Washing Machines with Top Soap Dispenser



1. Detergent for the pre-wash
2. Detergent for the main wash
3. Liquid detergent for the main wash or liquid bleach, etc.
4. Liquid fabric softener or liquid starch for the last rinse

Figure 24

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

Washing Machines with Front Soap Dispenser



Dispenser A - First Wash

Dispenser B - Second Wash

Dispenser D - Last Rinse

Figure 25

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

Refer to section *The Creation of a Wash Program* for more information.

Starting a Wash Program

- Up to 99 programs can be selected. The first 20 are the standard Wash programs you can find in this manual at section *Wash Programs for Washing Machines with Top Soap Dispenser*, *Wash Programs for Washing Machines with Front Soap Dispenser*.
  - Insert the program number.
  - Press the "START" button.
- If there is no program available for a specific program number, INVALID is displayed.

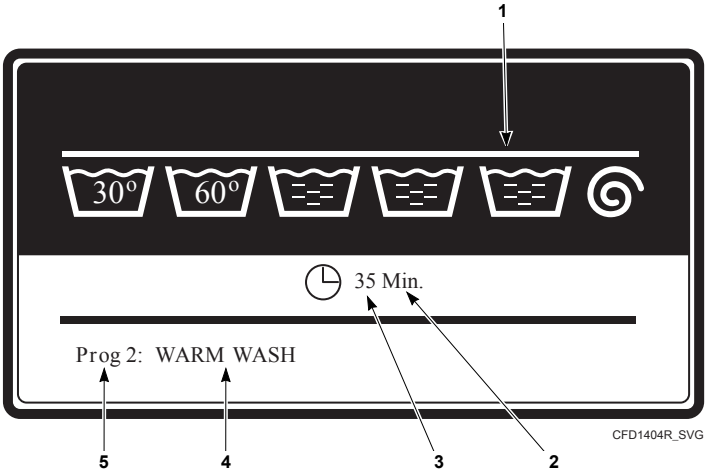
Programming a Delay Time

1. Enter the selected Program Number.
2. Press the Dot button. The Delay time message will be displayed.
3. Close the door.
4. Insert the value for a delay time: DELAYED START _ _ : _ _. Insert a value for the Hours first, then insert a value for the Minutes.
   - The minimum delay time is 1 minute [00:01].
   - The maximum delay time is 99 hours and 59 minutes [99:59].
5. Press the START button, the delay time will start to decrease.
   - The Door will be locked immediately. Once the delay time is over, the wash cycle will start automatically.
   - The Delay Time Sequence can be interrupted by pressing the Stop button. The program will return to the Start Up menu: SELECT CYCLE.

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The Active Program

- The cycle time will decrease minute by minute and gives you an indication how long it will take before the cycle is finished.
- A Progression bar shows the progression of the wash cycle and the active wash step.



1. Progression bar
2. Time unit
3. Remaining time wash program
4. Wash program name
5. Program number

Figure 26

Advancing a Wash Program

- Press the ARROW RIGHT button to increase the wash sequence time.
- Press the ARROW LEFT button to decrease the wash sequence time.
- Press the START button to skip the current step.

Wash Time

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

Program End

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

Open the door and unload the machine.

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

WARNING

In case of hygienic desinfective wash programs in the Initialization Menu "Manual Override" and "Allow Advance" must be switched off.

C065

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Water Fill Process

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

Heating Process

When "No Wait for Temperature" (No Wait for Heat) is selected:

- The machine will heat until the time of the specific wash step is over or if the programmed temperature was reached.
- Even if the programmed temperature is not reached, the program will start the next sequence if the time of the sequence is over.

When "Wait for Temperature" (Wait for Heat) is selected:

- The machine will heat until the programmed temperature is reached. The programmed time of the wash sequence will only start counting down from the moment that the target temperature was reached.

WARNING

When the machines do not have electrical or steam heating no "Wait for temperature" should be selected in the Initialization Menu.

C068

Cooldown Function

Automatic Cooldown

- This function avoids thermal shock in the washing machine.
- For Hot washes above 149°F [65°C] , Cold water is added at the end of the step.

Programmed Cooldown

- This function is recommended to avoid the shrinking of the garments.
- Water is drained and cold water is added bit by bit. The temperature of the water in the tub will decrease slowly as a function of the programmed Cooldown Sequence (temperature and time).

Spray Function

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

Unbalance

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

Adding Detergents

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

Stop

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

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

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

Open Soap Box

Only for washing machines with front soap dispenser.

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

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

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

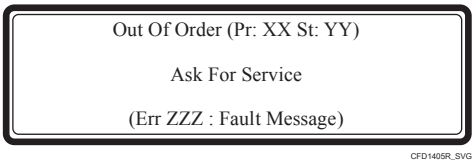
- It's recommended to program a pause (signal) if you want to fill the same soap box twice while the program is running.

Wait State

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

How to Handle Failure Messages

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



XX : The Program number

YY : The Step number

Err ZZZ : The error number

Fault Message : The name of the error message

Figure 27

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

Safety Conditions

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

WARNING

It's up to the operator to take the necessary precautions if the drain valve is not functional and there is still hot water in the tub at the end of the wash cycle. On the display the actual water temperature and level will be displayed. Wait until the water is drained and until the water has cooled before all interventions as hot water can cause burns.

C069

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

WARNING

Go to the chapter Troubleshooting to find out more about error handling.

C070

How to Handle Power Interruptions

Refer to Installation/Operation/Maintenance manual.

Special Function Buttons

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

Information

Press the INFORMATION button if you want to find out what a program looks like.

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

Service Information

Press the SERVICE INFORMATION button if you want to inspect the actual water temperature and level.

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

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- You can leave the Service information by pressing the Service Information button again.

Inlets 1, 2, 3, 4, 5, 6, 7, 8

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

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

WARNING

All the safety functions will still be active, so it can occur that you can´t activate the inlets.

C071

Drain

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

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

Heating

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

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

WARNING

All the safety functions will still be active, so it can occur that you can´t activate the heating.

C072

Speed Adjust

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

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

WARNING

All the safety functions will still be active, so it can occur that you can´t activate the spin speed.

C073

External Liquid Soap Boxes

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

Automatic Weighing System (Optiload)

- Cabinet Freestanding machines 18-24-28 kg / 40-55-70 lb / 180-240-280 L and 33-40-55- 80-100-120 kg / 75-90-125-180-230-275 lb / 335-400-520-800-1000-1200 L can be equipped with an automatic weighing system. When the door is open, a screen with a weighing scale is displayed.
- The operator is invited to press the "0" number button (TARE) to put the scale on "0" kg. By pressing the "0" button, the message "Reference weight is set to 0" is shown.
- The operator loads the machine and can follow on the display how much linen is put in the washing machine.
- If the load exceeds the capacity of the washing machine, the wash computer shows an "Overload" message.
- At the bottom of the display is shown a progress bar as simple indicator how much linen has been loaded.
- By closing the door, the display with weighing information is replaced by the display to select a wash cycle.

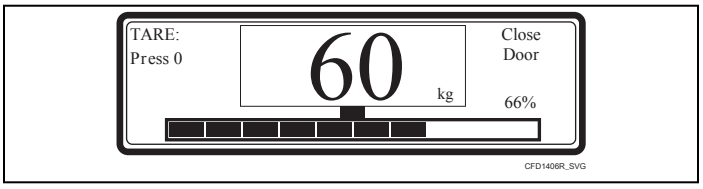


Figure 28

System with Manual Entering of the Linen Weight (SMART LOAD)

- If you know the weight of the linen load (i.e. you weight it before washing), you can activate the function of manual entering of the linen weight (Advanced menu / Weighing).
- If the door is open there is shown "0kg" as the linen load weight on the display. Enter the weight value. When you close the door, you will be able to select a wash cycle.

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

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Pre-programmed Programs

Pre-programmed Programs

The Wash Computer contains 20 pre-programmed Standard Wash Programs. These are program numbers 1 through 20. Program numbers 21 to 51 are reserved for custom programs.

WARNING

The pre-programmed processes are given as an example only. For the creation of your own wash programs, contact your soap supplier.

C074

Water Inlets (Valves) Information

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

Table 38

Cabinet Hardmount 52 kg / 120 lb /520 L Water Valves			
Inlet Valve 1:	Cold Hard Water	Direct Inlet	
Inlet Valve 2:	Cold Soft Water	Direct Inlet	
Inlet Valve 3:	Hot Soft Water	Direct Inlet	
Inlet Valve 4:	Cold Soft Water	Soap Dispenser Compartment "I"	Pre wash
Inlet Valve 5:	Cold Soft Water	Soap Dispenser Compartment "II"	Wash - detergent
Inlet Valve 6:	Cold Soft Water	Soap Dispenser Compartment "III"	Wash - liquid
Inlet Valve 7:	Cold Hard Water	Soap Dispenser Compartment "Fabric softener"	Last rinse
Inlet Valve 8:	Hot Soft Water	Soap Dispenser Compartment "I"	Pre wash

Table 39

Front Soap Dispenser Water Valves		
Inlet Valve 1:	Cold Hard water	(Inlet Valve 1 is not operational if hard water is not present)
Inlet Valve 2:	Cold Soft water	
Inlet Valve 3:	Hot Soft water	

Table 40

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Wash Program Legend Water Levels

- NL: Normal Low level
- NH: Normal High level
- EL: Economic Low level
- EH: Economic High level

Wash Actions

Normal Wash Action

- A = 12 seconds, 12 seconds Action
- R = 3 seconds, 3 seconds Rest

Gentle Wash Action

- A = 3 seconds, 3 seconds Action
- R = 12 seconds, 12 seconds Rest

RPM (Revolutions per Minute)

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

Wash Programs for Washing Machines with Top Soap Dispenser

FOR THREE WATER TYPES: COLD SOFT, COLD HARD, HOT

NOTE: Wash programs for two water types (cold and hot) are the same as the programs for three water types. The only difference being that the inlet valve (7) isn´t used.

NOTE: * Applies to the Cabinet Hardmount 52 kg / 120 lb / 520 L machine for three water types. Cabinet Hardmount 52 kg / 120 lb / 520 L machine two water types - during the final rinse sequence, the valves 2-7 are used instead of valves 1-7.

Hot Wash Intensive 194°F [90°C]

Wash Program 1: Hot Wash Intensive 194°F [90°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
Step 1	Prewash / wash	1-5-7 2-3-4-8*	86°F [30°C]	NH	5 minutes	W (normal)	1=30 seconds
	Spin	-	-	-	1 minute	L	-
Step 2	Main wash	1-2-3-5-6-8 2-3-5*	194°F [90°C]	NH	10 minutes	W (normal)	2=30 seconds
	Drain	-	-	-	30 seconds	D	
Step 3	Rinse 1	1-2-7 2*	-	NH	4 minutes	W (normal)	-
	Spin	-	-	-	1 minute	L	-
Step 4	Rinse 2	1-2-7 2*	-	NH	4 minutes	W (normal)	-
	Spin	-	-	-	1 minute	L	-
Step 5	Rinse 3	1-4-7 1-7*	-	NL	4 minutes	W (normal)	3=30 seconds
	Final spin/Spin	-	-	-	9 minutes	H	-
	Slowdown	-	-	-	N/A	-	-

continues...

Table 41

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Wash Program 1: Hot Wash Intensive 194°F [90°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
	Tumble	-	-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-

Table 41

Warm Wash Intensive 140°F [60°C]

Wash Program 2: Warm Wash Intensive 140°F [60°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
Step 1	Prewash / wash	1-5-7 2-3-4-8*	86°F [30°C]	NH	5 minutes	W (normal)	1=30 seconds
	Spin	-	-	-	1 minute	L	-
Step 2	Main wash	1-2-3-5-6-8 2-3-5*	140°F [60°C]	NH	10 minutes	W (normal)	2=30 seconds
	Drain	-	-	-	30 seconds	D	
Step 3	Rinse 1	1-2-7 2*	-	NH	4 minutes	W (normal)	-
	Spin	-	-	-	1 minute	L	-
Step 4	Rinse 2	1-2-7 2*	-	NH	4 minutes	W (normal)	-
	Spin	-	-	-	1 minute	L	-
Step 5	Rinse 3	1-4-7 1-7*	-	NL	4 minutes	W (normal)	3=30 seconds
	Final spin/Spin	-	-	-	9 minutes	H	-
	Slowdown	-	-	-	N/A	-	-

continues...

Table 42

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Wash Program 2: Warm Wash Intensive 140°F [60°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
	Tumble	-	-	-	30 seconds (Models with-out pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-

Table 42

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Colored Wash Intensive 104°F [40°C]

Wash Program 3: Colored Wash Intensive 104°F [40°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
Step 1	Prewash / wash	1-5-7 2-3-4-8*	86°F [30°C]	NH	5 minutes	W (normal)	1=30 seconds
	Spin	-	-	-	1 minute	L	-
Step 2	Main wash	1-2-3-5-6-8 2-3-5*	104°F [40°C]	NH	10 minutes	W (normal)	2=30 seconds
	Drain	-	-	-	30 seconds	D	
Step 3	Rinse 1	1-2-7 2*	-	NH	4 minutes	W (normal)	-
	Spin	-	-	-	1 minute	L	-
Step 4	Rinse 2	1-2-7 2*	-	NH	4 minutes	W (normal)	-
	Spin	-	-	-	1 minute	L	-
Step 5	Rinse 3	1-4-7 1-7*	-	NL	4 minutes	W (normal)	3=30 seconds
	Final spin/Spin	-	-	-	9 minutes	H	-
	Slowdown	-	-	-	N/A	-	-
	Tumble	-	-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-

Table 43

Bright Wash Intensive 86°F [30°C]

Wash Program 4: Bright Wash Intensive 86°F [30°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
No Prewash							

continues...

Table 44

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Wash Program 4: Bright Wash Intensive 86°F [30°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
Step 1	Main wash	1-2-3-5-6-8 2-3-5*	86°F [30°C]	NH	10 minutes	W (normal)	2=30 seconds
	Drain	-	-	-	30 seconds	D	
Step 2	Rinse 1	1-2-7 2*	-	NH	4 minutes	W (normal)	-
	Drain	-	-	-	1 minute	D	-
Step 3	Rinse 2	1-2-7 2*	-	NH	4 minutes	W (normal)	-
	Drain	-	-	-	1 minute	D	-
Step 4	Rinse 3	1-4-7 1-7*	-	NL	4 minutes	W (normal)	3=30 seconds
	Final spin/Spin	-	-	-	9 minutes	H	-
	Slowdown	-	-	-	N/A	-	-
	Tumble	-	-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-

Table 44

Woolens 59°F [15°C]

Wash Program 5: Woolens 59°F [15°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
No prewash							
Step 1	Main wash	1-2-3-5 2-5*	59°F [15°C]	NH	6 minutes	W (gentle)	2=30 seconds
	Drain	-	-	-	30 seconds	D	
Step 2	Rinse 1	1-2-7 2*	-	NH	2 minutes	W (gentle)	-

continues...

Table 45

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Wash Program 5: Woolens 59°F [15°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
	Drain	-	-	-	30 seconds	D	-
Step 3	Rinse 2	1-2-7 2*	-	NH	2 minutes	W (gentle)	-
	Drain	-	-	-	30 seconds	D	-
Step 4	Rinse 3	1-4-7 1-7*	-	NL	3 minutes	W (gentle)	3=30 seconds
	Final spin/Spin	-	-	-	2.5 minutes	L	-
	Slowdown	-	-	-	N/A	-	-
	Tumble	-	-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (gentle)	-

Table 45

Hot Wash 194°F [90°C]

Wash Program 6: Hot Wash 194°F [90°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
No prewash							
Step 1	Main wash	1-2-3-5-6-8 2-3-5*	194°F [90°C]	NL	20 minutes	W (normal)	2=30 seconds
	Drain	-	-	-	30 seconds	D	
Step 2	Rinse 1	1-2-7 2*	-	EH	4 minutes	W (normal)	-
	Spin	-	-	-	1 minute	L	-
Step 3	Rinse 2	1-2-7 2*	-	EH	4 minutes	W (normal)	-
	Spin	-	-	-	1 minute	L	-

continues...

Table 46

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Wash Program 6: Hot Wash 194°F [90°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
Step 4	Rinse 3	1-4-7 1-7*	-	EH	6 minutes	W (normal)	3=30 seconds
	Final spin/Spin	-	-	-	9 minutes	H	-
	Slowdown	-	-	-	N/A	-	-
	Tumble	-	-	-	30 seconds (Models with-out pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-

Table 46

Warm Wash 140°F [60°C]

Wash Program 7: Warm Wash 140°F [60°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
No prewash							
Step 1	Main wash	1-2-3-5-6-8 2-3-5*	140°F [60°C]	NL	20 minutes	W (normal)	2=30 seconds
	Drain	-	-	-	30 seconds	D	
Step 2	Rinse 1	1-2-7 2*	-	EH	4 minutes	W (normal)	-
	Spin	-	-	-	1 minute	L	-
Step 3	Rinse 2	1-2-7 2*	-	EH	4 minutes	W (normal)	-
	Spin	-	-	-	1 minute	L	-
Step 4	Rinse 3	1-4-7 1-7*	-	EH	6 minutes	W (normal)	3=30 seconds
	Final spin/Spin	-	-	-	9 minutes	H	-
	Slowdown	-	-	-	N/A	-	-

continues...

Table 47

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Wash Program 7: Warm Wash 140°F [60°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
	Tumble	-	-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-

Table 47

Colored Wash 104°F [40°C]

Wash Program 8: Colored Wash 104°F [40°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap supply**
No Prewash							
Step 1	Main wash	1-2-3-5-6-8 2-3-5*	104°F [40°C]	NL	20 minutes	W (normal)	2=30 seconds
	Drain	-	-	-	30 seconds	D	
Step 2	Rinse 1	1-2-7 2*	-	EH	4 minutes	W (normal)	-
	Spin	-	-	-	1 minute	L	-
Step 3	Rinse 2	1-2-7 2*	-	EH	4 minutes	W (normal)	-
	Spin	-	-	-	1 minute	L	-
Step 4	Rinse 3	1-4-7 1-7*	-	EH	6 minutes	W (normal)	3=30 seconds
	Final spin/Spin	-	-	-	9 minutes	H	-
	Slowdown	-	-	-	N/A	-	-
	Tumble	-	-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (5seconds / 5 seconds)	-

Table 48

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Bright Wash 86°F [30°C]

Wash Program 9: Bright Wash 86°F [30°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
No Prewash							
Step 1	Main wash	1-2-3-5-6-8 2-3-5*	86°F [30°C]	NL	20 minutes	W (normal)	2=30 seconds
	Drain	-	-	-	30 seconds	D	
Step 2	Rinse 1	1-2-7 2*	-	EH	4 minutes	W (normal)	-
	Drain	-	-	-	1 minute	D	-
Step 3	Rinse 2	1-2-7 2*	-	EH	4 minutes	W (normal)	-
	Drain	-	-	-	1 minute	D	-
Step 4	Rinse 3	1-4-7 1-7*	-	EH	6 minutes	W (normal)	3=30 seconds
	Final spin/Spin	-	-	-	9 minutes	H	-
	Slowdown	-	-	-	N/A	-	-
	Tumble	-	-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-

Table 49

Eco Hot Wash 194°F [90°C]

Wash Program 10: Eco Hot Wash 194°F [90°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
No Prewash							
Step 1	Main wash	1-2-3-5-6-8 2-3-5*	185°F [85°C]	EH	14 minutes	W (normal)	2=30 seconds
	Drain	-	-	-	1 minute	L	

continues...

Table 50

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Wash Program 10: Eco Hot Wash 194°F [90°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
Step 2	Rinse 1	1-2-7 2*	-	EL	4 minutes	W (normal)	-
	Spin	-	-	-	1 minute	L	-
Step 3	Rinse 2	1-4-7 1-7*	-	EL(1)	4 minutes	W (normal)	3=30 seconds
	Final spin/Spin	-	-	-	9 minutes	H	-
	Slowdown	-	-	-	N/A	-	-
	Tumble	-	-	-	30 seconds (Models with-out pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-
1) EH – Cabinet Freestanding 10.5 kg / 25 lb / 105 L models, Cabinet Hardmount 10.5 kg / 25 lb / 105 L (G-factor 200) models							

Table 50

Eco Warm Wash 140°F [60°C]

Wash Program 11: Eco Warm Wash 140°F [60°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
No Prewash							
Step 1	Main wash	1-2-3-5-6-8 2-3-5*	131°F [55°C]	EH	14 minutes	W (normal)	2=30 seconds
	Spin	-	-	-	1 minute	L	
Step 2	Rinse 1	1-2-7 2*	-	EL	4 minutes	W (normal)	-
	Spin	-	-	-	1 minute	L	-
Step 3	Rinse 2	1-4-7 1-7*	-	EL(1)	4 minutes	W (normal)	3=30 seconds
	Final spin/Spin	-	-	-	9 minutes	H	-
	Slowdown	-	-	-	N/A	-	-

continues...

Table 51

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Wash Program 11: Eco Warm Wash 140°F [60°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
	Tumble	-	-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-
(1) EH – Cabinet Freestanding 10.5 kg / 25 lb / 105 L models, Cabinet Hardmount 10.5 kg / 25 lb / 105 L (G-factor 200) models							

Table 51

Eco Color Wash 104°F [40°C]

Wash Program 12: Eco Color Wash 104°F [40°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
No Prewash							
Step 1	Main wash	1-2-3-5-6-8 2-3-5*	104°F [40°C]	EH	14 minutes	W (normal)	2=30 seconds
	Drain	-	-	-	1 minute	L	
Step 2	Rinse 1	1-2-7 2*	-	EL	4 minutes	W (normal)	-
	Spin	-	-	-	1 minute	L	-
Step 3	Rinse 2	1-4-7 1-7*	-	EL(1)	4 minutes	W (normal)	3=30 seconds
	Final spin/Spin	-	-	-	9 minutes	H	-
	Slowdown	-	-	-	N/A	-	-
	Tumble	-	-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-
(1) EH – Cabinet Freestanding 10.5 kg / 25 lb / 105 L models, Cabinet Hardmount 10.5 kg / 25 lb / 105 L (G-factor 200) models							

Table 52

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Eco Bright Wash 86°F [30°C]

Wash Program 13: Eco Bright Wash 86°F [30°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
No Prewash							
Step 1	Main wash	1-2-3-5-6-8 2-3-5*	86°F [30°C]	EH	14 minutes	W (normal)	2=30 seconds
	Drain	-	-	-	1 minute	D	
Step 2	Rinse 1	1-2-7 2*	-	EL	4 minutes	W (normal)	-
	Spin	-	-	-	1 minute	D	-
Step 3	Rinse 2	1-4-7 1-7*	-	EL(1)	4 minutes	W (normal)	3=30 seconds
	Final spin/Spin	-	-	-	9 minutes	H	-
	Slowdown	-	-	-	N/A	-	-
	Tumble	-	-	-	30 seconds (Models with-out pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-
(1) EH – Cabinet Freestanding 10.5 kg / 25 lb / 105 L models, Cabinet Hardmount 10.5 kg / 25 lb / 105 L (G-factor 200) models							

Table 53

Extraction - Low Speed

Wash Program 14: Extraction - Low Speed							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap supply**
Step 1	Rinse	1-4-7 1-7*	-	NH	3 minutes	W (normal)	3=30 seconds
	Final spin/Spin	-	-	-	5.5 minutes	L	-
	Slowdown	-	-	-	N/A	-	-

continues...

Table 54

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Wash Program 14: Extraction - Low Speed							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap supply**
	Tumble	-	-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (normal)	-

Table 54

Extraction - High Speed

Wash Program 15: Extraction - High Speed							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
Step 1	Rinse	1-4-7 1-7*	-	NH	3 minutes	W (normal)	3=30 seconds
	Final spin/Spin	-	-	-	12 minutes	H	-
	Slowdown	-	-	-	N/A	-	-
	Tumble	-	-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (normal)	-

Table 55

Sport 140°F [60°C]

Wash Program 16: Sport 140°F [60°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
No Prewash							
Step 1	Main wash	1-2-3-5-6-8 2-3-5*	129.2°F [54°C]	NL	6 minutes	W (normal)	2=30 seconds
	Drain	-	-	-	1 minute	L	

continues...

Table 56

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Wash Program 16: Sport 140°F [60°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
Step 2	Rinse 1	1-2-7 2*	-	NL	2 minutes	W (normal)	-
	Drain	-	-	-	1 minute	L	-
Step 3	Rinse 2	1-2-7 2*	-	NL	2 minutes	W (normal)	-
	Drain	-	-	-	1 minute	L	-
Step 4	Rinse 3	1-4-7 1-7*	-	NL	2 minutes	W (normal)	3=30 seconds
	Final spin/Spin	-	-	-	6 minutes	H	-
	Slowdown	-	-	-	N/A	-	-
	Tumble	-	-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-

Table 56

Mops 140°F [60°C]

Wash Program 17: Mops 140°F [60°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
Step 1	Prewash / wash	1-5-7 2-3-4-8*	33.8°F [1°C]	NH	2 minutes	W (normal)	1=30 seconds
	Spin	-	-	-	1 minute	L	-
Step 2	Main wash	1-2-3-5-6-8 2-3-5*	140°F [60°C]	NL	10 minutes	W (normal)	2=30 seconds
	Drain	-	-	-	1 minute	L	
Step 3	Rinse 1	1-2-7 2*	-	NH	2 minutes	W (normal)	-
	Spin	-	-	-	1 minute	L	-

continues...

Table 57

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Wash Program 17: Mops 140°F [60°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
Step 4	Rinse 2	1-2-7 2*	-	NH	2 minutes	W (normal)	-
	Spin	-	-	-	1 minute	L	-
Step 5	Rinse 3	1-4-7 1-7*	-	NL	3 minutes	W (normal)	3=30 seconds
	Final spin/Spin	-	-	-	6 minutes	H	-
	Slowdown	-	-	-	N/A	-	-
	Tumble	-	-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-

Table 57

Horse Cloths 104°F [40°C]

Wash Program 18: Horse Cloths 104°F [40°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
Step 1	Prewash / wash	1-5-7 2-3-4-8*	82.4 °F [28°C]	NH	4 minutes	W (normal)	1=30 seconds
	Spin	-	-	-	1 minute	L	-
Step 2	Main wash	1-2-3-5-6-8 2-3-5*	95°F [35°C]	NH	6 minutes	W (normal)	2=30 seconds
	Drain	-	-	-	30 seconds	D	
Step 3	Rinse 1	1-2-7 2*	-	NH	2 minutes	W (normal)	-
	Spin	-	-	-	1 minute	L	-
Step 4	Rinse 2	1-2-7 2*	-	NH	2 minutes	W (normal)	-
	Spin	-	-	-	1 minute	L	-

continues...

Table 58

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Wash Program 18: Horse Cloths 104°F [40°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
Step 5	Rinse 3	1-4-7 1-7*	-	NL	3 minutes	W (normal)	3=30 seconds
	Final spin/Spin	-	-	-	4 minutes	H	-
	Slowdown	-	-	-	N/A	-	-
	Tumble	-	-	-	30 seconds (Models with-out pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-

Table 58

Jeans 140°F [60°C]

Wash Program 19: Jeans 140°F [60°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
No Prewash							
Step 1	Main wash	1-2-3-5-6-8 2-3-5*	125.6°F [52°C]	NL	8 minutes	W (normal)	2=30 seconds
	Drain	-	-	-	1 minute	D	
Step 2	Rinse 1	1-2-7 2*	-	NH	3 minutes	W (normal)	-
	Spin	-	-	-	1 minute	L	-
Step 3	Rinse 2	1-4-7 1-7*	-	NH	3 minutes	W (normal)	3=30 seconds
	Final spin/Spin	-	-	-	6 minutes	H	-
	Slowdown	-	-	-	N/A	-	-

continues...

Table 59

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Wash Program 19: Jeans 140°F [60°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
	Tumble	-	-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-

Table 59

Starching

Wash Program 20: Starching							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
Step 1	Prewash / wash	1-5-7 2-3-4-8*	82.4°F [28°C]	NL	4 minutes	W (normal)	1=30 seconds
	Spin	-	-	-	6 minute	H	
	Slowdown	-	-	-	N/A	-	-
	Tumble	-	-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-

Table 60

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Wash Programs for Washing Machines with Front Soap Dispenser

Hot Wash 194°F [90°C]

Wash Program 1: Hot Wash 194°F [90°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
Step 1	Prewash / wash	2-3	86°F [30°C]	NL	5 minutes	W (normal)	A=30 seconds
	Spin	-	-	-	1 minute	L	-
Step 2	Main wash	2-3	194°F [90°C]	NL	10 minutes	W (normal)	B=30 seconds
	Drain	-	-	-	30 seconds	D	
Step 3	Rinse 1	2	-	NH	2 minutes	W (normal)	-
	Spin	-	-	-	1 minute	L	-
Step 4	Rinse 2	2	-	NH	2 minutes	W (normal)	-
	Spin	-	-	-	1 minute	L	-
Step 5	Rinse 3	1(2)	-	NL	3 minutes	W (normal)	D=30 seconds
	Final spin/Spin	-	-	-	5.5 minutes	H	-
	Slowdown	-	-	-	N/A	-	-
	Tumble	-	-	-	30 seconds (Models with-out pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-

Table 61

Warm Wash 140°F [60°C]

Wash Program 2: Warm Wash 140°F [60°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
Step 1	Prewash / wash	2-3	86°F [30°C]	NL	5 minutes	W (normal)	A=30 seconds
	Spin	-	-	-	1 minute	L	-
Step 2	Main wash	2-3	140°F [60°C]	NL	10 minutes	W (normal)	B=30 seconds
	Drain	-	-	-	30 seconds	D	-
Step 3	Rinse 1	2	-	NH	2 minute	W (normal)	-
	Spin	-	-	-	1 minute	L	-

continues...

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Wash Program 2: Warm Wash 140°F [60°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
Step 4	Rinse 2	2	-	NH	2 minutes	W (normal)	-
	Spin	-	-	-	1 minute	L	-
Step 5	Rinse 3	1(2)	-	NL	3 minutes	W (normal)	D=30 seconds
	Final spin/Spin	-	-	-	5.5 minutes	H	-
	Slowdown	-	-	-	N/A	-	-
	Tumble	-	-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-

Table 62

Colored Wash 104°F [40°C]

Wash Program 3: Colored Wash 104°F [40°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
Step 1	Prewash / wash	2-3	86°F [30°C]	NL	5 minutes	W (normal)	A=30 seconds
	Spin	-	-	-	1 minute	L	-
Step 2	Main wash	2-3	104°F [40°C]	NL	10 minutes	W (normal)	B=30 seconds
	Drain	-	-	-	30 seconds	D	
Step 3	Rinse 1	2	-	NH	2 minutes	W (normal)	-
	Spin	-	-	-	1 minute	L	-
Step 4	Rinse 2	2	-	NH	2 minutes	W (normal)	-
	Spin	-	-	-	1 minute	L	-
Step 5	Rinse 3	1(2)	-	NL	3 minutes	W (normal)	D=30 seconds
	Final spin/Spin	-	-	-	5.5 minutes	H	-
	Slowdown	-	-	-	N/A	-	-

continues...

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Wash Program 3: Colored Wash 104°F [40°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
	Tumble	-	-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-

Table 63

Bright Colored Wash 86°F [30°C]

Wash Program 4: Bright Colored Wash 86°F [30°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
No Prewash							
Step 1	Main wash	2-3	86°F [30°C]	NL	8 minutes	W (normal)	B=30 seconds
	Drain		-	-	30 seconds	D	
Step 2	Rinse 1	2	-	NH	2 minutes	W (normal)	-
	Drain	-	-	-	30 seconds	D	-
Step 3	Rinse 2	2	-	NH	2 minutes	W (normal)	-
	Drain	-	-	-	30 seconds	D	-
Step 4	Rinse 3	1(2)	-	NL	3 minutes	W (normal)	D=30 seconds
	Final spin/Spin		-	-	4 minute	H	-
	Slowdown		-	-	N/A	-	-
	Tumble		-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-

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Woolens 59°F [15°C]

Wash Program 5: Woolens 59°F [15°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
No Prewash							
Step 1	Main wash	2	59°F [15°C]	NH	6 minutes	W (gentle)	B=30 seconds
	Drain	-	-	-	30 seconds	D	
Step 2	Rinse 1	2	-	NH	2 minutes	W (gentle)	-
	Drain	-	-	-	30 seconds	D	-
Step 3	Rinse 2	2	-	NH	2 minutes	W (gentle)	-
	Drain		-	-	30 seconds	D	-
Step 4	Rinse 3	1(2)	-	NH	3 minutes	W (gentle)	D=30 seconds
	Final spin/Spin	-	-	-	2.5 minutes	L	-
	Slowdown		-	-	N/A	-	-
	Tumble		-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (gentle)	-

Table 65

Eco Hot Wash 194°F [90°C]

Wash Program 6: Eco Hot Wash 194F [90°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
No Prewash							
Step 1	Main wash	2 - 3	194°F [90°C]	EL	25 minutes	W (normal)	B=30 seconds
	Drain	-	-	-	30 seconds	D	
Step 2	Rinse 1	2	-	EH	4 minutes	W (normal)	-
	Drain	-	-	-	1 minute	L	-
Step 3	Rinse 2	2	-	NL	4 minutes	W (normal)	-
	Drain		-	-	1 minute	L	-
Step 4	Rinse 3	1(2)	-	EH	6 minutes	W (normal)	D=30 seconds
	Final spin/Spin	-	-	-	5.5 minutes	H	-

continues...

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Wash Program 6: Eco Hot Wash 194F [90°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
	Slowdown		-	-	N/A	-	-
	Tumble		-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-

Table 66

Eco Warm Wash 140°F [60°C]

Wash Program 7: Eco Warm Wash 140°F [60°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
No Prewash							
Step 1	Main wash	2 - 3	140°F [60°C]	EL	20 minutes	W (normal)	B=30 seconds
	Drain	-	-	-	30 seconds	D	-
Step 2	Rinse 1	2	-	EH	4 minutes	W (normal)	-
	Drain	-	-	-	1 minute	L	-
Step 3	Rinse 2	2	-	NL	4 minutes	W (normal)	-
	Drain		-	-	1 minute	L	-
Step 4	Rinse 3	1(2)	-	EH	6 minutes	W (normal)	D=30 seconds
	Final spin/Spin	-	-	-	5.5 minutes	H	-
	Slowdown		-	-	N/A	-	-
	Tumble		-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-

Table 67

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Eco Colored Wash 104°F [40°C]

Wash Program 8: Eco Colored Wash 104°F [40°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
No Prewash							
Step 1	Main wash	2 - 3	109.4°F [43°C]	EL	20 minutes	W (normal)	B=30 seconds
	Drain	-	-	-	30 seconds	D	-
Step 2	Rinse 1	2	-	EH	4 minutes	W (normal)	-
	Drain	-	-	-	1 minute	L	-
Step 3	Rinse 2	2	-	NL	4 minutes	W (normal)	-
	Drain		-	-	1 minute	L	-
Step 4	Rinse 3	1(2)	-	EH	6 minutes	W (normal)	D=30 seconds
	Final spin/Spin	-	-	-	5.5 minutes	H	-
	Slowdown		-	-	N/A	-	-
	Tumble		-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-

Table 68

Eco Bright Colored Wash 86°F [30°C]

Wash Program 9: Eco Bright Colored Wash 86°F [30°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
No Prewash							
Step 1	Main wash	2 - 3	93.2°F [34°C]	EL	20 minutes	W (normal)	B=30 seconds
	Drain	-	-	-	30 seconds	D	
Step 2	Rinse 1	2	-	EH	4 minutes	W (normal)	-
	Drain	-	-	-	1 minute	D	-
Step 3	Rinse 2	2	-	NL	4 minutes	W (normal)	-
	Drain	-	-	-	1 minute	D	-
Step 4	Rinse 3	1(2)	-	EH	6 minutes	W (normal)	D=30 seconds
	Final spin/Spin	-	-	-	4 minutes	H	-

continues...

Table 69

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Wash Program 9: Eco Bright Colored Wash 86°F [30°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
	Slowdown	-	-	-	N/A	-	-
	Tumble	-	-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-

Table 69

Super Eco Hot Wash 194°F [90°C]

Wash Program 10: Super Eco Hot Wash 194°F [90°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
No Prewash							
Step 1	Main wash	2 - 3	194°F [90°C]	EL	10 minutes	W (normal)	B=30 seconds
	Drain	-	-	-	1 minute	L	
Step 2	Rinse 1	2	-	EH	2 minutes	W (normal)	-
	Drain	-	-	-	1 minute	L	-
Step 3	Rinse 2	1(2)	-	EH	3 minutes	W (normal)	D=30 seconds
	Final spin/Spin	-	-	-	5.5 minutes	H	-
	Slowdown	-	-	-	N/A	-	-
	Tumble	-	-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5seconds)	-

Table 70

Super Eco Warm Wash 140°F [60°C]

Wash Program 11: Super Eco Warm Wash 140°F [60°C]							
	Sequence	**Inlet**	**Temp.**	**Level**	**Time**	**R.P.M (x)**	**Soap supply**
No Prewash							

continues...

Table 71

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Wash Program 11: Super Eco Warm Wash 140°F [60°C]							
	Sequence	**Inlet**	**Temp.**	**Level**	**Time**	**R.P.M (x)**	**Soap supply**
Step 1	Main wash	2 - 3	140°F [60°C]	EL	10 minutes	W (normal)	B=30 seconds
	Spin	-	-	-	1 minute	L	
Step 2	Rinse 1	2	-	EH	2 minutes	W (normal)	-
	Drain	-	-	-	1 minute	L	-
Step 3	Rinse 2	1(2)	-	EH	3 minutes	W (normal)	D=30 seconds
	Final spin/Spin	-	-	-	5.5 minutes	H	-
	Slowdown	-	-	-	N/A	-	-
	Tumble	-	-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-

Table 71

Super Eco Color Wash 104°F [40°C]

Wash Program 12: Super Eco Color Wash 104°F [40°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
No Prewash							
Step 1	Main wash	2 - 3	104°F [40°C]	EL	10 minutes	W (normal)	B=30 seconds
	Drain	-	-	-	1 minute	L	
Step 2	Rinse 1	2	-	EH	2 minutes	W (normal)	-
	Drain	-	-	-	1 minute	L	-
Step 3	Rinse 2	1(2)	-	EH	3 minutes	W (normal)	D=30 seconds
	Final spin/Spin	-	-	-	5.5 minutes	H	-
	Slowdown	-	-	-	N/A	-	-
	Tumble	-	-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-

Table 72

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Super Eco Bright Color Wash 86°F [30°C]

Wash Program 13: Super Eco Bright Color Wash 86°F [30°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
No Prewash							
Step 1	Main wash	2 - 3	86°F [30°C]	EL	8 minutes	W (normal)	B=30 seconds
	Drain	-	-	-	1 minute	D	
Step 2	Rinse 1	2	-	EH	2 minutes	W (normal)	-
	Drain	-	-	-	1 minute	D	-
Step 3	Rinse 2	1(2)	-	EH	3 minutes	W (normal)	D=30 seconds
	Final spin/Spin	-	-	-	4 minute	H	-
	Slowdown	-	-	-	N/A	-	-
	Tumble	-	-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-

Table 73

Extraction - Low Speed

Wash Program 14: Extraction - Low Speed							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
Step 1	Rinse	1(2)	-	NH	3 minutes	W (normal)	D=30 seconds
	Final spin/Spin	-	-	-	5.5 minutes	L	-
	Slowdown	-	-	-	N/A	-	-
	Tumble	-	-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (normal)	-

Table 74

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Extraction - High Speed

Wash Program 15: Extraction - High Speed							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
Step 1	Rinse	1(2)	-	NH	3 minutes	W (normal)	D=30 seconds
	Final spin/Spin	-	-	-	5.5 minutes	H	-
	Slowdown	-	-	-	N/A	-	-
	Tumble	-	-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (normal)	-

Table 75

Sport 140°F [60°C]

Wash Program 16: Sport 140°F [60°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
No Prewash							
Step 1	Main wash	2 - 3	129.2°F [54°C]	NL	6 minutes	W (normal)	2=30 seconds
	Drain	-	-	-	1 minute	L	
Step 2	Rinse 1	2	-	NL	2 minutes	W (normal)	-
	Drain	-	-	-	1 minute	L	-
Step 3	Rinse 2	2	-	NL	2 minutes	W (normal)	-
	Drain	-	-	-	1 minute	L	-
Step 4	Rinse 3	1	-	NL	2 minutes	W (normal)	D=30 seconds
	Final spin/Spin	-	-	-	6 minute	H	-
	Slowdown	-	-	-	N/A	-	-
	Tumble	-	-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-

Table 76

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Mops 140°F [60°C]

Wash Program 17: Mops 140°F [60°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
Step 1	Prewash / wash	2	33.8°F [1°C]	NH	2 minutes	W (normal)	1=30 seconds
	Spin	-	-	-	1 minute	L	
Step 2	Main wash	2 - 3	140°F [60°C]	NL	10 minutes	W (normal)	2=30 seconds
	Drain	-	-	-	1 minute	L	-
Step 3	Rinse 1	2	-	NH	2 minutes	W (normal)	-
	Spin	-	-	-	1 minute	L	-
Step 4	Rinse 2	1	-	NH	2 minutes	W (normal)	3=30 seconds
	Final spin/Spin	-	-	-	1 minute	L	-
Step 5	Rinse 3	1	-	NL	3 minutes	W (normal)	-
	Final spin/Spin	-	-	-	6 minutes	H	-
	Slowdown	-	-	-	N/A	-	-
	Tumble	-	-	-	30 seconds (Models with-out pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-

Table 77

Horse Cloths 104°F [40°C]

Wash Program 18: Horse Cloths 104°F [40°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
Step 1	Prewash / wash	2 -3	82.4°F [28°C]	NH	4 minutes	W (normal)	1=30 seconds
	Spin	-	-	-	1 minute	L	
Step 2	Main wash	2 - 3	95°F [35°C]	NH	6 minutes	W (normal)	2=30 seconds
	Drain	-	-	-	30 seconds	D	-
Step 3	Rinse 1	2	-	NH	2 minutes	W (normal)	-
	Spin	-	-	-	1 minute	L	-
Step 4	Rinse 2	2	-	NH	2 minutes	W (normal)	3=30 seconds
	Final spin/Spin	-	-	-	1 minute	L	-

continues...

Table 78

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Wash Program 18: Horse Cloths 104°F [40°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
Step 5	Rinse 3	1	-	NL	3 minutes	W (normal)	-
	Final spin/Spin	-	-	-	4 minutes	L	-
	Slowdown	-	-	-	N/A	-	-
	Tumble	-	-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-

Table 78

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Jeans 140°F [60°C]

Wash Program 19: Jeans 140°F [60°C]							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
No Prewash							
Step 1	Main wash	2 - 3	125.5°F [52°C]	NL	8 minutes	W (normal)	2=30 seconds
	Drain	-	-	-	1 minute	D	-
Step 2	Rinse 1	2	-	NH	3 minutes	W (normal)	3=30 seconds
	Spin	-	-	-	1 minute	L	-
Step 3	Rinse 2	1	-	NH	3 minutes	W (normal)	-
	Final spin/Spin	-	-	-	6 minutes	H	-
	Slowdown	-	-	-	N/A	-	-
	Tumble	-	-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-

Table 79

Starching

Wash Program 20: Starching							
	Sequence	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M (x)**	**Soap Supply**
Step 1	Prewash / wash	1 -5 - 7	82.4°F [28°C]	NL	4 minutes	W (normal)	1=30 seconds
	Spin	-	-	-	6 minutes	H	
	Slowdown	-	-	-	N/A	-	-
	Tumble	-	-	-	30 seconds (Models without pump drain) 5 minutes (Models with pump drain)	W (5 seconds / 5 seconds)	-

Table 80

Wash Programs for Wet Cleaning

Soap Supply Information

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Dosage Recommendation		
Detergent Number 1	**Detergent Number 2**	**Detergent Number 3**
Between 15 and 20 ml per kg. Depending of the hardness of the water.	Between 10 and 12 ml per kg. Depending of the hardness of the water.	Between 9 and 12 ml per kg. Depending of the hardness of the water.
Use preferably soft water th=0°.		
Load factor = 50%. For instance a 180 liters washer is a 9 kg for wet cleaning. So that mean that you have to put for detergent Number 1 between 135 and 180 ml. For detergent Number 2 between 90 and 108 ml.		

Table 81

Water Level Units Information							
Level (Units)	**6.5 kg / 14 lb. / 65 L**	**7.5 kg / 20 lb. / 80 L**	**10.5 kg / 25 lb. / 105 L**	**13.5 kg / 30 lb. / 135 L**	**18 kg / 40 lb. / 180 L**	**24 kg / 55 lb. / 240 L**	**28 kg / 70 lb. / 280 L**
Level A	1	1	1	1	1	1	1
Level B	7	8	8	9	12	12	12
Level C	8	9	9	10	13	13	13
Level D	9	10	10	11	14	14	14
Level E	10	11	11	12	15	15	15
Level F	11	12	12	13	16	16	16
Level G	12	13	13	14	17	17	17
Level H	13	14	14	15	18	18	18
Level I	14	15	15	16	19	19	19
Level J	15	16	16	17	20	20	20
Level K	16	17	17	18	21	21	21
Level L	17	18	18	19	22	22	22
Level M	18	19	19	20	23	23	23
Level N	19	20	20	21	24	24	24

Table 82

Softspin Information							
Spin (RPM)	**6.5 kg / 14 lb. / 65 L**	**7.5 kg / 20 lb. / 80 L**	**10.5 kg / 25 lb. / 105 L**	**13.5 kg / 30 lb. / 135 L**	**18 kg / 40 lb. / 180 L**	**24 kg / 55 lb. / 240 L**	**28 kg / 70 lb. / 280 L**
Spin A	220	220	20	20	180	180	180
Spin B	490	490	450	450	410	410	410
Spin C	710	710	660	660	600	600	600

continues...

Table 83

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Softspin Information							
Spin (RPM)	**6.5 kg / 14 lb. / 65 L**	**7.5 kg / 20 lb. / 80 L**	**10.5 kg / 25 lb. / 105 L**	**13.5 kg / 30 lb. / 135 L**	**18 kg / 40 lb. / 180 L**	**24 kg / 55 lb. / 240 L**	**28 kg / 70 lb. / 280 L**
Spin D	860	860	800	800	730	730	730
Spin E	920	920	850	850	770	770	770
Spin F	1010	1010	930	930	850	850	850
Spin G	1165	1165	1075	1075	980	980	915

Table 83

Speed Information							
Speed (RPM)	**6.5 kg / 14 lb. / 65 L**	**7.5 kg / 20 lb. / 80 L**	**10.5 kg / 25 lb. / 105 L**	**13.5 kg / 30 lb. / 135 L**	**18 kg / 40 lb. / 180 L**	**24 kg / 55 lb. / 240 L**	**28 kg / 70 lb. / 280 L**
Speed A	10	10	10	10	10	10	10
Speed B	12	12	12	12	12	12	12
Speed C	15	15	15	15	15	15	15
Speed D	38	38	38	38	38	38	38

Table 84

Wash Program 21: Wool Regular

Wash Program 21: Wool Regular							
Step Number	**Sequence**	**Inlet**	**Temperature**	**Level** (Refer to *Table 178*)	**Time**	**R.P.M. (x)** (Refer to *Table 173* and *Table 172*)	**Soap Supply** (Refer to *Table 81*)
1	Prewash 1	1, 5, 2, 6	68 °F [20 °C]	Level A	1 minute	Speed A	15 to 20 ml per kg, soap supply 1
	Drain	-	-	-	-	-	-
2	Prewash 2	1, 5, 2, 6	68 °F [20 °C]	Level C	30 seconds	Speed A	-
	Drain	-	-	-	-	-	-
3	Prewash 3	1, 5, 2, 6	68 °F [20 °C]	Level G	30 seconds	Speed A	-
	Drain	-	-	-	-	-	-
4	Wash 1	2, 3, 6, 8	71.6 °F [22 °C]	Level G	4 minutes	Speed A	-
	Static drain	-	-	-	30 seconds	-	-
5	No wash Softspin	-	-	-	1.5 minutes	Spin A	-

continues...

Table 85

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Wash Program 21: Wool Regular							
Step Number	**Sequence**	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M. (x)**	**Soap Supply**
				(Refer to *Table 178*)		**(Refer to *Table 173* and *Table 172*)**	**(Refer to *Table 81*)**
6	Prewash 1	1, 5, 2, 6	68 °F [20 °C]	Level C	1 minute	Speed A	10 to 12 ml per kg, soap supply 2
	Drain	-	-	-	-	-	-
7	Wash 2	2, 3, 6, 8	71.6 °F [22 °C]	Level G	3.5 minutes	Speed A	-
	Static drain	-	-	-	30 seconds	-	-
8	No wash Softspin	-	-	-	4.5 minutes	Spin G	-

Table 85

Wash Program 22: Wool Delicate

Wash Program 22: Wool Delicate							
Step Number	**Sequence**	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M. (x)**	**Soap Supply**
				(Refer to *Table 178*)		**(Refer to *Table 173* and *Table 172*)**	**(Refer to *Table 81*)**
1	Prewash 1	1, 5, 2, 6	68 °F [20 °C]	Level A	1 minute	Speed A	15 to 20 ml per kg, soap supply 1
	Drain	-	-	-	-	-	-
2	Prewash 2	1, 5, 2, 6	68 °F [20 °C]	Level C	30 seconds	Speed A	-
	Drain	-	-	-	-	-	-
3	Prewash 3	1, 5, 2, 6	68 °F [20 °C]	Level G	30 seconds	Speed A	-
	Drain	-	-	-	-	-	-
4	Wash 1	2, 3, 6, 8	71.6 °F [22 °C]	Level G	4 minutes	Speed A	-
	Static drain	-	-	-	30 seconds	-	-
5	No wash Softspin	-	-	-	1.5 minutes	Spin A	-
6	Prewash 1	1, 5, 2, 6	68 °F [20 °C]	Level C	1 minute	Speed A	10 to 12 ml per kg, soap supply 2
	Drain	-	-	-	-	-	-
7	Wash 2	2, 3, 6, 8	71.6 °F [22 °C]	Level G	3.5 minutes	Speed A	-
	Static drain	-	-	-	30 seconds	-	-

continues...

Table 86

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Wash Program 22: Wool Delicate							
Step Number	Sequence	Inlet	Temperature	Level (Refer to *Table 178*)	Time	R.P.M. (x) (Refer to *Table 173* and *Table 172*)	Soap Supply (Refer to *Table 81*)
8	No wash Softspin	-	-	-	4 minutes	Spin F	-

Table 86

Wash Program 23: Silk Regular

Wash Program 23: Silk Regular							
Step Number	Sequence	Inlet	Temperature	Level (Refer to *Table 178*)	Time	R.P.M. (x) (Refer to *Table 173* and *Table 172*)	Soap Supply (Refer to *Table 81*)
1	Prewash 1	1, 5, 2, 6	64.4 °F [18 °C]	Level A	1 minute	Speed A	15 to 20 ml per kg, soap supply 1
	Drain	-	-	-	-	-	-
2	Prewash 2	1, 5, 2, 6	64.4 °F [18 °C]	Level F	30 seconds	Speed A	-
	Drain	-	-	-	-	-	-
3	Prewash 3	1, 5, 2, 6	64.4 °F [18 °C]	Level L	30 seconds	Speed A	-
	Drain	-	-	-	-	-	-
4	Wash 1	2, 3, 6, 8	68 °F [20 °C]	Level L	3.5 minutes	Speed A	-
	Static drain	-	-	-	30 seconds	-	-
6	Prewash 1	1, 5, 2, 6	64.4 °F [18 °C]	Level F	1 minute	Speed A	10 to 12 ml per kg, soap supply 2
	Drain	-	-	-	-	-	-
7	Wash 2	2, 3, 6, 8	68 °F [20 °C]	Level L	3 minutes	Speed A	-
	Static drain	-	-	-	30 seconds	-	-
8	No wash Softspin	-	-	-	3 minutes	Spin B	-

Table 87

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Wash Program 24: Silk Delicate

Wash Program 24: Silk Delicate							
Step Number	**Sequence**	**Inlet**	**Temperature**	**Level** (Refer to *Table 178*)	**Time**	**R.P.M. (x)** (Refer to *Table 173* and *Table 172*)	**Soap Supply** (Refer to *Table 81*)
1	Prewash 1	1, 5, 2, 6	64.4 °F [18 °C]	Level A	30 seconds	Speed A	15 to 20 ml per kg, soap supply 1
	Drain	-	-	-	-	-	-
2	Prewash 2	1, 5, 2, 6	64.4 °F [18 °C]	Level F	30 seconds	Speed A	-
	Drain	-	-	-	-	-	-
3	Prewash 3	1, 5, 2, 6	64.4 °F [18 °C]	Level J	30 seconds	Speed A	-
	Drain	-	-	-	-	-	-
4	Wash 1	2, 3, 6, 8	68 °F [20 °C]	Level J	3 minutes	Speed A	-
	Static drain	-	-	-	30 seconds	-	-
6	Prewash 1	1, 5, 2, 6	64.4 °F [18 °C]	Level F	1 minute	Speed A	10 to 12 ml per kg, soap supply 2
	Drain	-	-	-	-	-	-
7	Wash 2	2, 3, 6, 8	68 °F [20 °C]	Level J	2.5 minutes	Speed A	-
	Static drain	-	-	-	30 seconds	-	-

Table 88

Wash Program 25: All in One Regular

Wash Program 25: All in One Regular							
Step Number	**Sequence**	**Inlet**	**Temperature**	**Level** (Refer to *Table 178*)	**Time**	**R.P.M. (x)** (Refer to *Table 173* and *Table 172*)	**Soap Supply** (Refer to *Table 81*)
1	Prewash 1	1, 5, 2, 6	68 °F [20 °C]	Level A	1 minute	Speed B	9 to 12 ml per kg, soap supply 3
	Drain	-	-	-	-	-	-
2	Prewash 2	1, 5, 2, 6	68 °F [20 °C]	Level E	30 seconds	Speed B	-
	Drain	-	-	-	-	-	-
3	Prewash 3	1, 5, 2, 6	68 °F [20 °C]	Level I	30 seconds	Speed B	-

continues...

Table 89

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Wash Program 25: All in One Regular							
Step Number	**Sequence**	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M. (x)**	**Soap Supply**
				(Refer to *Table 178*)		**(Refer to *Table 173* and *Table 172*)**	**(Refer to *Table 81*)**
	Drain	-	-	-	-	-	-
4	Wash 1	2, 3, 6, 8	73.4 °F [23 °C]	Level I	5.5 minutes	Speed C	-
	Static drain	-	-	-	30 seconds	-	-
5	No wash Softspin	-	-	-	2 minutes	Spin A	-
7	Wash 2	2, 3, 6, 8	73.4 °F [23 °C]	Level I	2.5 minutes	Speed C	-
	Static drain	-	-	-	30 seconds	-	-
8	No wash Softspin	-	-	-	4.5 minutes	Spin E	-

Table 89

Wash Program 26: All in One Delicate

Wash Program 26: All in One Delicate							
Step Number	**Sequence**	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M. (x)**	**Soap Supply**
				(Refer to *Table 178*)		**(Refer to *Table 173* and *Table 172*)**	**(Refer to *Table 81*)**
1	Prewash 1	1, 5, 2, 6	68 °F [20 °C]	Level A	1 minute	Speed B	9 to 12 ml per kg, soap supply 3
	Drain	-	-	-	-	-	-
2	Prewash 2	1, 5, 2, 6	68 °F [20 °C]	Level E	30 seconds	Speed B	-
	Drain	-	-	-	-	-	-
3	Prewash 3	1, 5, 2, 6	68 °F [20 °C]	Level I	30 seconds	Speed B	-
	Drain	-	-	-	-	-	-
4	Wash 1	2, 3, 6, 8	73.4 °F [23 °C]	Level I	5 minutes	Speed C	-
	Static drain	-	-	-	30 seconds	-	-
5	No wash Softspin	-	-	-	2 minutes	Spin A	-
7	Wash 2	2, 3, 6, 8	73.4 °F [23 °C]	Level I	2.5 minutes	Speed C	-
	Static drain	-	-	-	30 seconds	-	-
8	No wash Softspin	-	-	-	4 minutes	Spin D	-

Table 90

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Wash Program 27: Rinse Drum

Wash Program 27: Rinse Drum							
Step Number	**Sequence**	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M. (x)**	**Soap Supply**
				(Refer to *Table 178*)		**(Refer to *Table 173* and *Table 172*)**	**(Refer to *Table 81*)**
1	Prewash 1	1, 5, 2, 6	68 °F [20 °C]	Level E	1.5 minutes	Speed D	9 to 12 ml per kg, soap supply 3
	Drain	-	-	-	30 seconds	-	-
4	Wash 1	2, 3, 6, 8	68 °F [20 °C]	Level E	1.5 minutes	Speed D	-
	Drain	-	-	-	30 seconds	-	-
5	No wash Spin	-	-	-	1.5 minutes	Spin B	-

Table 91

Wash Program 28: Sanitation

Wash Program 28: Sanitation							
Step Number	**Sequence**	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M. (x)**	**Soap Supply**
				(Refer to *Table 178*)		**(Refer to *Table 173* and *Table 172*)**	**(Refer to *Table 81*)**
1	Prewash 1	1, 5, 2, 6	86 °F [30 °C]	Level G	3 minutes	Speed D	-
	Drain	-	-	-	1 minute • spin 400(1) • spin 370 (2)	-	-
4	Wash 1	2, 3, 6, 8	167 °F [75 °C]	Level G	10 minutes	Speed D	-
	Drain	-	-	-	30 seconds	-	-
7	Wash 2	2, 3, 6, 8	68 °F [20 °C]	Level G	3 minutes	Speed D	-
	Drain	-	-	-	3 minutes • spin 1035(1) • spin 940(2) • spin G(3)	-	-
(1)Applicable to models of: 6.5 kg / 14 lb. / 65 L; 7.5 kg / 20 lb. / 80 L; 10.5 kg / 25 lb. / 105 L; 13.5 kg / 30 lb. / 135 L							
(2)Applicable to models of: 18 kg / 40 lb. / 180 L; 24 kg / 55 lb. / 240 L							
(3)Applicable to models of: 28 kg / 70 lb. / 280 L							

Table 92

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Wash Program 29: Spin Modest

Wash Program 29: Spin Modest							
Step Number	**Sequence**	**Inlet**	**Temperature**	**Level** (Refer to *Table 178*)	**Time**	**R.P.M. (x)** (Refer to *Table 173* and *Table 172*)	**Soap Supply** (Refer to *Table 81*)
8	No wash Softspin	-	-	-	• 4 minutes(1) • 4.5 minutes(2)	Spin E	-
(1)Applicable to models of: 6.5 kg / 14 lb. / 65 L; 7.5 kg / 20 lb. / 80 L; 10.5 kg / 25 lb. / 105 L; 13.5 kg / 30 lb. / 135 L							
(2)Applicable to models of: 18 kg / 40 lb. / 180 L; 24 kg / 55 lb. / 240 L; 28 kg / 70 lb. / 280 L							

Table 93

Wash Program 30: Spin Delicate

Wash Program 30: Spin Delicate							
Step Number	**Sequence**	**Inlet**	**Temperature**	**Level** (Refer to *Table 178*)	**Time**	**R.P.M. (x)** (Refer to *Table 173* and *Table 172*)	**Soap Supply** (Refer to *Table 81*)
8	No wash Softspin	-	-	-	3 minutes	Spin B	-

Table 94

Wash Program 31: Rinse Modest

Wash Program 31: Rinse Modest							
Step Number	**Sequence**	**Inlet**	**Temperature**	**Level** (Refer to *Table 178*)	**Time**	**R.P.M. (x)** (Refer to *Table 173* and *Table 172*)	**Soap Supply** (Refer to *Table 81*)
6	Prewash 1	1, 5, 2, 6	68 °F [20 °C]	Level D	30 seconds	Speed A	-
	Drain	-	-	-	-	-	-
7	Wash 2	2, 3, 6, 8	68 °F [20 °C]	Level F	3 minutes	Speed A	-
	Static drain	-	-	-	30 seconds	-	-
8	No wash Softspin	-	-	-	4 minutes	Spin E	-

Table 95

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Wash Program 32: Rinse Low

Wash Program 32: Rinse Low							
Step Number	**Sequence**	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M. (x)**	**Soap Supply**
				(Refer to *Table 178*)		**(Refer to *Table 173* and *Table 172*)**	**(Refer to *Table 81*)**
6	Prewash 1	1, 5, 2, 6	68 °F [20 °C]	Level D	30 seconds	Speed A	-
	Drain	-	-	-	-	-	-
7	Wash 2	2, 3, 6, 8	68 °F [20 °C]	Level F	2.5 minutes	Speed A	-
	Static drain	-	-	-	30 seconds	-	-
8	No wash Softspin	-	-	-	3 minutes	Spin B	-

Table 96

Wash Program 33: Spin High

Wash Program 33: Spin High							
Step Number	**Sequence**	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M. (x)**	**Soap Supply**
				(Refer to *Table 178*)		**(Refer to *Table 173* and *Table 172*)**	**(Refer to *Table 81*)**
8	No wash Softspin	-	-	-	4.5 minutes	Spin G	-

Table 97

Wash Program 34: Spin Medium

Wash Program 34: Spin Medium							
Step Number	**Sequence**	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M. (x)**	**Soap Supply**
				(Refer to *Table 178*)		**(Refer to *Table 173* and *Table 172*)**	**(Refer to *Table 81*)**
8	No wash Softspin	-	-	-	3 minutes	Spin C	-

Table 98

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Wash Program 35: Rinse with Condit.

Wash Program 35: Rinse with Condit.							
Step Number	**Sequence**	**Inlet**	**Temperature**	**Level** (Refer to *Table 178*)	**Time**	**R.P.M. (x)** (Refer to *Table 173* and *Table 172*)	**Soap Supply** (Refer to *Table 81*)
6	Prewash 1	1, 5, 2, 6	68 °F [20 °C]	Level C	1 minute	Speed A	10 to 12 ml per kg, soap supply 2
	Drain	-	-	-	-	-	-
7	Wash 2	2, 3, 6, 8	71.6 °F [22 °C]	Level E	3.5 minutes	Speed A	-
	Static drain	-	-	-	30 seconds	-	-
8	No wash Softspin	-	-	-	4 minutes	Spin E	-

Table 99

Wash Program 36: All in One Reg +

Wash Program 36: All in One Reg +							
Step Number	**Sequence**	**Inlet**	**Temperature**	**Level** (Refer to *Table 178*)	**Time**	**R.P.M. (x)** (Refer to *Table 173* and *Table 172*)	**Soap Supply** (Refer to *Table 81*)
1	Prewash 1	1, 5, 2, 6	68 °F [20 °C]	Level A	1 minute	Speed B	9 to 12 ml per kg, soap supply 3
	Drain	-	-	-	-	-	-
2	Prewash 2	1, 5, 2, 6	68 °F [20 °C]	Level G	30 seconds	Speed B	-
	Drain	-	-	-	-	-	-
3	Prewash 3	1, 5, 2, 6	68 °F [20 °C]	Level M	30 seconds	Speed B	-
	Drain	-	-	-	-	-	-
4	Wash 1	2, 3, 6, 8	73.4 °F [23 °C]	Level M	6 minutes	Speed C	-
	Static drain	-	-	-	30 seconds	-	-
5	No wash Softspin	-	-	-	2 minutes	Spin A	-
7	Wash 2	2, 3, 6, 8	73.4 °F [23 °C]	Level M	2.5 minutes	15	-
	Static drain	-	-	-	30 seconds	-	-
8	No wash Softspin	-	-	-	4.5 minutes	Spin G	-

Table 100

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Wash Program 37: Wedding Gowns

Wash Program 37: Wedding Gowns							
Step Number	**Sequence**	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M. (x)**	**Soap Supply**
				(Refer to *Table 178*)		**(Refer to *Table 173* and *Table 172*)**	**(Refer to *Table 81*)**
1	Prewash 1	1, 5, 2, 6	64.4 °F [18 °C]	Level A	1 minute	Speed B	15 to 20 ml per kg, soap supply 1
	Drain	-	-	-	-	-	-
2	Prewash 2	1, 5, 2, 6	64.4 °F [18 °C]	Level H	30 seconds	Speed B	-
	Drain	-	-	-	-	-	-
3	Prewash 3	1, 5, 2, 6	64.4 °F [18 °C]	Level M	30 seconds	Speed B	-
	Drain	-	-	-	-	-	-
4	Wash 1	2, 3, 6, 8	68 °F [20 °C]	Level M	4.5 minutes	Speed B	-
	Static drain	-	-	-	30 seconds	-	-
6	Prewash 1	1, 5, 2, 6	64.4 °F [18 °C]	Level H	1 minute	Speed B	10 to 12 ml per kg, soap supply 2
	Drain	-	-	-	-	-	-
7	Wash 2	2, 3, 6, 8	68 °F [20 °C]	Level M	3.5 minutes	Speed B	-
	Static drain	-	-	-	30 seconds	-	-
8	No wash Softspin	-	-	-	3 minutes	Spin B	-

Table 101

Wash Program 38: Wool Blanket

Wash Program 38: Wool Blanket							
Step Number	**Sequence**	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M. (x)**	**Soap Supply**
				(Refer to *Table 178*)		**(Refer to *Table 173* and *Table 172*)**	**(Refer to *Table 81*)**
1	Prewash 1	1, 5, 2, 6	68 °F [20 °C]	Level A	1 minute	Speed B	15 to 20 ml per kg, soap supply 1
	Drain	-	-	-	-	-	-
2	Prewash 2	1, 5, 2, 6	68 °F [20 °C]	Level F	30 seconds	Speed C	-
	Drain	-	-	-	-	-	-

continues...

Table 102

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Wash Program 38: Wool Blanket							
Step Number	**Sequence**	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M. (x)**	**Soap Supply**
				(Refer to *Table 178*)		**(Refer to *Table 173* and *Table 172*)**	**(Refer to *Table 81*)**
3	Prewash 3	1, 5, 2, 6	68 °F [20 °C]	Level K	30 seconds	Speed C	-
	Drain	-	-	-	-	-	-
4	Wash 1	2, 3, 6, 8	71.6 °F [22 °C]	Level K	4 minutes	Speed C	-
	Static drain	-	-	-	30 seconds	-	-
5	No wash Softspin	-	-	-	1.5 minutes	Spin A	-
6	Prewash 1	1, 5, 2, 6	68 °F [20 °C]	Level F	1 minute	Speed C	10 to 12 ml per kg, soap supply 2
	Drain	-	-	-	-	-	-
7	Wash 2	2, 3, 6, 8	71.6 °F [22 °C]	Level K	3.5 minutes	Speed C	-
	Static drain	-	-	-	30 seconds	-	-
8	No wash Softspin	-	-	-	4 minutes	Spin F	-

Table 102

Wash Program 51: Wool 50% Regular

Wash Program 51: Wool 50% Regular							
Step Number	**Sequence**	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M. (x)**	**Soap Supply**
				(Refer to *Table 178*)		**(Refer to *Table 173* and *Table 172*)**	**(Refer to *Table 81*)**
1	Prewash 1	1, 5, 2, 6	68 °F [20 °C]	Level A	1 minute	Speed A	15 to 20 ml per kg, soap supply 1
	Drain	-	-	-	-	-	-
2	Prewash 2	1, 5, 2, 6	68 °F [20 °C]	Level B	30 seconds	Speed A	-
	Drain	-	-	-	-	-	-
3	Prewash 3	1, 5, 2, 6	68 °F [20 °C]	Level D	30 seconds	Speed A	-
	Drain	-	-	-	-	-	-
4	Wash 1	2, 3, 6, 8	71.6 °F [22 °C]	Level D	4 minutes	Speed A	-
	Static drain	-	-	-	30 seconds	-	-
5	No wash Softspin	-	-	-	1.5 minutes	Spin A	-

continues...

Table 103

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Wash Program 51: Wool 50% Regular							
Step Number	**Sequence**	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M. (x)**	**Soap Supply**
				(Refer to *Table 178*)		**(Refer to *Table 173* and *Table 172*)**	**(Refer to *Table 81*)**
6	Prewash 1	1, 5, 2, 6	68 °F [20 °C]	Level B	1 minute	Speed A	10 to 12 ml per kg, soap supply 2
	Drain	-	-	-	-	-	-
7	Wash 2	2, 3, 6, 8	71.6 °F [22 °C]	Level D	3.5 minutes	Speed A	-
	Static drain	-	-	-	30 seconds	-	-
8	No wash Softspin	-	-	-	4.5 minutes	Spin G	-

Table 103

Wash Program 52: Wool 50% Delicate

Wash Program 52: Wool 50% Delicate							
Step Number	**Sequence**	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M. (x)**	**Soap Supply**
				(Refer to *Table 178*)		**(Refer to *Table 173* and *Table 172*)**	**(Refer to *Table 81*)**
1	Prewash 1	1, 5, 2, 6	68 °F [20 °C]	Level A	1 minute	Speed A	15 to 20 ml per kg, soap supply 1
	Drain	-	-	-	-	-	-
2	Prewash 2	1, 5, 2, 6	68 °F [20 °C]	Level B	30 seconds	Speed A	-
	Drain	-	-	-	-	-	-
3	Prewash 3	1, 5, 2, 6	68 °F [20 °C]	Level D	30 seconds	Speed A	-
	Drain	-	-	-	-	-	-
4	Wash 1	2, 3, 6, 8	71.6 °F [22 °C]	Level D	4 minutes	Speed A	-
	Static drain	-	-	-	30 seconds	-	-
5	No wash Softspin	-	-	-	1.5 minutes	Spin A	-
6	Prewash 1	1, 5, 2, 6	68 °F [20 °C]	Level B	1 minute	Speed A	10 to 12 ml per kg, soap supply 2
	Drain	-	-	-	-	-	-
7	Wash 2	2, 3, 6, 8	71.6 °F [22 °C]	Level D	3.5 minutes	Speed A	-
	Static drain	-	-	-	30 seconds	-	-

continues...

Table 104

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Wash Program 52: Wool 50% Delicate							
Step Number	**Sequence**	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M. (x)**	**Soap Supply**
				(Refer to *Table 178*)		**(Refer to *Table 173* and *Table 172*)**	**(Refer to *Table 81*)**
8	No wash Softspin	-	-	-	4 minutes	Spin F	-

Table 104

Wash Program 53: Silk 50% Regular

Wash Program 53: Silk 50% Regular							
Step Number	**Sequence**	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M. (x)**	**Soap Supply**
				(Refer to *Table 178*)		**(Refer to *Table 173* and *Table 172*)**	**(Refer to *Table 81*)**
1	Prewash 1	1, 5, 2, 6	64.4 °F [18 °C]	Level A	1 minute	Speed A	15 to 20 ml per kg, soap supply 1
	Drain	-	-	-	-	-	-
2	Prewash 2	1, 5, 2, 6	64.4 °F [18 °C]	Level F	30 seconds	Speed A	-
	Drain	-	-	-	-	-	-
3	Prewash 3	1, 5, 2, 6	64.4 °F [18 °C]	Level G	30 seconds	Speed A	-
	Drain	-	-	-	-	-	-
4	Wash 1	2, 3, 6, 8	68 °F [20 °C]	Level $H_{(1)}$; Level $G_{(2)}$	3.5 minutes	Speed A	-
	Static drain	-	-	-	30 seconds	-	-
6	Prewash 1	1, 5, 2, 6	64.4 °F [18 °C]	Level E	1 minute	Speed A	10 to 12 ml per kg, soap supply 2
	Drain	-	-	-	-	-	-
7	Wash 2	2, 3, 6, 8	68 °F [20 °C]	Level $H_{(1)}$; Level $G_{(2)}$	3 minutes	Speed A	-
	Static drain	-	-	-	30 seconds	-	-
8	No wash Softspin	-	-	-	3 minutes	Spin B	-
(1)Applicable to models of: 6.5 kg / 14 lb. / 65 L; 7.5 kg / 20 lb. / 80 L; 10.5 kg / 25 lb. / 105 L							
(2)Applicable to models of: 13.5 kg / 30 lb. / 135 L; 18 kg / 40 lb. / 180 L; 24 kg / 55 lb. / 240 L; 28 kg / 70 lb. / 280 L							

Table 105

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Wash Program 54: Silk 50% Delicate

Wash Program 54: Silk 50% Delicate							
Step Number	**Sequence**	**Inlet**	**Temperature**	**Level** (Refer to *Table 178*)	**Time**	**R.P.M. (x)** (Refer to *Table 173* and *Table 172*)	**Soap Supply** (Refer to *Table 81*)
1	Prewash 1	1, 5, 2, 6	64.4 °F [18 °C]	Level A	30 seconds	Speed A	15 to 20 ml per kg, soap supply 1
	Drain	-	-	-	-	-	-
2	Prewash 2	1, 5, 2, 6	64.4 °F [18 °C]	Level E	30 seconds	Speed A	-
	Drain	-	-	-	-	-	-
3	Prewash 3	1, 5, 2, 6	64.4 °F [18 °C]	Level F	30 seconds	Speed A	-
	Drain	-	-	-	-	-	-
4	Wash 1	2, 3, 6, 8	68 °F [20 °C]	Level F	3 minutes	Speed A	-
	Static drain	-	-	-	30 seconds	-	-
6	Prewash 1	1, 5, 2, 6	64.4 °F [18 °C]	Level D	1 minute	Speed A	10 to 12 ml per kg, soap supply 2
	Drain	-	-	-	-	-	-
7	Wash 2	2, 3, 6, 8	68 °F [20 °C]	Level F	2.5 minutes	Speed A	-
	Static drain	-	-	-	30 seconds	-	-

Table 106

Wash Program 55: AIO 50% Regular

Wash Program 55: AIO 50% Regular							
Step Number	**Sequence**	**Inlet**	**Temperature**	**Level** (Refer to *Table 178*)	**Time**	**R.P.M. (x)** (Refer to *Table 173* and *Table 172*)	**Soap Supply** (Refer to *Table 81*)
1	Prewash 1	1, 5, 2, 6	68 °F [20 °C]	Level A	1 minute	Speed B	9 to 12 ml per kg, soap supply 3
	Drain	-	-	-	-	-	-
2	Prewash 2	1, 5, 2, 6	68 °F [20 °C]	Level C	30 seconds	Speed B	-
	Drain	-	-	-	-	-	-
3	Prewash 3	1, 5, 2, 6	68 °F [20 °C]	Level E	30 seconds	Speed B	-

continues...

Table 107

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Wash Program 55: AIO 50% Regular							
Step Number	**Sequence**	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M. (x)**	**Soap Supply**
				(Refer to *Table 178*)		**(Refer to *Table 173* and *Table 172*)**	**(Refer to *Table 81*)**
	Drain	-	-	-	-	-	-
4	Wash 1	2, 3, 6, 8	73.4 °F [23 °C]	Level E	5.5 minutes	Speed C	-
	Static drain	-	-	-	30 seconds	-	-
5	No wash Softspin	-	-	-	2 minutes	Spin A	-
7	Wash 2	2, 3, 6, 8	73.4 °F [23 °C]	Level E	2.5 minutes	Speed C	-
	Static drain	-	-	-	30 seconds	-	-
8	No wash Softspin	-	-	-	4.5 minutes	Spin E	-

Table 107

Wash Program 56: AIO 50% Delicate

Wash Program 56: AIO 50% Delicate							
Step Number	**Sequence**	**Inlet**	**Temperature**	**Level**	**Time**	**R.P.M. (x)**	**Soap Supply**
				(Refer to *Table 178*)		**(Refer to *Table 173* and *Table 172*)**	**(Refer to *Table 81*)**
1	Prewash 1	1, 5, 2, 6	68 °F [20 °C]	Level A	1 minute	Speed B	9 to 12 ml per kg, soap supply 3
	Drain	-	-	-	-	-	-
2	Prewash 2	1, 5, 2, 6	68 °F [20 °C]	Level C	30 seconds	Speed B	-
	Drain	-	-	-	-	-	-
3	Prewash 3	1, 5, 2, 6	68 °F [20 °C]	Level E	30 seconds	Speed B	-
	Drain	-	-	-	-	-	-
4	Wash 1	2, 3, 6, 8	73.4 °F [23 °C]	Level E	5 minutes	Speed C	-
	Static drain	-	-	-	30 seconds	-	-
5	No wash Softspin	-	-	-	2 minutes	Spin A	-
7	Wash 2	2, 3, 6, 8	73.4 °F [23 °C]	Level E	2.5 minutes	Speed C	-
	Static drain	-	-	-	30 seconds	-	-
8	No wash Softspin	-	-	-	4 minutes	Spin D	-

Table 108

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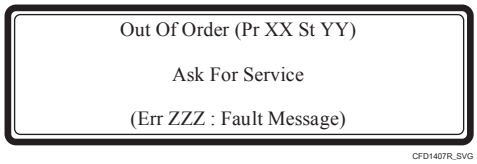
Troubleshooting

Display Messages

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

Fault Messages

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



XX : the program number

YY : the program step number

Err ZZZ : the number of the occurred erro r

Fault Message : the text label of the error message

Figure 29

How to Handle Fault Messages

WARNING

Check in the manual to see what problem the error message corresponds with. Ask the assistance of an experienced technician to solve the problem. All the safety precautions must be followed before each intervention.

C075

You can overrule and erase fault messages by:

- Pressing the SERVICE INFORMATION button.
- Pressing the STOP or START button.
- Switching the power off/on.
- Opening the door (fault 4 and 41).

For safety reasons the door will not be unlocked if:

- There is still water in the drum.
- The water temperature is above 131°F [55°C] .
- The drum is still turning (a safety time will be respected until the drum comes to a standstill).
- There is a problem with the door lock system.

Each time at the end of the cycle, the Wash computer will fulfill a safety test sequence.

If at the end of the cycle the safety conditions are not fulfilled, the messages "TOO HOT" or "WATER IN CAGE" will be displayed.

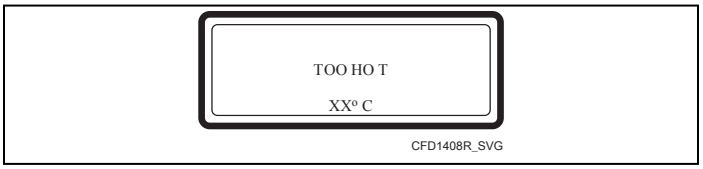


Figure 30

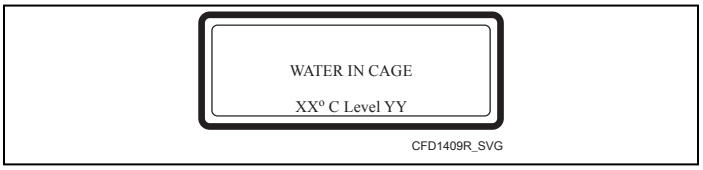


Figure 31

If the problem disappears (the water has dropped below the safety level for spin or the water temperature has dropped below 131°F [55°C]) the Error message "TOO HOT" or "WATER IN CAGE" will disappear automatically.

WARNING

It's up to the operator to take the necessary precautions if the drain valve is not functional and if there is still hot water in the tub at the end of the wash cycle. On the display the actual water temperature and level will be displayed. Wait until the water is drained and until the water has cooled before all interventions as hot water can cause severe burns. Care must be taken that nobody gets burned due to hot water.

C076

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NOTE: The error message "Too Hot" can also appear at the end of a cycle even if no failure has occurred as an example, suppose a wash program with a hot wash. After this hot wash sequence, no sequence with a low water temperature has been programmed. At the end of such a wash cycle, the temperature in the tub will stay high even if there is no water in the tub. As a result the wash computer will decide that it's not safe to open the door as the measured temperature inside the tub is too high. Without inserting cold water inside the tub, it can take a long time before the temperature drops to an acceptable safe level. Once the temperature in the drum has dropped sufficiently, the failure message will disappear and the door will be unlocked automatically.

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

WHEN SAFETY IS INVOLVED

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

WHEN SAFETY IS NOT INVOLVED

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

SPECIAL CASES:

Fault 11: Fill Time Failure and Fault 14: Heating Time Failure:

- After overruling and erasing the failure message, you can restart or stop the sequence, as Continue ? will be displayed.

Possible cause:

- Water supply inlets closed.
- Decreasing capacity of the heating elements.

Fault 31: Initialization Fault Inverter and Fault 32: Verification Fault Inverter:

- Indicate that the frequency inverter is not loaded with the correct parameter settings, the washing machine can be damaged when the inverter is functioning with the wrong settings. Do not use the washing machine before a technician has inspected the problem.

Fault 41: Service Due:

- Will occur over and over again until you have reset the cycle counter. Refer to *Service Menu* as to how to reset the cycle counter.

Hygienic Barrier Machines only:

- Correct lock of drum door is checked after start of wash process. If the drum door is not correctly locked, machine stops wash cycle and shows warning "Drum door not locked". Open machine and check drum lock lever position. If the drum lock lever position is correct and the warning "Drum door not locked" appears, the calibration procedure must be executed.

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Failure Message Overview

Failure Message Overview				
Number	**Failure Message**	**Failure**	**Action**	**Fault Occurrence**
E2	No Drain End	Drain failure	Full Stop + tumble	Draining
E3	Tilt Fault	Safety switch activated	Full stop + tumble	Whole cycle, revolutions under the distribution revolutions level.
E4	Imbalance	Safety switch activated during the transition from distribution into spin sequence.	Skip + continue	Spin
E5	Tilt High Sp	Safety switch activated at high revolutions.	Full stop + safety time	High revolutions
E6	Door Switch	Door switch failure	Full stop + safety time	Whole cycle
E7	Door Coil	Door lock failure	Full stop + safety time	Whole cycle
E8	Door Start	Door lock failure in the beginning of cycle	Don’t start	In the beginning of cycle
E9	Door End	Door lock opening failure at the end of cycle.	Don’t start	End cycle
E11	No Fill	Fill failure	Full stop + request for Continue	While filling
E12	OverFill	Failure due to water overfill (water level above the pre-set value)	Full stop + tumble	After filling or during the filling procedure.
E13	No Heating	Heating failure	Full stop + tumble	While heating
E14	Heat. Time	Heating time failure	Full stop + request for continue	While heating
E15	Too Hot	Too Hot	Full stop + tumble	While heating
E18	Door Coil	Door lock failure	Full stop + safety time	Whole cycle
E19	Door Start	Door lock failure at the beginning of cycle	Don't start	At beginning of cycle
E21	OverFlow	Water level too high	Full stop + tumble	After filling or during the filling procedure
E24	Level Sens	Defective level sensor	Continue + Don’t start	Before start up
E25	Temp Sensor	Defective temperature sensor	Continue + Don’t start	Before start up
E26	Mitsub. Code	Undefined frequency inverter error code	Full stop + tumble	Whole cycle
E27	Invert.Com.	Communication fault inverter	Full stop + safety time	Whole cycle
E28	THT time	THT Time out	Full stop + safety time	At spin sequence

continues...

Table 109

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Failure Message Overview				
Number	**Failure Message**	**Failure**	**Action**	**Fault Occurrence**
E29	OV3/OP time	OV3 Time out / E.OP	Full stop + safety time	At spin sequence
E31	Load Par	Initialization fault frequency inverter	Don’t start	When setting up parameters
E32	Verify Par	Verification fault frequency inverter parameters	Don’t start	At loading parameters
E35	Wrong Softw	Wrong Softw	Don’t start	New software version
E36	Imbalance	Safety Switch activated.	Reduction of spinning sequence revolutions. For Information only.	Spinning sequence
E37	No Drain Spr	Drain failure at the Spray Sequence	Full stop + tumble	Spray Sequence
E38	No Recycle	The Tank with recycle water is empty	Warning at the End. Front soap dispenser Mach. only	Wash step
E39	Out of Soap	The Soap Supplies are running Out of Soap	For Information only	Wash step
E40	No Fill Rec	Fill failure	Full stop + request for Continue	While filling
E41	Service Due	Service Due Warning	For Information only Open door = reset	End cycle
E42	Connection	No Network Connection	For Information only	Data Transfer Networking
E43	Voltage Par	Wrong Voltage Range Selection	Make correct selection	Configuration menu
E44	Model Type	Incorrect selection of machine type	Make correct selection	Configuration menu
E45	Speed Sensor	Drum Rotation Sensor is not Working	Full stop + tumble	Before spin sequence
E56	Unload Speed	Drum speed too high during unloading process	Full stop	Unloading process (door opened)
E60	Inner Door Lock	Not locked inner door.	Full stop	Whole cycle
E61	Inner Door Calibration	Error during inner door calibration	Don´t start	Calibration procedure
E62	MXB Drum Fixation	Drum Fixation Failure	Full stop	Before start up or End cycle
E77	Heating Time Out	Heating on Hold Signal Failure	Full stop + tumble	Wash step
E80	SoapTimeOut	Incorrect signal for liquid detergent dispensing	Full stop + tumble	Whole cycle
E81	No Reheat	Heating Failure	Full stop + tumble	Wash Step (Traceability only)

continues...

Table 109

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Failure Message Overview				
Number	**Failure Message**	**Failure**	**Action**	**Fault Occurrence**
E82	No Refill	Refill failure	Full stop + request for Continue	Wash Step (Traceability only)
E83	Power Interruption	No successful wash cycle termination	Information that the wash cycle has to be repeated.	Abnormal Cycle Termination (Traceability only)
E85	RTC Reset Bat	Real Time Clock, No Battery or battery low power	For Information only.	End cycle (Traceability only)
E100	Weigh No Comm	Communication fault weighing system	Full Stop Tumble	(machines with weighing system only)
E101	Weigh Low	Weight machine is too low	Don't Start	(machines with weighing system only)
E102	Weigh High	Weight machine is too high	Don't Start	(machines with weighing system only)
E103	Weigh Balance	Weight is not balanced over 4 load cell's.	Don't Start	(machines with weighing system only)
E104	Weigh Overload	Weight on individual load cell exceeds maximum.	Full Stop Tumble	(machines with weighing system only)
E106	Calibration Error	Weighing system calibration error.	The Ultrabalance weighing system cannot be used.	During system calibration.
E107	Not Calibrated	The Ultrabalance weighing system was not calibrated before the first use.	The Ultrabalance weighing system cannot be used.	Before start.
E130	Wrong SDL2 Signal	Wrong switch signal.	Positioning system, Don't start.	Drum positioning procedure.
E131	System Signaling Locked Drum	Wrong switch signal.	Positioning system, Don't start.	Drum positioning procedure.
E132	Incorrect Locking Element Position	Wrong lock pin position.	Positioning system, Don't start.	Drum positioning procedure.
E133	Wrong SDL1 Signal	Wrong switch signal.	Positioning system, Don't start.	Drum positioning procedure.
E134	System Cannot Read a Washing Drum Position	Wrong proximity sensor signal.	Positioning system, don't finish.	Drum positioning procedure.
E135	Locking Element Persist at Unlock Position	Locking element cannot move or there is a wrong switch signal.	Positioning system, don't finish.	Drum positioning procedure.
E136	Wrong Drum Lock-On	Locking element is not at the final position.	Positioning system, don't lock the washing drum.	Drum positioning procedure.
E137	Wrong Signal From SDL3	Wrong switch signal.	Positioning system, don't start or finish.	Drum positioning procedure.

continues...

Table 109

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Failure Message Overview				
Number	**Failure Message**	**Failure**	**Action**	**Fault Occurrence**
E138	Unable to RESET Locking Element.	Failure of locking pin movement to unlock position.	Positioning system, don't start or finish.	Drum positioning procedure.
E139	Wrong Signal from SDL3 with an Inverter Safety Stop	Wrong switch signal or inverter state.	Positioning system, don't start or finish.	Drum positioning procedure.
E140	Unable to RESET the Drum or SDL3 Failure	Failure of locking element movement to "unlocked" position or wrong switch signal.	Positioning system, don't start or finish.	Drum positioning procedure.
E141	Locking Element Persists at Locked Position.	Locking element cannot move out from "locked" position.	Positioning system, don't finish.	Drum positioning procedure.
E300-E353	Mits Err	Specific Mitsubishi Inverter Alarm	Full stop + safety time	Whole cycle
E500-E526	Memory Err	Memory Error	Full stop + safety time	Any time
E550	TRACEABILITY Write	Internal memory Error data for traceability	For Information only	Traceability function, whole cycle
E551	TRACEABILITY Full	Internal Traceability memory is full	For Information only	Traceability function, whole cycle
E552	Store DAQ Full Err	DAQ Traceability Memory is full	For Information only	Traceability function, whole cycle
E553	Store DAQ>PC	DAQ Traceability Memory is almost full	For Information only	Traceability function, whole cycle
E560-E563	USB Errors	Errors in communication with USB flash disk	For Information only	Only in Advanced menu Data Export/Import
E600-E628	Softw. Err	Software Error	Full stop + safety time	Any time

Table 109

Service Menu

In the Service menu you have some extra utilities:

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

How to Get into the Service Menu

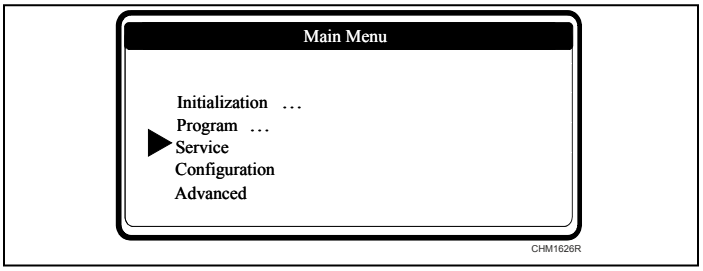


Figure 32

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

- SELECT CYCLE is displayed.

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- Turn the washing machine to the setup mode. Refer to *How to Get into the Setup Mode*.
- The Main menu is now available.
- Press the ARROW DOWN button to select the SERVICE menu.
- Press the ENTER button to make your selection.
- Now you will see the Service Menu Screen.

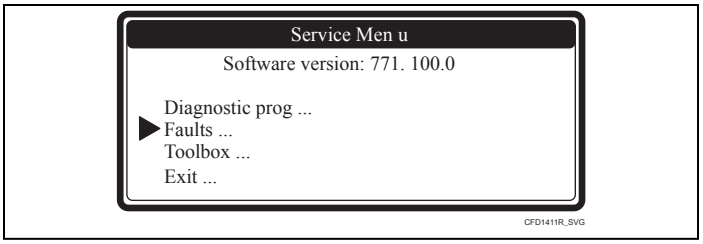


Figure 33

The software version will be displayed in the following format: "Software XXX Version: 771.100.0."

Faults Menu (Service Faults)

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

Table 110

Toolbox Menu

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

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Toolbox Menu	
Display Message	**Information**
View Input States ? **1 Input 1 On** **…** **20 Input 20 Off**	The Input states for Input 1, …, Input 20. The exact function of the inputs can be found on the electrical drawing of the washing machine programmer. • If the Input state is Off, the Input signal is low. • If the input state is On, the Input signal is high.
Imbalance Statistics … **Imbalance …** **1 ...0.5 0** **...** **31 > 15 0** **Current …** **1 I0 0** **...** **4 I3 0**	Diagnostic information on imbalance of the machine.
Inverter Power Off	By this function it‘s possible to switch on the power of the inverter if a technical intervention is needed. **NOTE: Special care has been taken at the initialization of the parameters of the frequency inverter. The manufacturer is not responsible for the wrong behavior of the washing machine if the owner has installed new parameter settings in the inverter that do not correspond with the original settings at the factory.**
Brake On	**Hygienic Barrier Machines only** In case that a servicing intervention is needed (replacement of belt), this function can deactivate the motor break.
Door System Calibration Off	**Hygienic Barrier Machines Only** Calibration procedure is used to calibrate drum door check system. Calibration process: 1. Set Door System Calibration to ON. 2. Return to Select Cycle step. 3. Close correctly drum door and machine door. 4. Start wash program 1. 5. Calibration will takes about 15 seconds and then message “Door System Calibration OK” is shown.
Reset Service Counts No	Once the washing machine has reached the total number of wash cycles like set at the "Service Interval" a warning is given at the end of each cycle until the Cycle Counter has been reset.

continues...

Table 111

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Toolbox Menu	
Display Message	**Information**
RTC Time XX:YY:ZZ	The Time value of the Real Time Clock. XX : Hours, YY : Minutes, ZZ : Seconds
RTC Date AA:BB:CC	The Date value of the Real Time Clock. AA : Day, BB : Month, CC : Year
Adjust Clock … Hour XX Minutes YY Day AA Month BB Year CC	Set the correct Date and Time for the RTC.
Exit	Return to Service Menu

Table 111

Diagnostic Program

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

How to Get into the Diagnostic Menu

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

- Select Cycle is displayed.
- Turn the washing machine to the setup mode. Refer to section *How to Get into the Setup Mode* .
- The Main menu is now available.
- Press the ARROW DOWN button to select the Service menu.
- Select the Diagnostic Program menu at the Service menu.

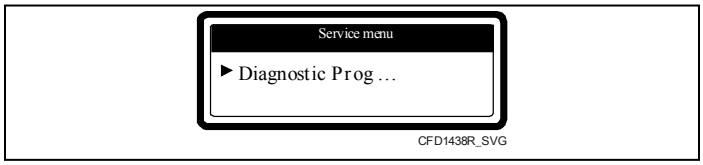


Figure 34

- Select diagnostic program.

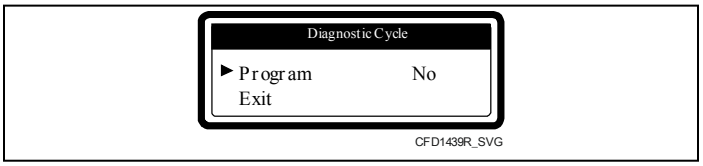


Figure 35

- Press START if you want to start the diagnostic program.

Test Sequence

Diagnostic Test Sequence for Machines with Top Soap Dispenser

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

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

continues...

Table 112

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Diagnostic Test Sequence for Machines with Top Soap Dispenser		
Test	**Information**	**Explanation**
	Unload	End of the Diagnostic Cycle
* The second drain valve will be opened if a second drain valve has been selected in the Configuration menu.		
** No number 2 is displayed at the sensor test as this takes only a fraction of a second.		
If ++ ++ is displayed at the motor test sequence, then you can Advance (Press START) the test Sequence.		

Table 112

Diagnostic Test Sequence for Machines with Front Soap Dispenser

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

3

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

continues...

Table 113

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Diagnostic Test Sequence for Machines with Front Soap Dispenser			
Test (2)	**Test (3)**	**Information**	**Explanation**
30	32	Supply D	Supply D is activated for 30 seconds
32	34	Supply E	Supply E is activated for 30 seconds
50	50	Tumble	The tumble sequence
		Unload	End of the Diagnostic Cycle
* The second drain valve will be opened if the second drain valve has been selected in the Configuration menu.			
** No number 2 is displayed at the sensor test as this takes only a fraction of a second.			
If ++ ++ is displayed at the motor test sequence, then you can Advance (Press START) the test Sequence.			

Table 113

Basic Diagnostic Wash Program

Error Messages

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

Basic Diagnostic Wash Program											
	Sequence		**Supply**		**Inlet**		**Temperature**	**Level**	**Wash Action**	**Time**	**R.P.M.**
	Top	**Front**	**Top**	**Front**	**Top**	**Front**					
Step 1	Wash	Wash	B	2=30 seconds	3-4-5	2-3-6-8	104°F [40°C]	NL	A=12 seconds R=3 seconds	6 minutes	W
	Drain	Drain	-	-	-	-	-	-	-	30 seconds	D
Step 2	Rinse 1	Rinse 1	-	-	2-5-6	1-2-7	-	NH	A=12 seconds R=3 seconds	1.5 minutes	W
	Spin	Spin	-	-	-	-	-	-	-	1 minute	L
Step 3	Final Rinse	Rinse 2	C	3=30 seconds	1(+6)	4-7	-	NL	A=12 seconds R=3 seconds	2 minutes	W
	Spin	Spin	-	-	-	-	-	-	-	4.5 minutes	H
	Slowdown			-	-	-	-	-	-	1 minute	-
	Tumble			-	-	-	-	-	A=12 seconds R=3 seconds	30 seconds	W

Table 114

Troubleshooting

External Communication Problems

The machine communicates with the PC (Traceability Software) via the RS485 line. If the external communication is not

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working, check the connection between the PC and machine. Check also if you have selected the right machine communication address.

Error Message Descriptions

Failure 2: Drain Failure

Failure 2 occurs when the electronic timer detects that the water is not drained after 5 minutes in a Drain or Spin Sequence. The failure message is displayed at the end of the cycle.

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

Table 115

Failure 3: Safety Switch Activated

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

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

Table 116

Failure 4: The Linen is Not Correctly Distributed in the Stage when the Machine Starts Up the Spinning Sequence

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

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

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

Table 117

Failure 5: Safety Switch Activated at High Revolutions

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

Diagnosing Failure 5	
1. Check the position of the safety switch.	If the safety switch is not correctly mounted, install the out of balance switch properly
2. Check the springs and the other mechanical parts that fix the drum.	If you see a broken mechanical part: replace the broken part
3. Check the wiring if there is a bad connection.	If there is a bad connection: repair the wiring
4. Check that the washing machine is installed correctly and stable.	Adjust the supports at the bottom of the washing machine.

Table 118

Failure 6: Door Lock Closing Switch Failure

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

Diagnosing Failure 6	
1. Check the good functioning of the door switch at the inputs menu.	If the input is not functional replace the wash computer.
2. Check the continuity of the wiring.	If the wiring is not continuous: repair the wiring
3. Check the well functioning of the door switch. The door switch is a normal open contact.	If the door switch is broken or malfunctions replace the door switch.
4. Check drum rotation direction.	The drum must start rotating upwards after pressing the Start button, except for 36 and 50 kg models with Pullman drum, where it must start rotating downwards.

Table 119

Failure 7: Failure of Door Lock Closing

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

Diagnosing Failure 7	
1. Check the door lock wiring.	If the wiring is not continuous: repair the wiring
2. Check (in the programmer device) the correct function of door locking and unlocking outputs and also of the input into the switch for locking the door.	Replace the switch or the programmer device - based on the result of output/input inspection above.

Table 120

Failure 8: Door Lock Closing Failure in the Beginning of Cycle

The washing machine will not start a new process when the door is not locked correctly after pressing the Start button. Failure message 8 will be generated each time the door locking sequence fails.

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Diagnosing Failure 8	
1. Check door handle for damage traces and centering against door lock.	If handle is damaged, replace hanle. If not good centered, center door against door lock.
2. Check if the input connector DL (door lock) is connected.	If the input connector DL (door lock) is not connected : connect connector DL.
3. Check the correct function of the door lock closing switch.	If the door lock closing switch is broken or doesn't function correctly, replace it.
4. Check the door lock wiring.	If the wiring is not continuous: repair the wiring
5. Check (in the programmer device) the correct function of door locking and unlocking outputs and also of the input into the switch for locking the door.	Replace the switch or the programmer device - based on the result of output/input inspection above.
6. Check correct connection of flat cable between CPU and IO board.	If there is visible mistake in connection then repair it or replace flat cable.

Table 121

Failure 9: Failure of Door Lock Opening at the End of Cycle

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

Diagnosing Failure 9	
1. Check the functioning of the door lock closing switch.	If the door lock closing switch is broken or doesn't function correctly, replace it.
2. Check the door lock wiring.	If the wiring is not continuous: repair the wiring
3. Check (in the programmer device) the correct function of door locking and unlocking outputs and also of the input into the switch for locking the door.	Replace the switch or the programmer device - based on the result of output/input inspection above.

Table 122

Failure 11: Fill Failure

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

WARNING

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

C078

Diagnosing Failure 11	
1. Check if the programmed maximum fill time in the Initialization menu is acceptable.	If the water flow is very slow, increase the value for the maximum fill time. The default value is 10 minutes.
2. Check if the external water valves are open.	If the water valves are closed: open the water inlet valves.
3. Check if the water inlet valves are not blocked by dirt.	If the water inlet valves are blocked by dirt: clean the water inlet valves or replace the water inlet valves.
4. Check the coil of the water inlet valves.	If the coil of the water inlet valve is electric open: replace the coil or the complete water inlet valve.
5. Check the drain valve.	If the drain valve is defective: replace the drain valve.
6. Check if the rubber hose (for measuring the water level) is well mounted on the electronic level sensor and on the drain valve.	If the hose is not well mounted: install the rubber hose properly.
7. Check if the hose on the electronic sensor is air tight.	If the air hose is not air tight: replace the air tube.
8. Check if the hose doesn’t contain water. (siphon)	If the air tube contains water: remove the water and fix the hose so that it doesn’t work as a siphon.
9. Check the continuity of the wiring.	If the wiring is not continuous: repair the wiring.
10. Check the output relay that powers inlet valves and the drain valve.	If the relay receives a command signal but is not closed, replace the wash computer.

Table 123

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Failure 12: Overfill Failure

If the target water level is X units above the target level then failure message 12 will be displayed.

The fault message will not be generated when the user is advancing from a sequence with a high water level to a sequence with a low water level. X= "Maximum level Overfill", a value that can be programmed at the Initialization menu.

Diagnosing Failure 12	
1. Check if the water inlet valves are broken.	If the water inlet valves are broken: clean or replace the water inlet valve diaphragms.
2. Check if the water pressure is too high.	Lower the water pressure.
3. Check the output relay that powers the inlet valve.	If the relay stays closed and the relay is broken, replace the wash computer.

Table 124

In Case of Steam Heating

If the steam has not enough heating power (too low temperature), the machine will be filled with too much water at the heating part. This will result in an increased water, energy and supply consumption.

It's strongly recommended that the heating installation works with enough heating power.

A simple solution can also be to reduce the programmed target water level. As less steam will be required, the normal water level should be reached. In the initialization menu it is also possible to adjust the alarm level to avoid the error message, though this is not recommended.

Failure 13: Heating Failure

If the heater elements are not functioning : message 13 will be displayed. The message is generated when the temperature is not raising with 37.4°F [3°C] in 10 minutes time.

Diagnosing Failure 13	
1. Check if the heating contactor is activated.	If the heating contactor is not activated: repair the wiring or replace the contactor.
2. Check if the heating elements are heating.	If the heating elements are not heating: Repair the wiring or replace the defective heater elements.

continues...

Table 125

Diagnosing Failure 13	
3. Check if the temperature sensor is functioning.	If the temperature sensor is defective: replace the temperature sensor.
4. Check the output relay that powers the heating contactor.	If the relay is broken, replace the wash computer.

Table 125

Failure 14: Heating Time Failure

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

x = The programmed Maximum heating time in the Initialization Menu.

Diagnosing Failure 14	
1. Check if the programmed Maximum Heating time in the Initialization menu is acceptable.	If the machine has a small heating capacity, increase the value of the Maximum heating time. The default is 60 seconds (for machines with big heating capacity).
2. Check if the heating resistors are heating.	If the heating resistors are not heating: Repair the wiring or replace the defective heater elements.
3. Check the water temperature.	If the hot water supply temperature is too low: increase the temperature of the hot water.
4. Check if the temperature sensor is functioning.	If the temperature sensor is defective: replace the temperature sensor.

Table 126

Failure 15: Too Hot

When the water temperature is 59°F [15°C] above the target temperature : Message 15 will be displayed.

For evaluation of the problem, you can follow the water temperature of the bath on the display of the washing machine by pressing the Service Button on the keypad.

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Diagnosing Failure 15	
1. Check if correct water inlet valves have been programmed. If only hot water inlet valves have been programmed, and if the hot water supply has a temperature value above the programmed wash sequence value then the temperature of the wash bath will be too high.	Choose the correct water inlet valves for the wash sequence when you create or adjust the parameters of the wash program. Don't program only hot water inlet valves but also cold ones!
2. Check if the correct water inlet valves are Functional. If the cold water inlet valves are not functional or if the main cold water supply is not available (and only hot water inlet valves are open), and if the hot water supply has a temperature value above the programmed wash sequence value then the temperature of the wash bath will be too high.	Refer to *Failure 11: Fill Failure*
3. Check the water temperature.	If the temperature of the supplied hot water is too high: decrease the temperature of the hot water.
4. Check if the temperature sensor is functioning.	If the temperature sensor is defective: replace the temperature sensor.
5. Check if the heating contactor stays closed. (check voltage to contactor coil.)	If the heating contactor stays closed : Replace the heating contactor.
6. Check the output relay that powers the heating contactor.	If the relay stays closed and the relay is broken, replace the power board.
7. Check the output relay that powers the heating contactor.	If the relay is not broken, but receives a not allowed signal from the wash computer, replace the wash computer.

Table 127

Failure 18: Failure of Door Lock Closing

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

Diagnosing Failure 18	
1. Check the door lock wiring.	If the wiring is not continuous: repair the wiring
2. Check (in the programmer device) the correct function of door locking and unlocking outputs and also of the input into the switch for locking the door.	Replace the switch or the programmer device - based on the result of output/input inspection above.

Table 128

NOTE: Valid for the door lock on barrier washers with Hyg. Tune.

Failure 19: Door Lock Closing Failure in the Beginning of Cycle

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

Diagnosing Failure 19	
1. Check door handle for damage traces and centering against door lock.	If handle is damaged, replace hanle. If not good centered, center door against door lock.
2. Check if the input connector DL (door lock) is connected.	If the input connector DL (door lock) is not connected : connect connector DL.
3. Check the correct function of the door lock closing switch.	If the door lock closing switch is broken or doesn't function correctly, replace it.
4. Check the door lock wiring.	If the wiring is not continuous: repair the wiring
5. Check (in the programmer device) the correct function of door locking and unlocking outputs and also of the input into the switch for locking the door.	Replace the switch or the programmer device - based on the result of output/input inspection above.

Table 129

NOTE: Valid for the door lock on barrier washers with Hyg. Tune.

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Failure 21: Overflow Failure

When the water level is raising above the hole of the overflow tube: message 21 will be displayed.

Diagnosing Failure 21	
1. Check that the overflow hole and tube isn't blocked.	If the overflow tube is blocked: repair the tube.
2. Check that the drain tube isn't blocked.	If the drain tube is blocked: repair the drain tube.
3. Check the water inlet valves.	If the water inlet valves are broken: replace the water inlet valves.
4. Check the output relay that powers the water inlet valve.	If the relay stays closed and the relay is broken, replace the wash computer.

Table 130

Failure 24: Defective Level Sensor

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

Diagnosing Failure 24	
1. Check the level sensor visually.	If you see some damage: replace the wash computer.
2. If the fault is persistent.	Replace the wash computer. (Be sure there is no drain problem)

Table 131

Failure 25: Defective Temperature Sensor

When the temperature sensor is broken then fault 25 will be displayed. The sensor is checked shortly after the start of cycle and then during whole wash cycle progression. The error message can only be erased when the temperature drops under 131°F [55°C] .

Diagnosing Failure 25	
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.

continues...

Table 132

Diagnosing Failure 25	
3. Measure the resistance of the sensor.	If the resistance is not OK: replace the temperature sensor.
4. Check if the earth wire is at the middle position of the connector.	If the earth wire is not at the middle position: put the earth wire in the middle position of connector T.
5. Check the PCB board visually.	If you see some damage : replace the wash computer.
6. If the fault is persistent.	Replace the wash computer. Be sure that the problem is related to the PCB board and not to a defective temperature sensor.

Table 132

Failure 26: Undefined Mitsubishi Frequency Inverter Error Code

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

Failure 27: Communication Fault Inverter

This fault will only occur when there is no communication between the wash computer and the inverter. The wash computer is sending requests to the inverter, and the inverter is sending answers to the wash computer. If the wash computer is not receiving the answers within 5 seconds then fault 27 will be displayed. On machines with a backup UPS this error will also be shown in case of power supply interruption.

Diagnosing Failure 27	
1. For a new inverter or wash computer : Check if the right machine type and Washing machine power supply have been selected.	When the Inverter parameters are loaded at the Configuration menu, make sure that you have selected the right machine type and washing machine power supply.
2. Check if the door is closed and locked.	If the door is not closed then the inverter can not be powered. Close the door. If the door lock is broken, repair the door lock system.

continues...

Table 133

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Diagnosing Failure 27	
3. Check if the inverter is energized. If the inverter power LED is not illuminated, measure if there is supply voltage at the inverter input terminals.	Repair the power supply. If the supply voltage is OK and the power LED is not illuminated, replace the inverter.
4. Check if the fuses are still operational.	If the fuses are blown up : replace the fuses.
5. Check if the safety inverter contactor is activated.	If the safety contactor is broken: replace the contactor.
6. Check if the connectors on both sides of the communication cable are still connected.	Connect the connectors on the wash computer and the inverter.
7. Check the wiring for continuity.	Repair the wiring.
8. Check if the output relays that activates the safety inverter contactor is functional.	If the relay is broken, replace the wash computer.
9. On machines with a backup UPS, the cause can be a power supply interruption.	Restore the power supply and restart the machine by means of the emergency stop button on the control panel.

Table 133

Failure 28: THT (Mitsubishi) Time Out

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

Diagnosing Failure 28	
1. Check if the correct machine type is selected at the Configuration Menu.	If the wrong machine type is selected, enter the right machine type.
2. Check if the dedicated inverter parameters have been loaded by the wash computer.	Load the correct Inverter parameters.
3. Check if the power supply is sufficient high and stable during extraction with load.	Repair the power supply.
4. Check if the drum rotates normally by hand.	Repair / clean what is necessary.

continues...

Table 134

Diagnosing Failure 28	
5. Check if the fault is persistent.	If the fault is persistent, contact the manufacturer.

Table 134

Failure 29: OV3 (Mitsubishi) Time Out

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

Diagnosing Failure 29	
1. Check if the correct machine type is selected at the Configuration menu.	If the wrong machine type is selected, enter the right machine type.
2. Check if the dedicated inverter parameters have been loaded by the wash computer.	Load the correct Inverter parameters.
3. Check if there was a high unbalance during extraction, which can be caused by putting only half loads in the machine.	Put always a full load in the machine drum. Do not put other material than textile linen (fabrics) in the machine.
4. Check if the fault is persistent.	If the fault is persistent, contact the manufacturer.

Table 135

Failure 31: Initialization Fault Inverter

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

NOTE: It is not recommended to use the washing machine as the inverter will function with the wrong parameters settings.

Diagnosing Failure 31	
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.

continues...

Table 136

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Diagnosing Failure 31	
2. Check if the inverter is energized.	If the inverter is not energized, check the power to the inverter. Refer to *Failure 27: Communication Fault Inverter*.
3. Write the parameters once more into the inverter.	If the fault is persistent, contact the manufacturer.

Table 136

Failure 32: Verification Fault Inverter

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

Diagnosing Failure 32	
1. Check if the correct machine type is selected in the Configuration Menu.	If the wrong machine type is selected, enter the right machine type.
2. Check if the door is closed and locked.	If the door is not closed, close the door. If the door is not locked, repair the door lock system.
3. Check if the inverter is energized.	If the inverter is not energized, check the power to the inverter. Refer to *Failure 27: Communication Fault Inverter*.
4. Write the parameters once more into the inverter.	If the fault is persistent, contact the manufacturer.

Table 137

Failure 35: Wrong Software Version

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

WARNING

All the custom settings will be erased in the wash computer by loading the factory settings.

C080

Failure 36: The Linen is Not Correctly Distributed in the Stage Before the Start Up of the Spinning Sequence

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

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

Diagnosing Failure 36	
1. Unbalance may be caused by inserting only half the linen load into the machine.	Always fill in the machine with a full load of linen. Do not insert any other materials than textile materials (fabrics).

Table 138

Failure 37: Drain Failure at the Spray Sequence

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

Diagnosing Failure 37	
1. Check the drain tube of the washing machine.	If the drain tube is blocked: repair the drain tube.
2. Check the drain valve.	If the drain valve is defective: replace the drain valve.
3. Check the wiring: When the drain valve is switched Off, the drain valve should be open. (normal open)	If the wiring is damaged: repair the wiring.

Table 139

Failure 38: No Recycle Water

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

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

Front soap dispenser machines only.

Diagnosing Failure 38	
1. Check the water level from the water recycle tank.	Add water to the water Recycle tank

Table 140

Failure 39: Empty Soap Supply Box

Failure 39 occurs when the electronic timer detects that the Soap Reservoir is empty.

To avoid that No Liquid Soap is added at the wash process, the operator gets a warning when a Liquid Soap Supply Reservoir is almost empty.

Diagnosing Failure 39	
1. Check if the Liquid Soap Supply is empty.	Add Soap to the Liquid Soap Supply System.

Table 141

Failure 40: Fill Failure Recycle

Failure 40 occurs when the water level has not reached its target level in x minutes. x = Maximum fill time and external input "water recycle tank" is activated.

Diagnosing Failure 40	
1. Check if the programmed maximum fill time in the Initialization menu is acceptable.	If the water flow is very slow, increase the value for the maximum fill time. The default value is 10 minutes.
2. Check if the external water valves are open.	If the water valves are closed: open the water inlet valves.
3. Check if the water inlet valves are not blocked by dirt.	If the water inlet valves are blocked by dirt: clean the water inlet valves or replace the water inlet valves.
4. Check the coil of the water inlet valves.	If the coil of the water inlet valve is electric open: replace the coil or the complete water inlet valve.
5. Check the drain valve.	If the drain valve is defective: replace the drain valve.

continues...

Table 142

Diagnosing Failure 40	
6. Check if the rubber hose (for measuring the water level) is well mounted on the electronic level sensor and on the drain valve.	If the hose is not well mounted: install the rubber hose properly.
7. Check if the hose on the electronic sensor is air tight.	If the air hose is not air tight: replace the air tube.
8. Check if the hose doesn't contain water. (siphon)	If the air tube contains water: remove the water and fix the hose so that it doesn't work as a siphon.
9. Check the continuity of the wiring.	If the wiring is not continuous: repair the wiring.
10. Check the output relay that powers inlet valves and the drain valve.	If the relay receives a command signal but is not closed, replace the wash computer.
11. Check if the signal from recycle system operates correctly.	Repair signal from recycle system.
12. Check if the wiring of the input signal "Water recycle tank" is not damaged.	If the wiring is damaged: repair the wiring.
13. Check the wash computer. (Inputs can be checked one by one in Service Menu).	If the input of the wash computer is not functional, replace the wash computer.

Table 142

Failure 41: Service Due Warning

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

Diagnosing Failure 41	
1. Check the cycle counter in the Service Information.	You can reset the cycle counter in the Service Menu.

Table 143

Failure 42: No Network Connection

Failure 42 occurs when there is No Network Connection available. For more information about networking, refer to Traceability Software Manual.

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Diagnosing Failure 42	
1. Check the network cable.	If the network cable is broken, replace the network cable.
2. Check the USB-RS485 converter.	If the converter is out of order, replace it.

Table 144

Failure 43: Wrong Voltage Range Selection

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

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

Diagnosing Failure 43	
1. Check the Machine Identification plate at the back of the machine.	Select the same Voltage range in the Configuration menu as on the Identification plate of your washing machine. Menu Item C:Supply Voltage

Table 145

Failure 44: Incorect Selection of Machine Type

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

Diagnosing Failure 44	
1. Check the machine name plate placed on the back of the machine.	Select the right machine type in the Configuration Menu.

Table 146

Failure 45: Drum Rotation Sensor is not Working

Failure 45 is displayed when the programmer device is not receiving information on drum rotation from the rotation speed sensor. The rotation speed sensor check is performed during the wash cycle, before the spinning sequence.

Diagnosing Failure 45	
1. Check whether the drum rotation sensor is installed at the drum pulley, correctly set and connected to the programmer.	Perform correct installation of the drum rotation sensor.
2. Check correct function of the sensor. If a metal object is brought close to the sensor, an indicator light situated on the sensor must light up.	If the sensor is not working correctly, replace it.
3. In Service menu, check correct function of the rotation sensor when a metal object is brought near it.	In case that the programmer device does not respond to the signal sent from the rotation sensor, replace the programmer device.

Table 147

Failure 56: Unload Speed

Machines with tilting system only: Speed of drum rotation during unloading process (manually controlled with remote control) exceed safety value.

Diagnosing Failure 56	
1. Check functionality of speed sensor.	Refer to *Failure 45: Drum Rotation Sensor is not Working.*
2. Reload inverter parameters.	

Table 148

Failure 60: Inner Door Lock

Only high spin hygienic barrier machines 18-24-28 kg / 40-55-70 lb / 180-240-280 L

Error is generated if during wash cycle door check system detects that drum door is not correctly locked.

Diagnosing Failure 60	
1. Check position of drum lock lever.	Set lock lever in lock position .

continues...

Table 149

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Diagnosing Failure 60	
2. Calibrate drum door check system.	Set calibration procedure in Service menu / Toolbox / Door System Calibration to On. Leave the Menu. Select wash program 1 and press the "START" button. Calibration procedure will start.
3. Check mechanical functionality of drum door.	Replace drum door.
4. Check drum rotation direction.	The drum must start rotating upwards after pressing the Start button, except for 36 and 50 kg models with Pullman drum, where it must start rotating downwards.

Table 149

Failure 61: Inner Door Calibration

Only high spin hygienic barrier machines 18-24-28 kg / 40-55-70 lb / 180-240-280 L

Error is generated if calibration procedure of drum door is not functional.

Diagnosing Failure 61	
1. Check position of drum lock lever.	Check the correct position of the lock lever of the inner door (must be locked properly), or check that the door itself is locked properly. Check correct interconnection of the IDLC module and the Programmer, IDLC module and the sensor which is mounted from the top in the middle of the outer drum of the washing machine. Switch off the washing machine. While watching the red LED diode on the IDLC module, switch on the washing machine again. The diode should come on for a short time. If the diode fails to come on, the IDLC module is faulty and must be replaced with a new one and it is necessary to carry out calibration again. Loosen the screws fixing the base of the IDLC module sensor from the top on the outer drum and move the base 1mm towards the IDLC module. Fix it and calibrate again. If calibration is not successful, the IDLC module sensor is faulty and must be replaced.

Table 150

Failure 62: MXB Drum Fixation

One of the switches SDL1, SDL2, SDL3, or SDL4 is not in the right state if the blocking mechanism for the drum is blocked or unblocked. This could be a mechanical issue, a broken switch, or a broken wire.

Diagnosing Failure 62	
1. Check the frequency inverter.	If the frequency inverter does not turn on, the failure is on the frequency inverter side.

continues...

Table 151

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Diagnosing Failure 62	
2. Check the DC receiver.	The DC receiver is a power source for the blocking system. Check if the output is correct (12V DC) when the green LED is ON.
3. Check the signal.	Check the signal to the DC electromotor when the green LED is ON. Check the signal from all switches SDL1, SDL2, SDL3, and SDL4.
4. Check the switches.	If the switch is broken, replace it.
5. Check the wiring.	If the wiring is damaged, repair it.
6. Check the contact surfaces.	If the blocking segment is jammed during unblocking, check the contact surfaces of the blocking segment.
7. Check the DC power supply to DC electric motor.	If the blocking segment is jammed during unblocking, check the power supply of the DC electromotor during operation. There must still be 12V. If there is less electrical voltage, replace the DC receiver.

Table 151

Failure 77: Time for Heating Blocking is Out

If external wait function in Initialization menu is set to Heating and external blocking signal stays high for more then 1 hour then error 77 is generated.

Diagnosing Failure 77	
1. Check if the external blocking system operates correctly.	Repair external blocking System in case of failure.
2. Check if the wiring of the input signal "On Hold" is not damaged.	If the wiring is damaged: repair the wiring.
3. Check the wash computer. (Inputs can be checked one by one in the Service Menu).	If the input of the wash computer is not functional, replace the wash computer.

Table 152

Failure 80: Time for Dispensing Liquid Detergents is Out

Failure 80 occurs when the On Hold Signal of the Liquid Supply Central Dispensing System stays high for more then 1 hour. At Input 16 of the wash computer, the Liquid Supply Central Dispensing System sends a "High" signal. This makes that the washing machine wait (at the Wash Sequence) to add Liquid Supply. It will until the Liquid Supply Central Dispensing System has pumped its liquid supplies inside the washing machine. When the On Hold signal is "LOW" the wash program is NOT put On Hold.

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

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

Diagnosing Failure 80	
1. Check if the Central Soap Dispensing System operates correctly.	Repair Liquid Supply Central Dispensing System in case of failure.
2. Check if the wiring of the input signal "On Hold" is not damaged.	If the wiring is damaged: repair the wiring.
3. Check the wash computer. (Inputs can be checked one by one in the Service menu)	If the input of the wash computer is not functional, replace the wash computer.

Table 153

Failure 81: No Reheat

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

Diagnosing Failure 81

Refer to *Table 125* and *Table 126*.

Failure 82: No Refill

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

Diagnosing Failure 82

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Refer to *Table 142.*

Failure 83: Cycle Fail

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

Diagnosing Failure 83

Refer to Extra Error message that shows the cause of the failure.

Failure 85: RTC Low Battery

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

Diagnosing Failure 85

Replace the CPU board.

Failure 95: Watch Dog

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

Failure 100: Weigh NOCOMM

Machines with weighing system only. Failure 100 occurs when the communication between wash computer and signal conditioner weighing system (amplifier module) is interrupted. At the status Screen, you can see if the communication with the weighing system is operational : Yes.

(Weigh NoComm : No communication with weighing system)

Diagnosing Failure 100	
1. Check if the power supply of the signal conditioner weighing system is available.	Repair 24 Vdc power supply.
2. Check if the connectors on both sides of the communication cable are still connected.	Connect the connectors on the wash computer and Signal conditioner.
3. Check the connection at the RS232 - TTL converter.	Connect the connectors at the RS232-TTL converter.
4. Check the wiring for continuity.	Repair the wiring.

Table 154

Failure 101: Weigh LOW

Machines with weighing system only. Failure 101 occurs when the measured weight is much smaller then in normal operation. Check the load cell Weighing Calibration screen (Advanced Menu) to obtain more information about the functionality of each individual load cell. Verify if the value "Expected Free Weight XXX" in the Weighing Menu has still the correct value. This value must correspond with the real total weight of the washing machine. If the actual measured weight value gets out of range then the Diagnostic Error 101 will appear.

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

Diagnosing Failure 101	
1. Check the load cell wiring.	Repair the wiring.
2. Check the values for each individual load cell.	Adjust the mounting of the load cell.
3. Check if the signal conditioner (amplifier) module is still operational.	Replace the signal conditioner (amplifier) module.

Table 155

Failure 102: Weigh HIGH

Machines with weighing system only. Failure 102 occurs when the measured weight is much higher then in normal operation. Check the load cell Weighing Calibration screen (Advanced Menu) to obtain more information about the functionality of each individual load cell. Verify if the value "Expected Free Weight XXX" in the Weighing Menu has still the correct value. This value must correspond with the real total weight of the washing machine. If the actual measured weight value gets out of range then the Diagnostic Error 102 will appear.

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

Diagnosing Failure 102	
1. Check the load cell wiring.	Repair the wiring.
2. Check the values for each individual load cell.	Adjust the mounting of the load cell.
3. Check if the signal conditioner (amplifier) module is still operational.	Replace the signal conditioner (amplifier) module.

Table 156

Failure 103: Weigh Balance

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

Cabinet Freestanding Machines 33-40-55 kg / 75-90-125 lb / 335-400-520L: load on each load cell must be in range 20 - 30%.

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Cabinet Freestanding Machines 18-24-28 kg / 40-55-70 lb / 180-240-280L: load on each load cell must be in range 10 - 40%.

Hygienic Barrier Machines 18-24 kg / 40-55 lb / 180-240 L: load on each load cell must be in range 10 - 40%.

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

Diagnosing Failure 103	
1. Check the load cell wiring.	Repair the wiring.
2. Check the weight values for each individual load Cell.	Adjust the mounting of the load cell so that there is again optimal balance.
3. Check if the signal conditioner (amplifier) module is still operational.	Replace the signal conditioner (amplifier) module.

Table 157

Failure 104: Weigh Overload

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

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

(Weigh Overload: Dynamic Overload Weighing System)

Diagnosing Failure 104	
1. Check for mechanical problems.	Repair mechanical problems on the washing machine.
2. Check the load cell wiring.	Repair the wiring.
3. Check the weight values for each individual load cell.	Adjust the mounting of the load cell.
4. Check if the signal conditioner (amplifier) module is still operational.	Replace the signal conditioner (amplifier) module.

Table 158

Failure 106: Calibration Error

Failure 106 occurs, when the calibration result does not correspond to the pre-set intervals. A different value is required for each machine model and power supply type.

Diagnosing Failure 106	
1. Check the serial plate - located at the back of the machine.	Check, whether the machine model selected in the configuration menu corresponds to the machine model specified on the serial plate. Make sure that the supply voltage selected in the configuration menu is the same as the supply voltage specified on the serial plate.
2. The machine must be empty during the calibration process.	Before you start calibration, remove everything from the drum.
3. Do not carry out calibration immediately after a wash cycle has finished.	Carry out calibration at least 2 hours after the end of the last wash cycle.

Table 159

Failure 107: Not Calibrated

Failure 107 occurs when the machine is not calibrated. Carry out machine calibration in the Advanced Menu - section Weighing. Carry out calibration at least 2 hours after the end of the last wash cycle. The machine drum must be completely empty during the calibration process. The calibration process can take up to 10 minutes. If the machine is not calibrated, the weighing function is disabled.

Failure 130-141: MXB Drum Fixation

One of the parts of the positioning system does not work properly.

Diagnosing Failure 130	
1. Check the SDL2 switch	Microswitch SDL2 is signaling locked drum but washing drum has been unlocked.
2. Replace the SDL2 switch	If SDL2 switch doesn't work properly, replace SDL2. After replacement, check the positioning system.

Table 160

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Diagnosing Failure 131	
1. Check the SDL1 and SDL2 switches	Microswitch SDL1 is signaling unlocked drum but microswitch SDL2 is signaling a locked one.

Table 161

Diagnosing Failure 132	
Reset locking element	Automatically set blocking element to unlocked state when it is in incorrect position.

Table 162

Diagnosing Failure 133	
1. Check SDL1 or wiring from inverter to SDL1 switch	SDL1 blocks inverter operation with safety stop function.

Table 163

Diagnosing Failure 134	
1. Check proximity sensor SD6 or wiring from proximity sensor to electronic board	System cannot read the drum position.
2. Check distance between SD6 proximity sensor and positioning plate mounted on pulley	Proximity sensor has a maximum distance of 2 mm. Ideal distance between sensor and positioning plate is 1 mm. Set sensor to correct position (1 mm gap).

Table 164

Diagnosing Failure 135	
1. Check locking element	Check locking pin. The locking pin could be stuck in the unlock position.
2. Check the SDL2 and SDL3 switches	SDL3 and SDL2 could be sending incorrect signals (SDL3: unlocked position; SDL2: locked position).
3. Check DC electric motor	Check wiring and power supply to DC motor. There must be 12V DC power.

continues...

Table 165

Diagnosing Failure 135	
4. Check wiring	Check that all signals and contacts are correct and that the power supply of the DC motor is correct.

Table 165

Diagnosing Failure 136	
1. Check position of locking element	Locking element must be in the end position. Check whether the locking element is stuck in the incorrect position. Turn off the machine and try to move it with the pulley of the washing drum. Locking element must move automatically to locked position (SDL2 = 0).
2. Check SDL2 switch	If SDL2 switch doesn't work properly, replace SDL2. After replacement, check the positioning system.
3. Check power supply to DC electric motor	If the locking element cannot move to cutout in locking disc, check power supply to DC electric motor. There must be 12V DC power.
4. Timing of DC electric motor run signal	DC electric motor has a 2 sec. signal (12V DC) to RUN to unlock the locking element. If there is dirt on the positioning screw or the screw is unlubricated, the system will require a longer signal for the DC electric motor. Clean and lubricate the moving screw and nut. If the system still needs more time to unlock the locking element, set up a longer signal for DC electric motor (2-2.5 sec.). Positioning nut must not be in contact with the limiter when the procedure is finished.

Table 166

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Diagnosing Failure 137	
1. Check the SDL3 switch	Microswitch SDL3 is signaling unlocked drum, but washing drum has been locked.
2. Replace the SDL3 switch	If SDL3 switch does not work properly, replace SDL3. After replacement, check the positioning system.

Table 167

Diagnosing Failure 138	
1. Check the position of the locking element	Check the position of locking element. Turn off the machine and try to move with locking element to unlocked position. In the unlocked position, SDL3 is switched.
2. Check the SDL3 switch	If SDL3 switch does not work properly, replace SDL3.

Table 168

Diagnosing Failure 139	
1. Check the SDL3 switch	If SDL3 switch does not work properly, replace SDL3.
2. Check the SDL1 switch	If SDL1 switch does not work properly, replace SDL1.

Table 169

Diagnosing Failure 140	
1. Check position of locking element	Check the position of locking element. Turn off the machine and try to move with locking element to unlocked position. In the unlocked position, SDL3 is switched.

continues...

Table 170

Diagnosing Failure 140	
2. Check the SDL3 switch	If SDL3 switch does not work properly, replace SDL3.

Table 170

Diagnosing Failure 141	
1. Check position of locking element	Check the position of locking element. Turn off the machine and try to move with locking element to unlocked position. In the unlocked position, SDL3 is switched.
2. Check DC electric motor	Check wiring and power supply to DC motor. Power supply must be 12V DC.

Table 171

Failure 142: Drum Rotation Error

For *M360, *M500, and *M700 barrier washers only.

During the first 10 seconds after motor starts the washing controller counts pulses coming from level changes from proximity inductive sensor. This is the same sensor which serves to distinguish between dirty and clean barrier washing machine side. If, after 10 seconds has passed, the computer counts fewer than 2 pulses, error 142 will appear.

Diagnosing Failure 142	
1. Check whether driving belts are in order.	If driving belts are not operable, replace them.
2. Check whether motor power inverter is operable or whether there is an error on the inverter display.	Check inverter manual for root cause of issue.
3. Check whether inductive proximity sensor is operable or whether one causes LED drum position changes.	If the inductive proximity sensor doesn't sense plate, replace it.

Table 172

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Failure 300-353: Mitsubishi Inverter Alarm Message

Always make sure you have the correct inverter parameter settings in the inverter, especially when you have replaced an inverter. If you are not sure go to the Configuration menu and select "Inverter Menu…". Set the correct machine type, supply voltage, load the parameters from the wash computer to the inverter once more. If the correct parameters are not in the inverter, many inverter alarms may occur. For further information, refer to original inverter manual (available on request).

Failure Message Overview			
Error Number	**Failure**	**Failure Name**	**Explanation**
300	Err OC1	Overcurrent	Refer to *Failure 300-301-302: OC Errors (OVERCURRENT).*
301	Err OC2	Overcurrent	
302	Err OC3	Overcurrent	
303	Err OV1	Overcurrent	Refer to *Failure 303-304-305: OV Errors (OVERVOLTAGE).*
304	Err OV2	Overcurrent	
305	Err OV3	Overcurrent	
306	Err THT	Inverter overload	Refer to *Failure 306: THT-Error (INVERTER OVERLOAD).*
307	Err THM	Motor overload	Refer to *Failure 307: THM-Error (MOTOR OVERLOAD).*
308	Err FAN	Fan stopped	Repair the cooling fan. Clean or replace if necessary.
309	Err OLT	Stall prevention	Refer to *Failure 309: OLT-Error (STALL PREVENTION).*
310	Err BE	Brake transistor	Short circuit in brake transistor circuit. Power off immediately! Replace the inverter.
311	Err GF	Ground fault	Output overcurrent to ground. 1. Check the motor cable and motor for ground faults. 2. Disconnect the motor cable and try again. If you still have the error, replace the inverter.
312	Err OHT*	Ext thermal relay	External thermal relay (TRM module, see electrical scheme) for motor protection tripped. TRM module was only used on certain machines with MCB controller and A500 inverter.
313	Err OPT	Option	Refer to *Failure 313-315: OPT/PUE-Error (OPTION FAULT/ PARAMETER UNIT LEAVE OUT).*
314	Err PE	Corrupt memory	Memory was overwritten too many times. Replace inverter.
315	Err PUE	PU leave out	Refer to *Failure 313-315: OPT/PUE-Error (OPTION FAULT/ PARAMETER UNIT LEAVE OUT).*
316	Err Ret*	Retry no over	The max number of retries after fault reached. The actual inverter error code that causes the problem and which should be solved, is stored just before Err 316 in the error log.
317	Err CPU	CPU Fault	Communication error of built in CPU. Replace inverter.

continues...

Table 173

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Failure Message Overview			
Error Number	**Failure**	**Failure Name**	**Explanation**
318	Err E.6	CPU Fault 6	Internal fault, if the fault is persistent, replace the inverter.
319	Err E.7	CPU Fault 7	Internal fault, if the fault is persistent, replace the inverter.
320	Err IPF	Instantaneous power failure	Power failure between 15 and 100ms. Check for bad contacts in the power circuit. Repair the power supply. Check the pressure switch and the compressor. A short-term drop in compressed air pressure may have occured.
321	Err UVT	Under voltage	Supply voltage too low. Check jumper P/+-P1.
322	Err LF	Output phase failure	Phase open detected on inverter output. Check for bad contacts or defect (open) motor windings.
323	Err OP1*	Option slot 1	Problem with the option in slot 1 or option contact fault.
324	Err OP2*	Option slot 2	Problem with the option in slot 2 or option contact fault.
325	Err OP3*	Option slot 3	Problem with the option in slot 3 or option contact fault.
326	Err CTE	PU short circuit	Short circuit on the RS485 communication connector. Check for short circuit in the communication cable.
327	Err P24	24VDC short circuit	Short circuit on the 24VDC power output (PC terminal). Check for short circuit on the inverter control terminals.
328	Err MB1*	Brake sequence error 1	Sequence errors during use of the brake function.
329	Err MB2*	Brake sequence error 2	
330	Err MB3*	Brake sequence error 3	
331	Err MB4*	Brake sequence error 4	
332	Err MB5*	Brake sequence error 5	
333	Err MB6*	Brake sequence error 6	
334	Err MB7*	Brake sequence error 7	
335	Err FIN	Heatsink overheat	Refer to *Failure 335: FIN-Error (COOLING FIN INVERTER OVERHEAT).*
336	Err OSD*	Speed deviation excess	Too big speed deviation during vector control.
337	Err ECT*	Encoder signal loss	Problem with the encoder signal.
338	Err E.1*	Option alarm (connector1)	Occurs if there is a contact fault of the connector between the inverter and the communication option or if the communication option is fitted to connector 1 or 2 or if the switch of the plug-in option is not on the default setting.
339	Err E.2*	Option alarm (connector2)	
340	Err E.3*	Option alarm (connector3)	
341	Err ILF*	Input phase failure	1 phase of the 3-ph input was lost for more than 1 second. Repair the 3-phase power supply.

continues...

Table 173

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

* This option or function is not used. If you have this error anyway do the following :

1. Reload the inverter parameters.
2. If the fault is persistent, contact Technical Support.

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Failure 300-301-302: OC Errors (OVERCURRENT)

Diagnosing Failure 300-301-302	
1. Verify that there is no short circuit on the output of the inverter. (loose wire of motor cable, motor windings, screws or other loose parts inside the motor terminal box,…)	Repair the short circuit.
2. Disconnect the motor cable from the inverter and try again.	If you still have the error with motor cable disconnected, replace the inverter.

Table 174

Failure 303-304-305: OV Errors (OVERVOLTAGE)

Diagnosing Failure 303-304-305	
If the DC-voltage on the capacitors is too high, the inverter will generate OV error.	
1. Check if there was a high unbalance during extraction, which can be caused by putting only half loads in the machine.	Put always a full load in the machine drum.
2. Check if the supply voltage is not too high.	Reduce the supply voltage.
3. Check if the fault is persistent	If the fault is persistent, contact the manufacturer

Table 175

Failure 306: THT-Error (INVERTER OVERLOAD)

Diagnosing Failure 306	
If the output current of the inverter is abnormal high for some time, the inverter will go into THT-alarm state.	
1. Verify that the power supply is sufficient and stable during extraction with load.	Repair the power supply.
2. Make sure the drum rotates normally by hand. No abnormal high friction.	Repair / clean what is necessary.

continues...

Table 176

Diagnosing Failure 306	
3. Check if the motor windings are OK.	Replace the motor.

Table 176

Failure 307: THM-Error (MOTOR OVERLOAD)

Diagnosing Failure 307	
If the motor current is higher than allowed for a longer time, the inverter will activate the electronic overcurrent protection to prevent the motor from overheating and the inverter will go into THM-alarm state.	
1. Check if the drum rotates normally by hand.	Repair / clean what is necessary.
2. Check if the motor windings are OK.	Replace the motor.
3. Check if the fault is persistent.	If the fault is persistent, contact the manufacturer.

Table 177

Failure 309: OLT-Error (STALL PREVENTION)

Diagnosing Failure 309	
The output frequency has dropped to minimum because of current limitation.	
1. Check if the power supply is sufficient high and stable during extraction with load.	Repair the power supply.
2. Check if the drum rotates normally by hand. No abnormal high friction.	Repair / clean what is necessary.
3. Check if the motor windings are OK.	Replace the motor.

Table 178

Failure 313-315: OPT/PUE-Error (OPTION FAULT/PARAMETER UNIT LEAVE OUT)

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

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Diagnosing Failure 313-315	
If the inverter doesn't receive requests from the wash computer (no serial communication), after about 10-30 seconds the inverter will go into OPT/PUE-alarm state.	
1. Check at the end of the wash cycle, if the power supply contactor of the frequency inverter switches is switched off on all phases.	Replace the contactor if the problem is persistent.

Table 179

Failure 335: FIN-Error (COOLING FIN INVERTER OVERHEAT)

Diagnosing Failure 335	
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. Refer to Installation/Operation/Maintenance Manual.	Take care that the ambient temperature is within the specified limits.

Table 180

Failure 500-526: Memory Errors

If a memory error occurs then something is going wrong with the EEPROM.

Try to reload the washing Programs. Check for source of electrical "noise".

Failure 550: Traceability Write

The failure 550 is a failure of the wash computer internal memory. This failure message appears after a failed attempt to write the Traceability into the internal memory. Change the CPU control board.

(Traceability function can be switched off in the Advanced Menu).

Failure 551: Traceability Full

The failure message 551 is displayed if the Traceability data fill up the internal memory of the wash computer.

The Traceability data need to be "cleaned" utilizing a PC software.

As a consequence of the failure no data of the wash cycle can be saved.

(Traceability function can be switched off in the Advanced Menu).

Failure 552: DAQ Full Error

Failure 552 occurs when the wash computer DAQ memory is completely filled with traceability data.

The data should be removed by the Traceability PC software.

At the Advanced Menu : it is shown that the memory is "Full".

As a result no more wash cycle data can be stored anymore.

(Traceability function can be switched off in the Advanced Menu).

Failure 553: Store DAQ>PC DATA

Failure 553 occurs when 85% of the DAQ Traceability memory Segment contains wash cycle data.

It's a warning that the data should be unloaded by the Traceability PC software before the DAQ Traceability memory Segment is completely filled up.

This is only an informative message shown at the end of the wash cycle.

By opening the door, the message is removed automatically and the next wash cycle can be started.

(Traceability function can be switched off in the Advanced Menu).

Failure 560: USB Not Found

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

Failure 561: File Not Found

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

Failure 562: Export Failed

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

Failure 563: Import Failed

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

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Failure 600-628: Software Errors

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

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Service Information

Service Information

WARNING

Professional repairs in electro installation can be carried out only by service organization with permission given by producer / supplier.

In case of any maintenance or repair, disconnect the machine from source of energy and wait until the machine cools down or drains water.

Please follow all instructions in the manuals and the labels and as well as valid basic security laws in order to prevent burns and scalds and injuries caused by electricity.

C081

Maintenance

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

WARNING

Do not use aggresive soaps, caustic chemicals, gasoline or other petrochemical substances which can damage the keyboard.

C082

Information for Service

Finding out the software version:

- Press the SERVICE button to display the service information.
- Use the DOWN button and move to the SOFTWARE page. Here you can find the software version in the format 771.XXX.X.

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

Programmer Circuit Board

WARNING

Connection to the wrong voltage supply may cause serious bodily injury as well as damage to the electronic parts and to the wasching machine itself.

C083

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

CPU Board

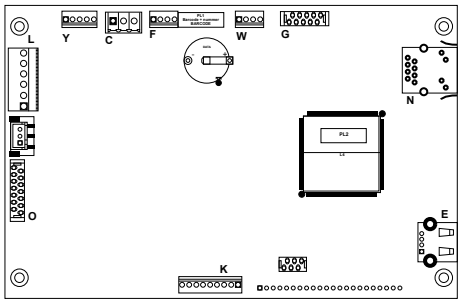


Figure 36

I/O Board

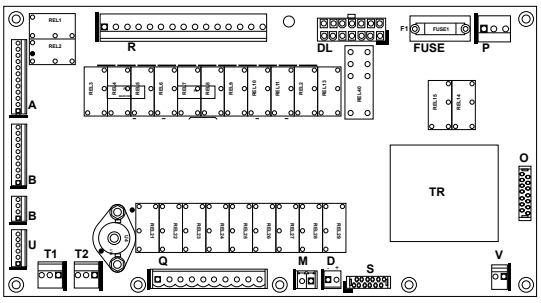


Figure 37

Instructions for Replacing the Programmer Boards

1. Switch off the main power supply.
2. Open the cover plate of the washing machine.
3. Remove the connectors from the programmer boards (including the connector between the CPU and I/O boards) and remove the small hose from the water level sensor.
4. The CPU board of the programmer can be removed after you have unscrewed the securing screws.
5. Remove the I/O board of the programmer, including the bearing sheet metal after you have loosened the two securing screws.
6. Insert a new electronic programmer into the machine and secure it by the screws.

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7. Reconnect all the connectors and put the little hose back on the level sensor.
8. Close the cover plate of the washing machine.
9. Now you can Switch On the power supply.
10. The display should illuminate.

WARNING

Make sure that the small hose of the level sensor is correctly secured by a flexible clamp.

If the hose is not air tight then the level sensor will not make a correct measurement.

Make sure that you don´t damage the flex cable of the keypad when you put the wash computer back into the machine.

C084

Instructions for Installing New Software

1. Switch the machine power supply off.
2. Open the cover plate of the washing machine.
3. Insert a flash drive containing the software into the USB connector E (of the CPU board).
4. Switch the machine power supply on.
5. The display shows information that the software is being copied from the flash drive into the programmer board.
6. When the copying is finished a prompt to remove the flash drive from the CPU is displayed.
7. Switch the machine power supply off and remove the flash drive.
8. Close the washing machine cover plate.
9. Switch the machine power supply on.
10. If the software is compatible with the previous software the new software can be used without re-initialization.
11. Clear all error messages in the Service-menu if you want to verify correct functionality of the new installed software.

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

- A message which says “New SW version” will appear followed by a prompt to enter a password for initialization of the Configuration Menu
- In Configuration Menu, select Reset Factory Setting. This is explained in Chapter *Basic Description of Controls*.
- Go through the Menu items of the Configuration and Initialization Menu one by one to ensure that all settings correspond with the ones you prefer.
- All Custom Settings will be lost.

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