

PROGRAMMING MANUAL

DOC. NO. 438.9216-15/01 EDITION 45.2008

Washer extractors Compass Control

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The manufacturer reserves the right to make changes to design and component specifications.

Safety Precautions



Safety Precautions



The machine is only intended for water-wash use.

Do not allow minors to use the machine.

Do not hose down the machine with water.

The machine's door lock must under no circumstances be bypassed.

If the machine develops a fault, this must be reported to the person in charge as soon as possible. This is important both for your safety and that of others.

The machine is not intended to be used by people (including minors) with reduced physical or mental capacity or lack of experience and knowledge. Such people must be instructed in the use of the machine by a person who has responsibility for their safety. Minors must be supervised to ensure that they do not play with the machine.



All external equipment which is connected to the machine must be CE/EMC-approved and connected using an approved shielded cable.

General

This programming manual is intended for personnel with the authority to adjust parameters in the machine's existing wash programs, programming slot meters, reading statistics and configuring certain machine interfaces with the user. Programming is achieved using menus in the display while the machine is in service mode.

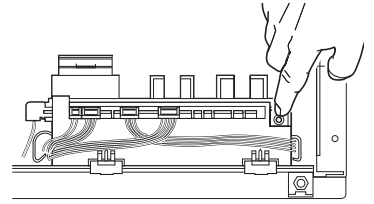
Engaging servicemode

Service mode is engaged by using one of the following alternative:

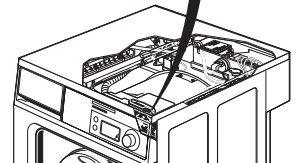
- ① **Alt. 1** Service switch on the CPU board under the top cover on the front of the machine.
- Alt. 2** Service switch on the I/O board at the rear of the machine to the right of the electrical connection (not on WD4130H and WD4240H).

Press the service button about 2 sec.

1

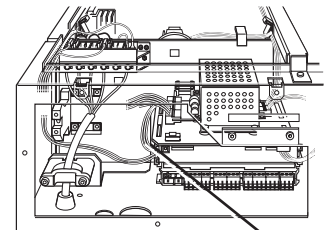


Alt. 1



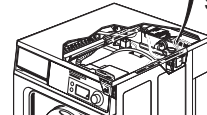
6242

W455H



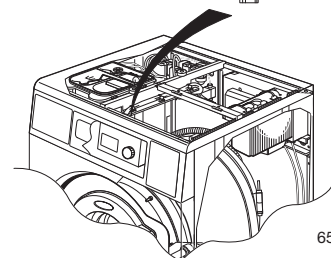
Alt. 2

Service button



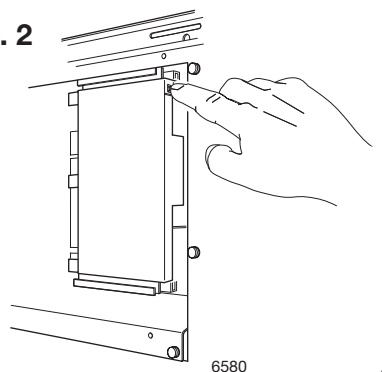
6256

Alt. 1



6582

Alt. 2



6580

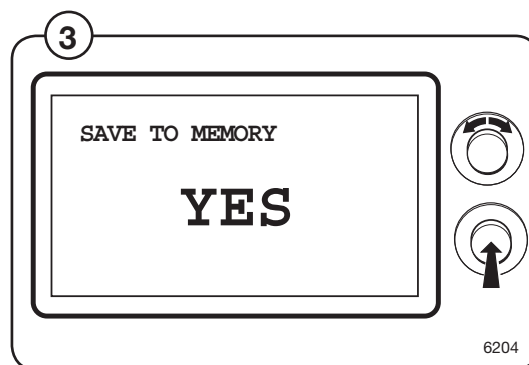
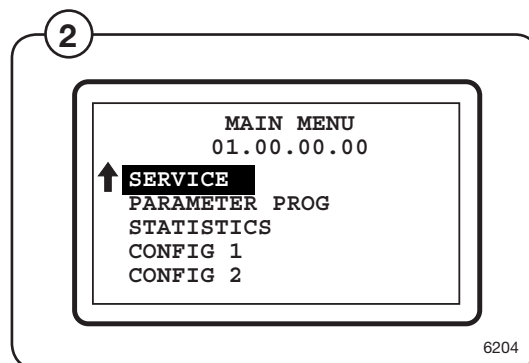
- ② The machine software will now switch to its service mode. The display lists the submenus available in this mode.

This programming manual describes the functions and programming instructions for the following submenus:

- PARAMETER PROGR.
- STATISTICS
- ADJUST DISPLAY
- RESET TO FACTORY
- QUICK START BUTTONS

For other submenus, please refer to the service manual.

- ③ To save changes to the machine's flash memory, they must be confirmed in a menu that is displayed automatically whenever a change has been made and you are exiting the menu.



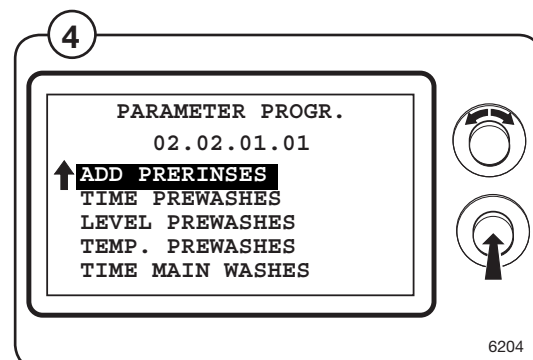
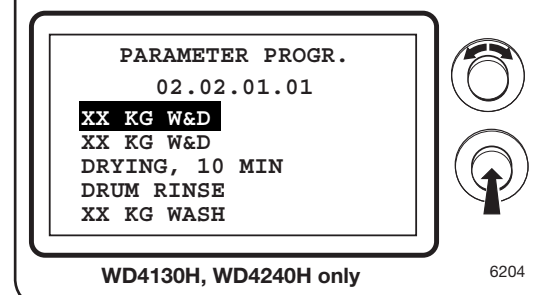
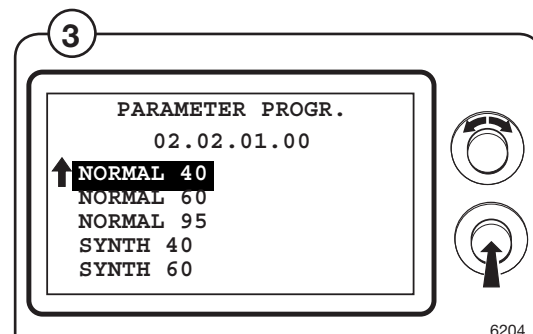
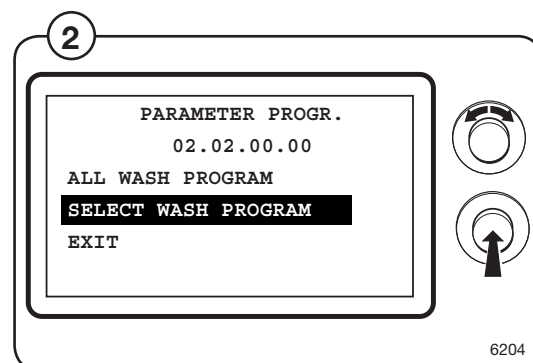
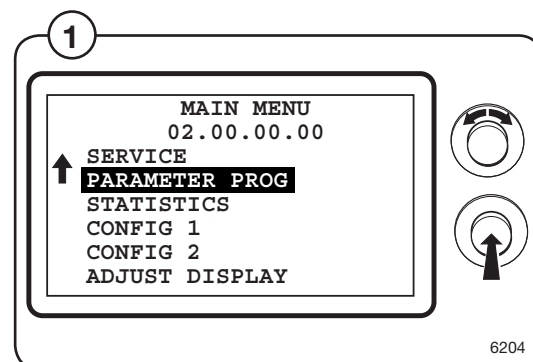
Programming

Parameter programming

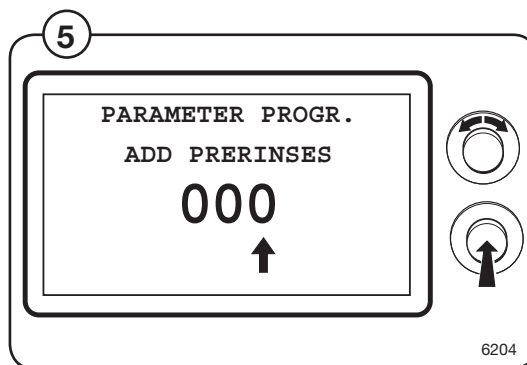
From this menu you can change a number of parameters in the machine's wash program. These changes can be applied to all installed wash programs or just for one individual wash program.

- 1 Select the **PARAMETER PROG** row and press the knob.
- 2 Choose whether to apply the change to all the wash programs or just to one individual wash program and press the knob.
- 3 If the change is to be applied to only one individual wash program, select the program and press the knob.
- 4 The parameters that can be adjusted are now shown on the display. Select the desired parameter and press the knob.

- ADD PRERINSES
- TIME PREWASHES
- LEVEL PREWASHES
- TEMP. PREWASHES
- TIME MAIN WASHES
- LEVEL MAIN WASHES
- TEMP. MAIN WASHES
- ADD RINSES
- LEVEL RINSES
- SKIP SEC. LAST RINSE



- ⑤ The arrow in each parameter menu shows the column being adjusted.
- Turn the knob clockwise to set the desired number between 0 and 9.
 - Turn the knob anticlockwise to move to the next column. Turn the knob clockwise and set the value, etc.
 - Once all the columns have been set, press the knob to confirm the setting. Save by selection YES.
 - Once all the necessary parameters have been adjusted, select EXIT to return to the main menu.



ADD PRERINSES

- ⑥ Use the knob to set the number of rinses to be added to all or the chosen wash program and press the knob.

Confirm that the setting is to be saved by selecting YES and pressing the knob again.

TIME PREWASHES

- ⑦ Use the knob to adjust the time for the prewash to be applied to all or the chosen wash program and press the knob. The time is given in minutes ± 20 . (In some cases the value is limited. If a too high value is selected, the display will show the max value allowed.)

Confirm that the setting is to be saved by selecting YES and pressing the knob again.

LEVEL PREWASHES

- ⑧ Use the knob to adjust the water level during the prewash to be applied to all or the chosen wash program and press the knob. The level is given in scale units ± 78 , see under heading "Conversion table water level" (In some cases the value is limited. If a too high value is selected, the display will show the max value allowed.)

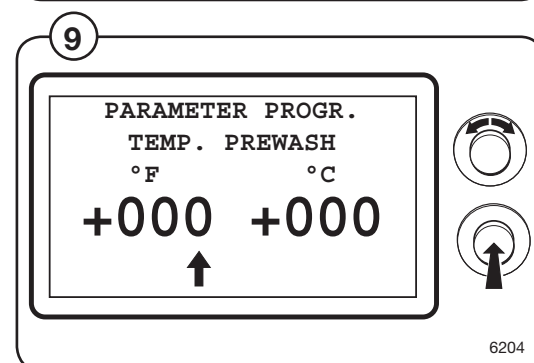
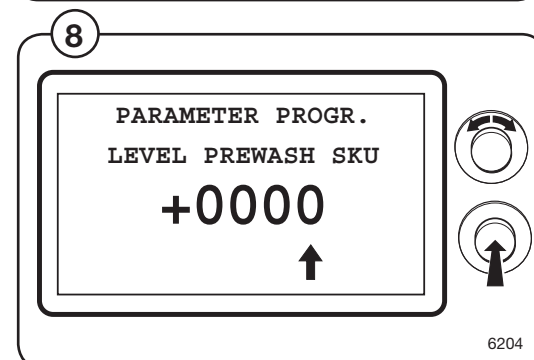
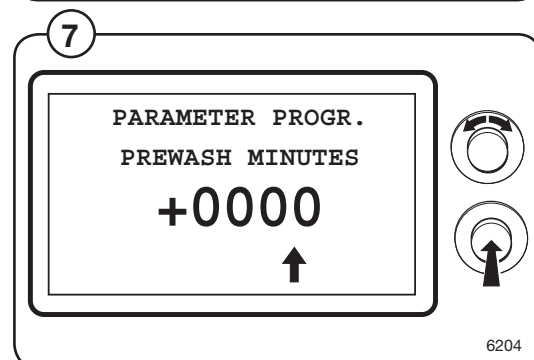
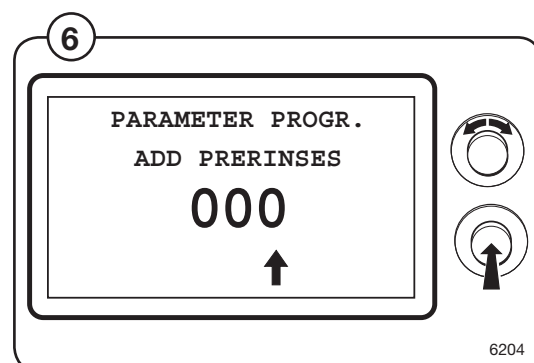
Confirm that the setting is to be saved by selecting YES and pressing the knob again.

TEMP. PREWASHES

- ⑨ Use the knob to adjust the temperature during the prewash to be applied to all or the chosen wash program and press the knob. The temperature is given in $^{\circ}\text{C} \pm 20$, max 95°C . (In some cases the value is limited. If a too high value is selected, the display will show the max value allowed.)

Adjusting temperature is done in $^{\circ}\text{F}$ and simultaneously changes the temperature in $^{\circ}\text{C}$.

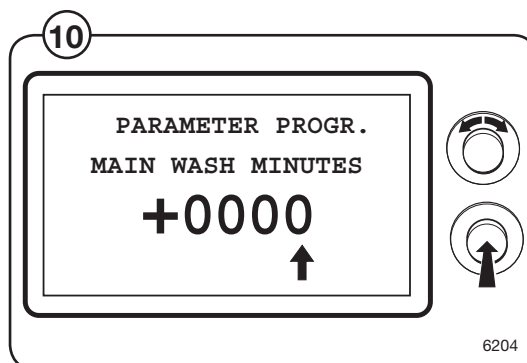
Confirm that the setting is to be saved by selecting YES and pressing the knob again.



TIME MAIN WASHES

- ⑩ Use the knob to adjust the time for the main wash to be applied to all or the chosen wash program and press the knob. The time is given in minutes ± 20 . (In some cases the value is limited. If a too high value is selected, the display will show the max value allowed.)

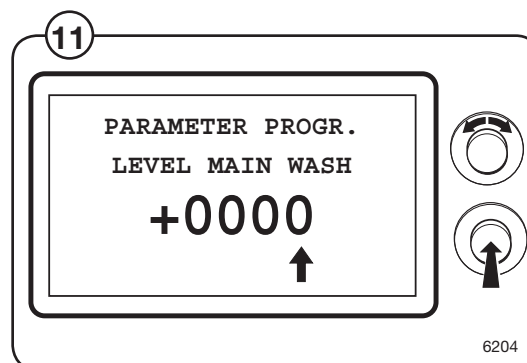
Confirm that the setting is to be saved by selecting YES and pressing the knob again.



LEVEL MAIN WASHES

- ⑪ Use the knob to adjust the water level during the main wash to be applied to all or the chosen wash program and press the knob. The level is given in scale divisions ± 78 , see under heading "Conversion table water level". (In some cases the value is limited. If a too high value is selected, the display will show the max value allowed.)

Confirm that the setting is to be saved by selecting YES and pressing the knob again.

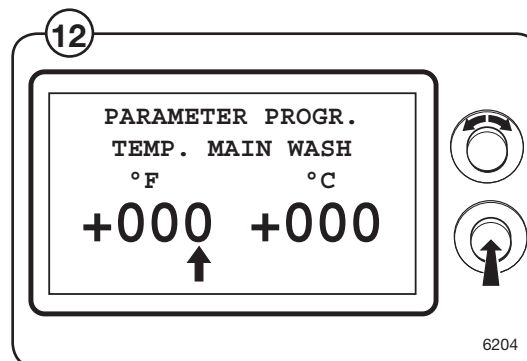


TEMP. MAIN WASHES

- ⑫ Use the knob to adjust the temperature during the main wash () to be applied to all or the chosen wash program and press the knob. The temperature is given in $^{\circ}\text{C} \pm 20$, max 95°C . (In some cases the value is limited. If a too high value is selected, the display will show the max value allowed.)

Adjusting temperature is done in $^{\circ}\text{F}$ and simultaneously changes the temperature in $^{\circ}\text{C}$.

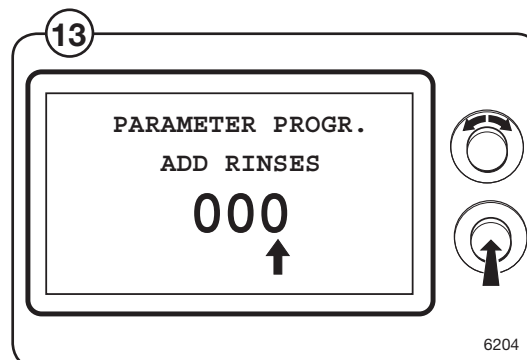
Confirm that the setting is to be saved by selecting YES and pressing the knob again.



ADD RINSES

- ⑬ Use the knob to set the number of rinses to be added to all or the chosen wash program and press the knob. The specified number of rinses will be added before the normal final rinse.

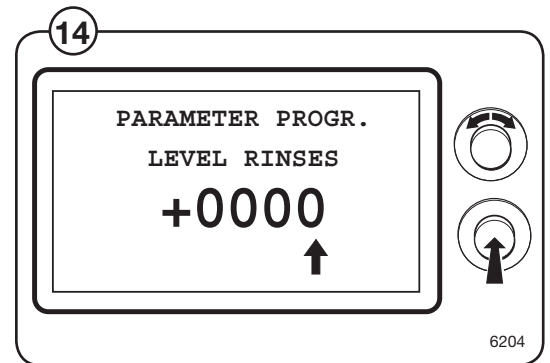
Confirm that the setting is to be saved by selecting YES and pressing the knob again.



LEVEL RINSES

- ⑭ Use the knob to adjust the water level for rinses to be applied to all or the chosen wash program and press the knob. The level is given in scale units ± 78 , see under heading "Conversion table water level". (In some cases the value is limited. If a too high value is selected, the display will show the max value allowed.)

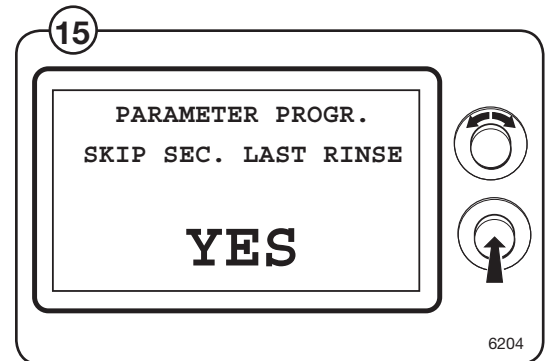
Confirm that the setting is to be saved by selecting YES and pressing the knob again.



SKIP SEC. LAST RINSE

- ⑮ The second to last normal rinse can be excluded from the wash program using this menu.

Confirm that the setting is to be saved by selecting YES and pressing the knob again.



Statistics

16 This menu contains statistics on running time, completed wash programs and terminated wash programs, slot meter and error codes.

17 Select the STATISTICS row and press the knob.

The display will now show a number of sub-menus containing the available statistics. Select the desired menu and press the knob.

- RUN HOURS
- TRIP RUN HOURS
- RESET TRIP RUN HOURS
- NUMB. WASH PROG.
- TRIP. WASH PROG.
- RESET WASH PROG.
- COIN COUNT 1
- RESET COIN COUNT 1
- COIN COUNT 2
- RESET COIN COUNT 2
- RESTARTS, UNBALANCE
- OMITTED EXTRACTIONS
- ERROR LOG 1
- ERROR LOG 2
- ERROR LOG MOTOR
- WASH PROG. STATISTICS

RUN HOUR

18 Specifies the total running hours, in hours, since the machine was installed and used for the first time.

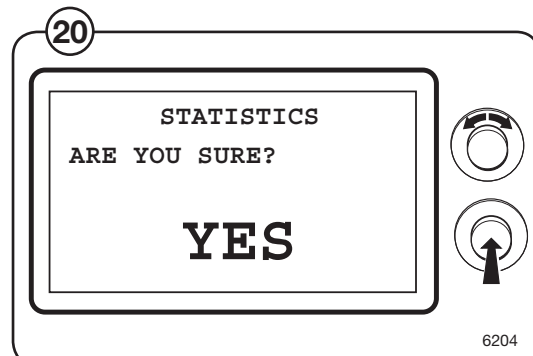
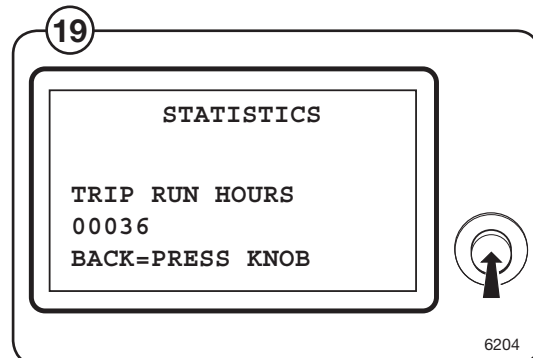
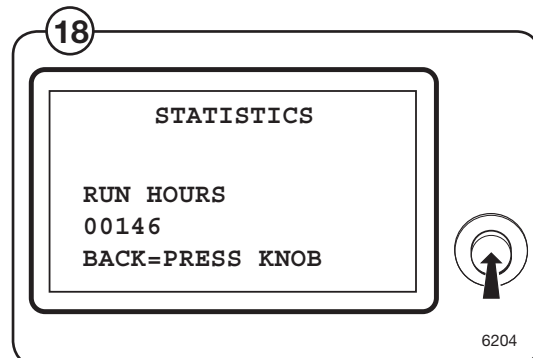
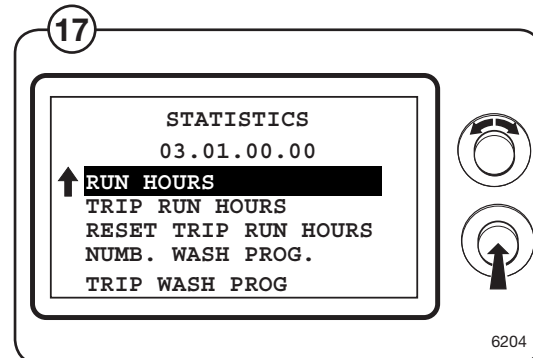
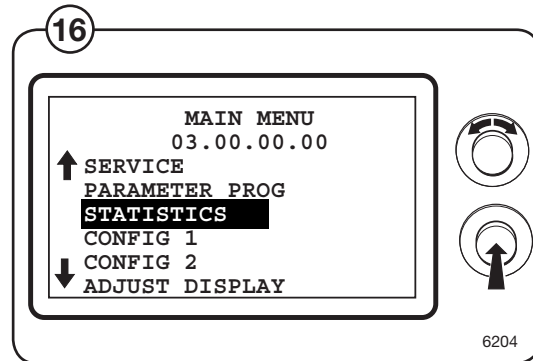
TRIP RUN HOURS

19 Specifies the total running hours , in hours, since the running hours were last reset.

RESET TRIP RUN HOURS

Resets the running hours trip counter.

20 Confirm that the counter is to be reset by selecting YES and pressing the knob.



NUMB. WASH PROG.

- ②① Specifies the total number of wash programs since the machine was installed and used for the first time.

TRIP. WASH PROG.

- ②② Specifies the total number of wash programs since the counter was last reset.

RESET WASH PROG.

Resets the wash program trip counter.

- ②③ Confirm that the counter is to be reset by selecting YES and pressing the knob again.

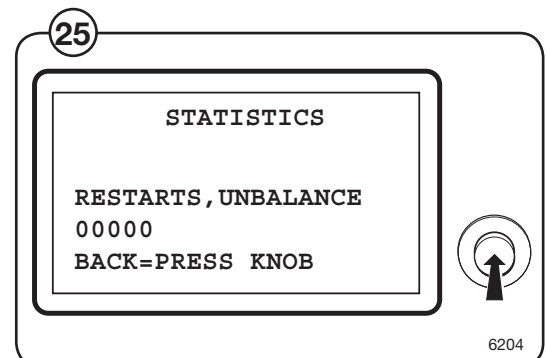
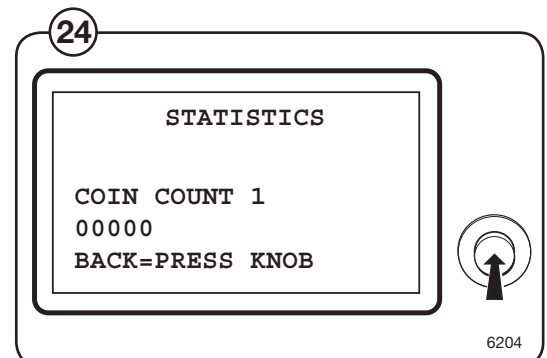
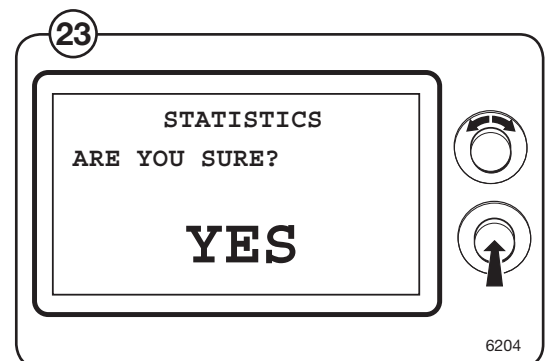
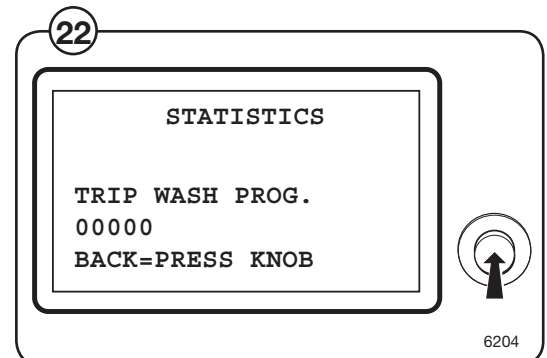
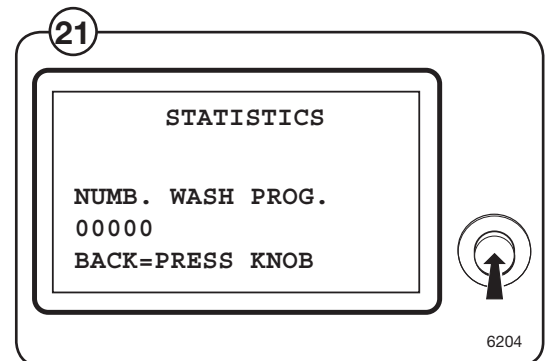
COIN COUNT 1 and 2

- ②④ Coin count 1 shows the total sum of the value of the coins inserted in coin insert 1 alt. 1 and 2.

Coin count 2 shows the total number of the coins inserted in coin insert 1 alt. 1 and 2.

RESTARTS, UNBALANCE

- ②⑤ Specifies the number of restarts the machine has done due to an unbalanced drum.



OMITTED EXTRACTIONS

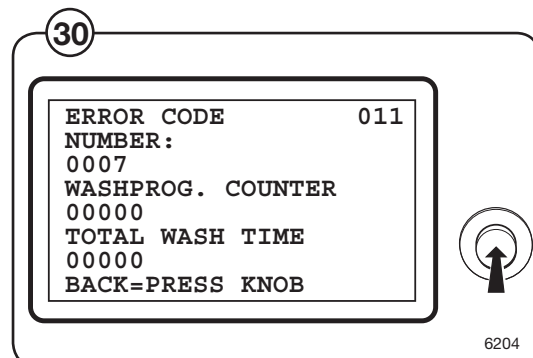
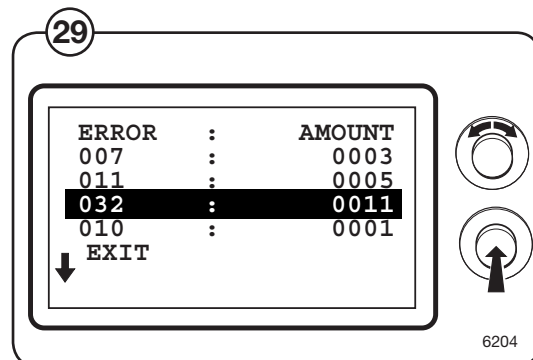
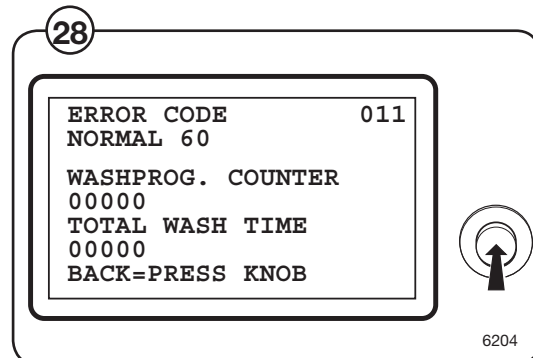
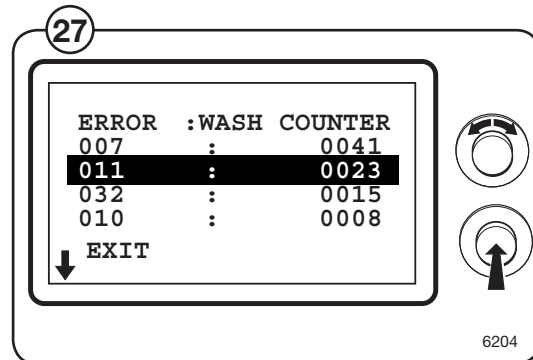
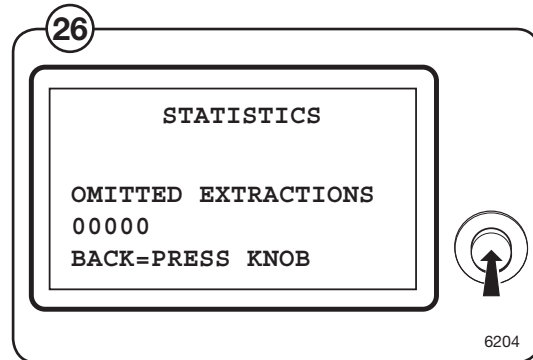
- 26 Specifies the number of times the machine has omitted water extraction due to an unbalanced drum.

ERROR LOG 1

- 27 Shows up to 20 of the latest error codes and how many wash programs that have been carried out since the error code was generated. The most recent error is at the top of the list.
- 28 Select an error code and press the knob. The following information is given for the selected error code:
- Wash program running when error occurred
 - The program phase the machine was in when the error occurred
 - Total number of wash programs
 - Total running hours

ERROR LOG 2

- 29 Shows all the error codes that have occurred and the total number each error code has been activated.
- 30 Select an error code and press the knob. The following information is given for the selected error code::
- Number of times the error code has been activated.
 - The total number of wash programs since last error occurred.
 - The running hours since the last time the error occurred.



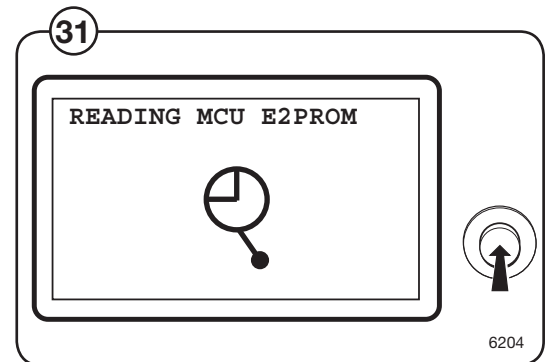
ERROR LOG MOTOR

- 31 The internal registration of error codes in the motor control is shown.

Note!

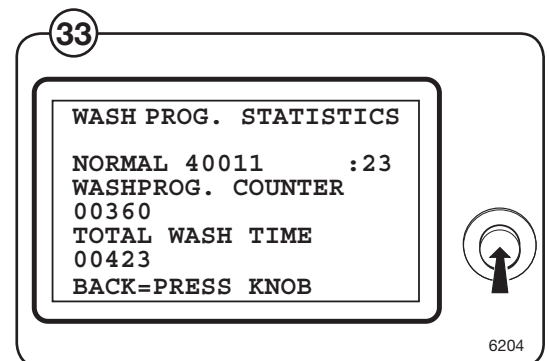
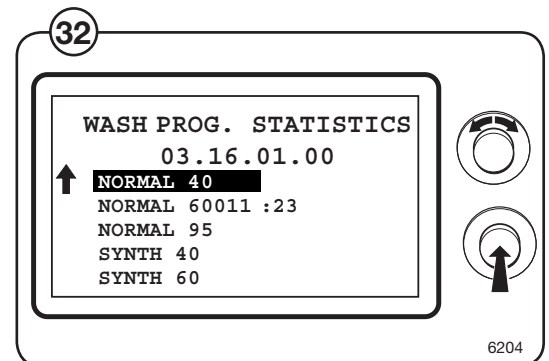
It can take up to one minute before information is shown in the display.

For further information, contact your supplier.



WASH PROG. STATISTICS

- 32 Shows a list of the wash programs installed on the machine.
- 33 Select a wash program and press the knob. The following information is given for the selected error code:
- Number of times the wash program has been run.
 - The sum of the total washing time for selected wash program.



ADJUST DISPLAY

- 34 The contrast of the display can be adjusted with this menu to adapt to the prevailing lighting in the room where the machine is placed. Turn clockwise or counter clockwise direction.
- 35 Adjust the value as necessary.
- Confirm the new setting by selecting YES and pressing the knob again.

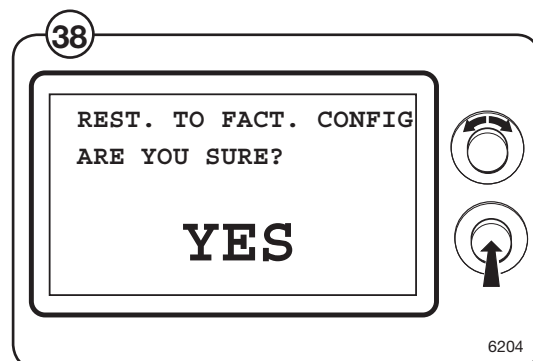
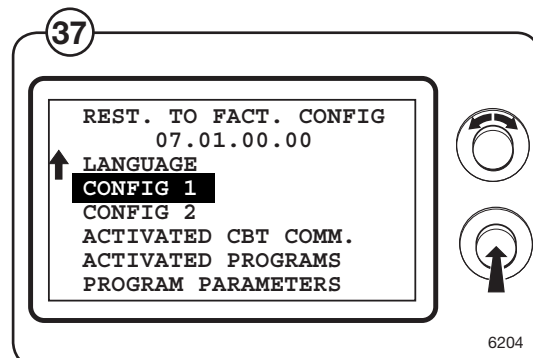
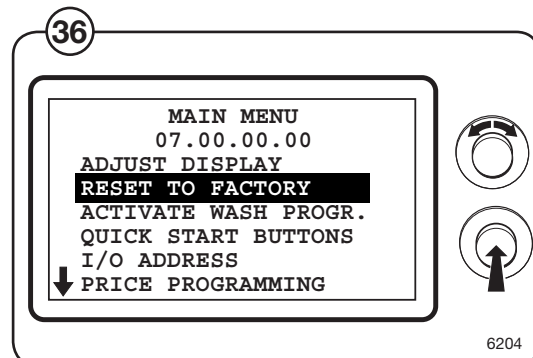
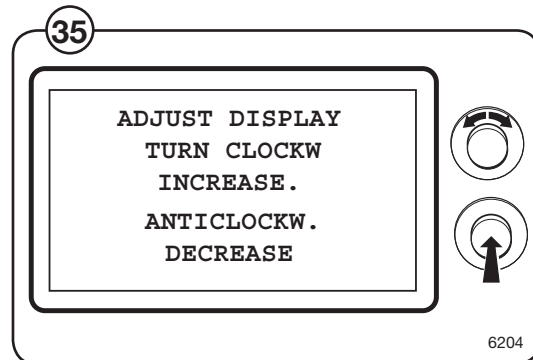
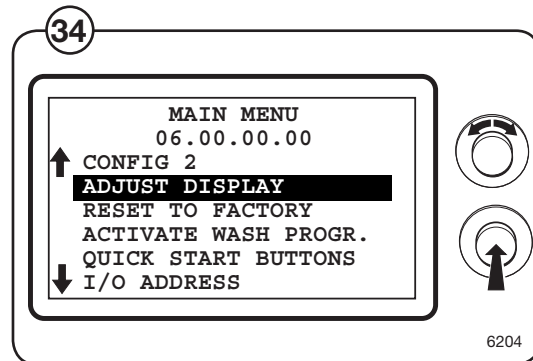
RESET TO FACTORY

Using the "RESET TO FACTORY" menu, changed parameters in the machine's software can be reset to their factory defaults, i.e. the parameter values the machine had when it left the factory. Parameters for resetting are divided into the following five groups:

- Config 1
- Config 2**
- Activated CBT communication**
- Activated Programs
- Program Parameters
- Activated MIS communication
- Rest. to fact. config**
- Total restore**

** Requires password

- 36 Select the RESET TO FACTORY row and press the knob.
- 37 Enter the desired parameter group to reset and press the knob.
- 38 Confirm the reset by selecting YES and pressing the knob again.



QUICK START BUTTONS

This menu enables you to program the machine's quick start buttons (applies to quick start buttons marked 1 and 2 only).

- 39 Select the QUICK START BUTTONS/CONFIG BUTTONS row and press the knob.

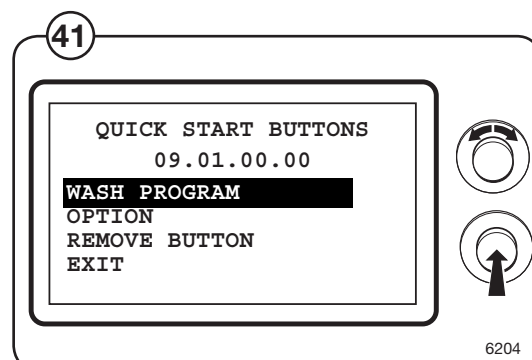
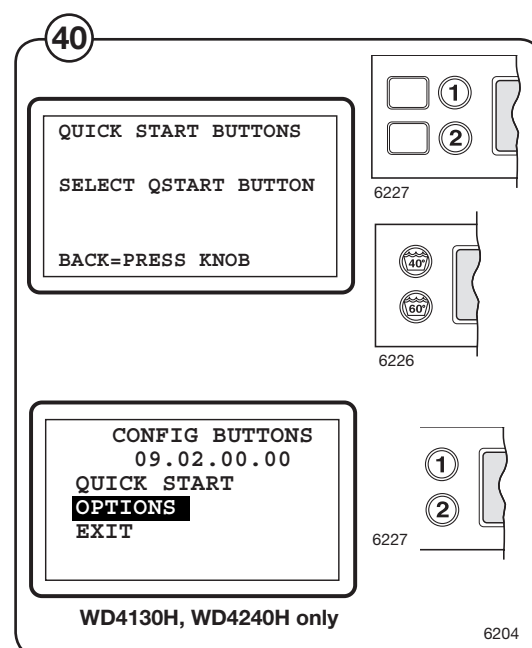
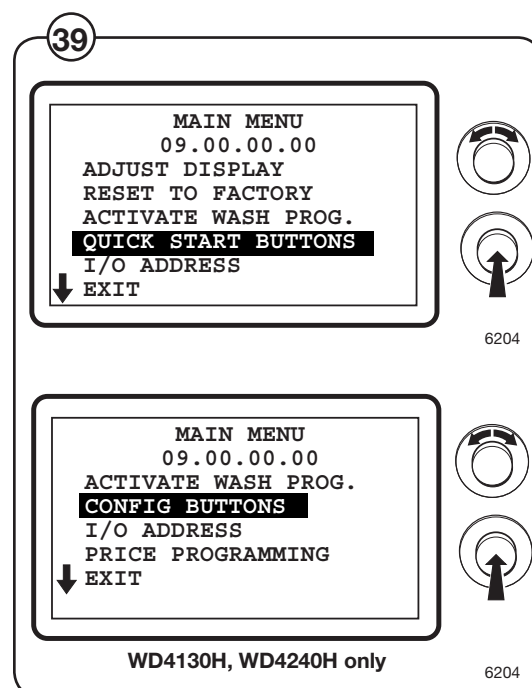
- 40 Press the button to be programmed.

- 41 Select a program, option or disable the button. To be able to select an option, a wash program has to be selected first.

Confirm the new setting by selecting YES and pressing the knob again.

Label the button with the selected function with the accompanying sticker.

As standard, the first wash program is on button 1 and the next wash program on button 2 in the wash program selection menu.



Price programming

To be able to perform price programming the machine needs to have the coin-meter installed and connected.

If a machine is equipped with a coin-meter after it has been installed, the coin-meter needs to be activated prior to price settings. This can be done by setting a value on Coin Value 1 alt. both Coin Value 1 and 2. This can be done under the menu Config 1 or under Price Programming. Mark row "COIN VALUE"

- Pull out the coin box
- Activate the switch for price programming

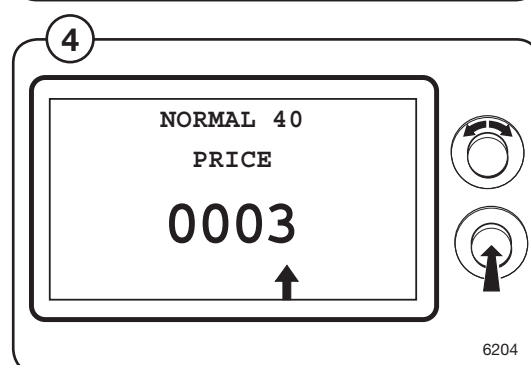
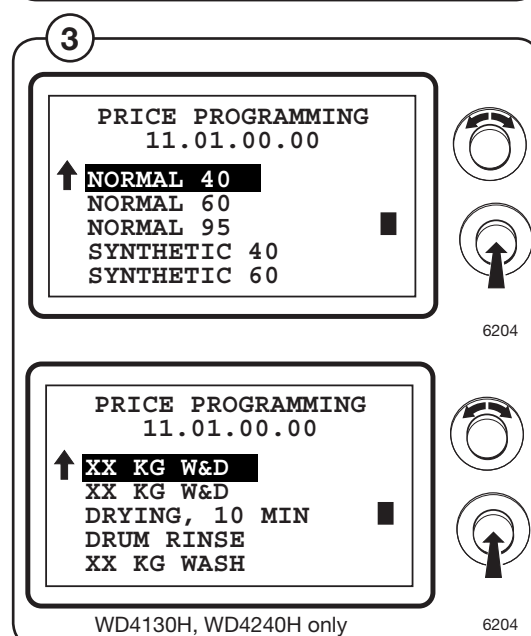
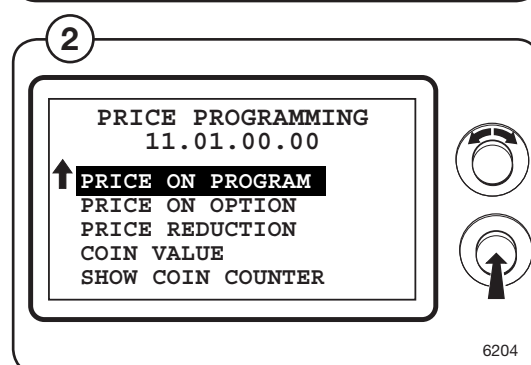
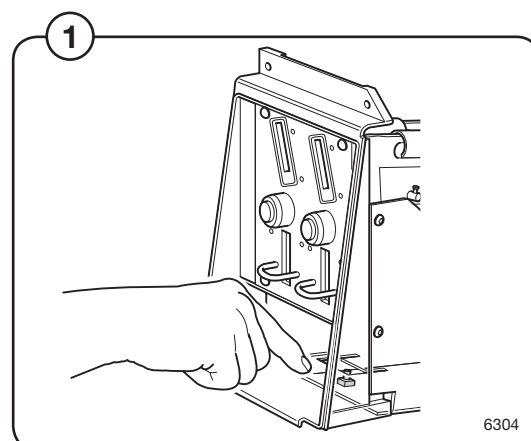
①

Price programming menu will now be shown in the display. Price setting can now be done for wash programs, options and price reduction.

Price on program

- ② • Mark row "Price on program" and press the knob.
- ③ • Select wash program for price setting.
- ④ • Give requested price and press the knob.

Price set wash program will be shown with a rectangle after the program name.



Price on option

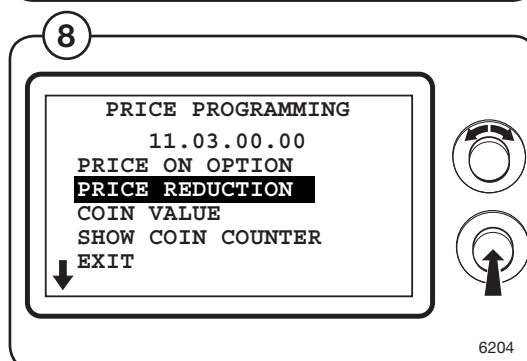
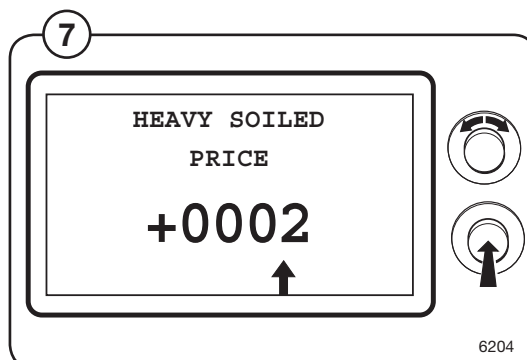
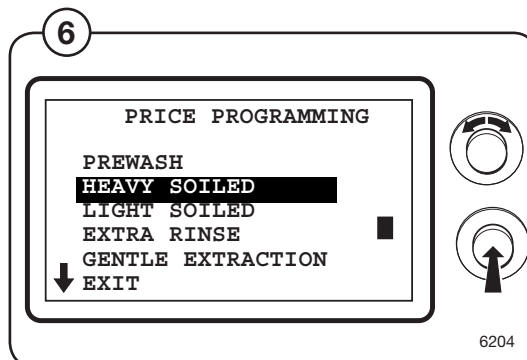
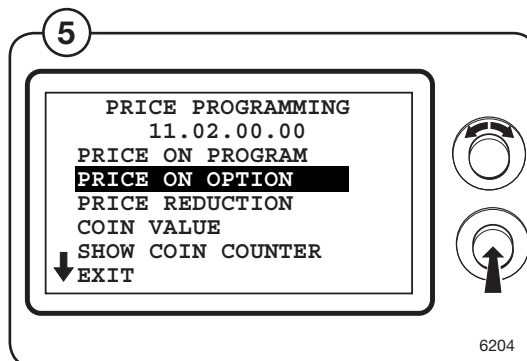
- 5 • Mark row "Price on option" and press the knob.
- 6 • Select the option for price setting.
- 7 • Give requested price and press the knob.

Price set option will be shown with a rectangle after the option name.

Price reduction

- 8 • Mark row "Price reduction" and press the knob.
- 9 • Set the requested price reduction in percent of the set price. Press the knob.

The set price reduction is now valid for all wash programs and options.



Coin value

The "Coin Value" menu is used to specify the relationship between coin slot 1 and coin slot 2.

- 10 Select the COIN VALUE row and press the knob.

- 11 Select COIN VALUE 1 or 2 and press the knob.

For coin counters with one coin slot, only Coin Value 1 is used.

- 12 Enter the desired value (0 999) for each coin slot.

For example: Coin 1; 1 = 1 EURO

Coin 2; 5 = 5 EURO

Coin 1; 50 = 50 Cent

Coin 2; 100 = 1 EURO

- 13 If the price for a wash program is to be given with a colon, select "Dot when price" and then YES and press the knob.

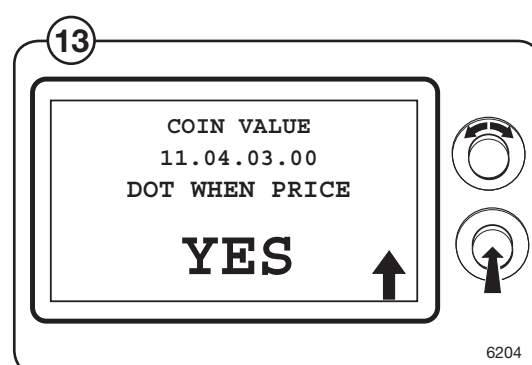
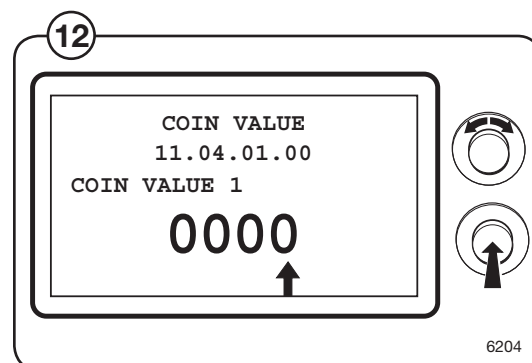
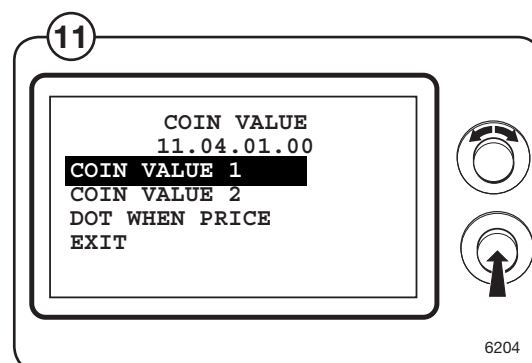
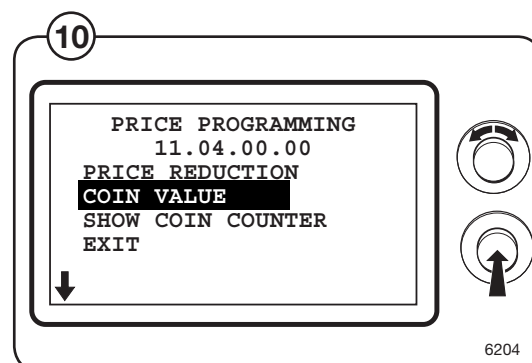
For example: Enter price 300 and select "Dot when price" the price is shown as 3:00 in the display.

Confirm the new setting by selecting YES and pressing the knob again.

If the machine is delivered with a coin counter, then the factory sets the value.

Note!

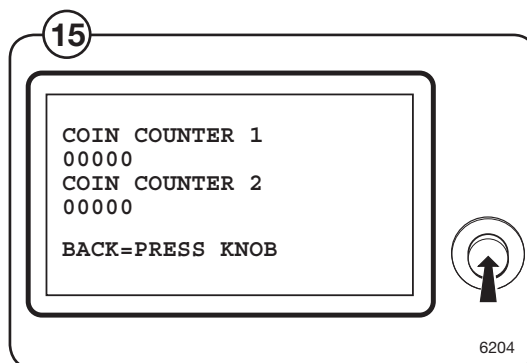
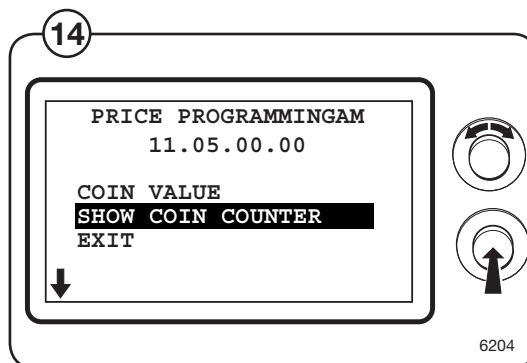
Coin value can also be set in Config 1.



Show coin counter

The "Show coin counter" is used to show the value for the counters 1 and 2 since last reset.

- 14 Select the SHOW COIN COUNTER row and press the knob.
- 15 Coin count 1 shows the total sum of the value of the coins inserted in coin insert 1 alt. 1 and 2.
Coin count 2 shows the total number of the coins inserted in coin insert 1 alt. 1 and 2.



Conversion table water level with empty drum

W455H

| Scale unit | Water volume (litre) | Water level * (mm) | |
|------------------------------------|----------------------|--------------------|--------------------|
| 19 | 2 | 9 | Empty level |
| 34 | 3 | 19 | Heating level |
| 76 | 6.9 | 50 | |
| 95 | 8.8 | 64 | Low level |
| 102 | 9.6 | 69 | |
| 116 | 11.1 | 79 | Medium level |
| 124 | 12 | 85 | |
| 132 | 13 | 91 | High level |
| 150 | 15.1 | 104 | |
| 320 | 36.3 | 225 | |
| 350 | 41.5 | 248 | Over filling level |
| * Level above bottom of inner drum | | | |

W465H

| Scale unit | Water volume (litre) | Water level * (mm) | |
|------------------------------------|----------------------|--------------------|--------------------|
| 42 | 2.9 | 1 | Empty level |
| 50 | 3.5 | 6 | Heating level |
| 76 | 6 | 35 | |
| 100 | 8.1 | 52 | Low level |
| 130 | 10.5 | 72 | |
| 150 | 13 | 88 | Medium level |
| 163 | 14.6 | 99 | |
| 170 | 15.6 | 104 | High level |
| 240 | 23.4 | 154 | |
| 270 | 27.1 | 176 | |
| 480 | 53.4 | 330 | Over filling level |
| * Level above bottom of inner drum | | | |

Conversion table water level with empty drum

W475H, EX618

| Scale unit | Water volume (litre) | Water level * (mm) | |
|------------------------------------|----------------------|--------------------|--------------------|
| 45 | 2.8 | 1 | Empty level |
| 50 | 3.2 | 5 | Heating level |
| 82 | 5.8 | 30 | |
| 100 | 7.5 | 43 | Low level |
| 129 | 10.9 | 65 | |
| 150 | 13.5 | 82 | Medium level |
| 159 | 14.6 | 89 | |
| 170 | 15.9 | 96 | High level |
| 195 | 19.5 | 116 | |
| 270 | 30 | 170 | |
| 480 | 59.2 | 323 | Over filling level |
| * Level above bottom of inner drum | | | |

W4105H, EX625

| Scale unit | Water volume (litre) | Water level * (mm) | |
|------------------------------------|----------------------|--------------------|--------------------|
| 50 | 3.5 | 1 | Empty level |
| 60 | 4.6 | 12 | Heating level |
| 98 | 8.9 | 44 | |
| 140 | 14.2 | 75 | Low level |
| 170 | 18.3 | 96 | |
| 235 | 27.6 | 143 | Medium level |
| 249 | 29.7 | 153 | |
| 255 | 30.6 | 157 | High level |
| 285 | 35.3 | 179 | |
| 520 | 73 | 348 | Over filling level |
| * Level above bottom of inner drum | | | |

Conversion table water level with empty drum

27

W4130H, WD4130H, WB4130H, EX630

| Scale unit | Water volume (litre) | Water level * (mm) | |
|------------------------------------|----------------------|--------------------|--------------------|
| 49 | 4.9 | 1 | Empty level |
| 52 | 5.9 | 10 | Heating level |
| 79 | 8.8 | 30 | |
| 150 | 18.9 | 83 | Low level |
| 190 | 25.3 | 112 | |
| 235 | 33.2 | 145 | Medium level |
| 239 | 34 | 148 | |
| 255 | 36.8 | 160 | High level |
| 290 | 43 | 185 | |
| 660 | 112 | 453 | Over filling level |
| * Level above bottom of inner drum | | | |

W4180H, WB4180H, EX640

| Scale unit | Water volume (litre) | Water level * (mm) | |
|------------------------------------|----------------------|--------------------|--------------------|
| 45 | 5.9 | 1 | Empty level |
| 60 | 7.5 | 15 | Heating level |
| 137 | 18.7 | 72 | |
| 190 | 28.8 | 110 | Low level |
| 239 | 38.8 | 145 | |
| 300 | 52.2 | 189 | Medium level |
| 320 | 57.9 | 203 | |
| 330 | 59 | 210 | High level |
| 335 | 59.5 | 213 | |
| 740 | 155 | 509 | Over filling level |
| * Level above bottom of inner drum | | | |

W4240H, WD4240H, EX655

| Scale unit | Water volume (litre) | Water level * (mm) | |
|------------------------------------|----------------------|--------------------|--------------------|
| 40 | 7 | 1 | Empty level |
| 60 | 8.9 | 11 | Heating level |
| 159 | 25.2 | 78 | |
| 210 | 36.8 | 115 | Low level |
| 264 | 50.2 | 153 | |
| 330 | 67.8 | 200 | Medium level |
| 357 | 75.2 | 220 | |
| 360 | 76 | 222 | High level |
| 400 | 87 | 251 | |
| 730 | 160 | 491 | Over filling level |
| * Level above bottom of inner drum | | | |

Conversion table water level with empty drum

W4300H, EX670

| Scale unit | Water volume (litre) | Water level * (mm) | |
|------------------------------------|----------------------|--------------------|--------------------|
| 49 | 7.3 | 1 | Empty level |
| 60 | 9.7 | 10 | Heating level |
| 152 | 29.9 | 76 | |
| 250 | 59 | 145 | Low level |
| 297 | 75 | 179 | |
| 330 | 86.4 | 203 | Medium level |
| 350 | 93.4 | 218 | |
| 360 | 96.9 | 225 | High level |
| 400 | 111 | 255 | |
| 730 | 234 | 495 | Over filling level |
| * Level above bottom of inner drum | | | |

W475M, W475N

| Scale unit | Water volume (litre) | Water level * (mm) | |
|------------------------------------|----------------------|--------------------|--------------------|
| 45 | 2.8 | 1 | Empty level |
| 50 | 3.2 | 5 | Heating level |
| 95 | 7.2 | 40 | |
| 130 | 11 | 66 | Low level |
| 150 | 13.5 | 82 | |
| 170 | 15.9 | 96 | Medium level |
| 184 | 17.6 | 106 | |
| 210 | 21.6 | 127 | High level |
| 250 | 27 | 156 | |
| 480 | 59 | 323 | Over filling level |
| * Level above bottom of inner drum | | | |

W485M, W485N, SU620, W620

| Scale unit | Water volume (litre) | Water level * (mm) | |
|------------------------------------|----------------------|--------------------|--------------------|
| 46 | 3.3 | 1 | Empty level |
| 50 | 3.8 | 6 | Heating level |
| 89 | 7.7 | 38 | |
| 140 | 14.2 | 75 | Low level |
| 162 | 17 | 91 | |
| 180 | 19.6 | 105 | Medium level |
| 187 | 20.2 | 108 | |
| 210 | 23 | 126 | High level |
| 250 | 30.3 | 156 | |
| 480 | 66 | 322 | Over filling level |
| * Level above bottom of inner drum | | | |

Conversion table water level with empty drum

29

W4105M, W4105N

| Scale unit | Water volume (litre) | Water level * (mm) | |
|------------------------------------|----------------------|--------------------|--------------------|
| 50 | 3.5 | 1 | Empty level |
| 60 | 4.6 | 12 | Heating level |
| 100 | 9.1 | 45 | |
| 160 | 16.9 | 89 | Low level |
| 194 | 21.4 | 113 | |
| 245 | 29.1 | 150 | Medium level |
| 249 | 29.7 | 153 | |
| 260 | 31.4 | 161 | High level |
| 280 | 34.6 | 175 | |
| 520 | 73 | 348 | Over filling level |
| * Level above bottom of inner drum | | | |

W4130M, W4130N, SU630, W630

| Scale unit | Water volume (litre) | Water level * (mm) | |
|------------------------------------|----------------------|--------------------|--------------------|
| 52 | 4.2 | 1 | Empty level |
| 60 | 5.8 | 14 | Heating level |
| 105 | 11.4 | 46 | |
| 175 | 22.8 | 97 | Low level |
| 200 | 27 | 115 | |
| 240 | 35 | 145 | Medium level |
| | | | |
| 265 | 40 | 163 | High level |
| 315 | 50 | 178 | |
| 520 | 93 | 348 | Over filling level |
| * Level above bottom of inner drum | | | |

W4180M, W4180N, SU640, W640

| Scale unit | Water volume (litre) | Water level * (mm) | |
|------------------------------------|----------------------|--------------------|--------------------|
| 49 | 5.8 | 1 | Empty level |
| 60 | 7.9 | 15 | Heating level |
| 104 | 14.9 | 47 | |
| 200 | 35.4 | 117 | Low level |
| 225 | 40 | 135 | |
| 275 | 52 | 171 | Medium level |
| 300 | 58 | 181 | |
| 330 | 65.7 | 210 | High level |
| 368 | 75.1 | 237 | |
| 660 | 150 | 450 | Over filling level |
| * Level above bottom of inner drum | | | |

Conversion table water level with empty drum

W4250M, W4250N, SU655, W655

| Scale unit | Water volume (litre) | Water level * (mm) | |
|------------------------------------|----------------------|--------------------|--------------------|
| 44 | 6.6 | 1 | Empty level |
| 60 | 8.9 | 14 | Heating level |
| 250 | 54.1 | 151 | Low level |
| 270 | 60 | 166 | |
| 340 | 81.2 | 216 | Medium level |
| | | | |
| 380 | 93.8 | 245 | High level |
| 385 | 95.3 | 249 | |
| 740 | 211 | 508 | Over filling level |
| * Level above bottom of inner drum | | | |

W4330M, W4330N, SU675, W675

| Scale unit | Water volume (litre) | Water level * (mm) | |
|------------------------------------|----------------------|--------------------|--------------------|
| 54 | 8.2 | 1 | Empty level |
| 60 | 9.5 | 5 | Heating level |
| 280 | 71.3 | 163 | Low level |
| 300 | 78.3 | 179 | |
| 380 | 107.5 | 237 | Medium level |
| | | | |
| 430 | 127 | 273 | High level |
| 440 | 131 | 281 | |
| 775 | 265 | 525 | Over filling level |
| * Level above bottom of inner drum | | | |

Conversion table water level with empty drum

31

W475H, EX618

| Scale unit | Water volume (US gallon) | Water level * (inch) | |
|------------------------------------|-----------------------------|-------------------------|--------------------|
| 45 | 0.74 | 1/16 | Empty level |
| 50 | 0.85 | 3/16 | Heating level |
| 82 | 1.5 | 1 3/16 | |
| 100 | 1.98 | 1 11/16 | Low level |
| 129 | 2.88 | 2 9/16 | |
| 150 | 3.56 | 3 1/4 | Medium level |
| 159 | 3.85 | 3 1/2 | |
| 170 | 4.2 | 3 3/4 | High level |
| 195 | 5.15 | 4 9/16 | |
| 270 | 7.92 | 6 11/16 | |
| 480 | 15.63 | 12 11/16 | Over filling level |
| * Level above bottom of inner drum | | | |

W4105H, EX625

| Scale unit | Water volume (US gallon) | Water level * (inch) | |
|------------------------------------|-----------------------------|-------------------------|--------------------|
| 50 | 0.92 | 1/16 | Empty level |
| 60 | 1.22 | 1/2 | Heating level |
| 98 | 2.35 | 1 3/4 | |
| 140 | 3.75 | 2 15/16 | Low level |
| 170 | 4.83 | 3 3/4 | |
| 235 | 7.29 | 5 5/8 | Medium level |
| 249 | 7.84 | 6 | |
| 255 | 8.08 | 6 3/16 | High level |
| 285 | 9.32 | 7 1/16 | |
| 520 | 19.27 | 13 11/16 | Over filling level |
| * Level above bottom of inner drum | | | |

Conversion table water level with empty drum

W4130H, WD4130H, WB4130H, EX630

| Scale unit | Water volume (US gallon) | Water level * (inch) | |
|------------------------------------|-----------------------------|-------------------------|--------------------|
| 49 | 1.29 | 1/16 | Empty level |
| 52 | 1.56 | 3/8 | Heating level |
| 79 | 2.32 | 1 3/16 | |
| 150 | 5 | 3 1/4 | Low level |
| 190 | 6.68 | 4 7/16 | |
| 235 | 8.76 | 5 11/16 | Medium level |
| 239 | 8.97 | 5 13/16 | |
| 255 | 9.72 | 6 5/16 | High level |
| 290 | 11.35 | 7 5/16 | |
| 660 | 29.57 | 17 13/16 | Over filling level |
| * Level above bottom of inner drum | | | |

W4180H, WB4180H, EX640

| Scale unit | Water volume (US gallon) | Water level * (inch) | |
|------------------------------------|-----------------------------|-------------------------|--------------------|
| 45 | 1.56 | 1/16 | Empty level |
| 60 | 1.98 | 9/16 | Heating level |
| 137 | 4.94 | 2 13/16 | |
| 190 | 7.6 | 4 5/16 | Low level |
| 239 | 10.24 | 5 11/16 | |
| 300 | 13.78 | 7 7/16 | Medium level |
| 320 | 15.29 | 8 | |
| 330 | 15.58 | 8 1/4 | High level |
| 335 | 15.71 | 8 3/8 | |
| 740 | 40.92 | 20 1/16 | Over filling level |
| * Level above bottom of inner drum | | | |

W4240H, WD4240H, EX655

| Scale unit | Water volume (US gallon) | Water level * (inch) | |
|------------------------------------|-----------------------------|-------------------------|--------------------|
| 40 | 1.85 | 1/16 | Empty level |
| 60 | 2.35 | 7/16 | Heating level |
| 159 | 6.65 | 7 1/16 | |
| 210 | 9.72 | 4 1/2 | Low level |
| 264 | 13.25 | 6 | |
| 330 | 17.9 | 7 7/8 | Medium level |
| 357 | 19.85 | 8 11/16 | |
| 360 | 20.06 | 8 3/4 | High level |
| 400 | 22.97 | 9 7/8 | |
| 730 | 42.24 | 19 5/16 | Over filling level |
| * Level above bottom of inner drum | | | |

Conversion table water level with empty drum

33

W4300H, EX670

| Scale unit | Water volume (US gallon) | Water level * (inch) | |
|------------------------------------|-----------------------------|-------------------------|--------------------|
| 49 | 1.93 | 1/16 | Empty level |
| 60 | 2.56 | 3/8 | Heating level |
| 152 | 7.89 | 3 | |
| 250 | 15.58 | 5 11/16 | Low level |
| 297 | 19.8 | 7 1/16 | |
| 330 | 22.8 | 8 | Medium level |
| 350 | 24.66 | 8 9/16 | |
| 360 | 25.58 | 8 7/8 | High level |
| 400 | 29.3 | 10 1/16 | |
| 730 | 61.78 | 19 1/2 | Over filling level |
| * Level above bottom of inner drum | | | |

W475M, W475N

| Scale unit | Water volume (US gallon) | Water level * (inch) | |
|------------------------------------|-----------------------------|-------------------------|--------------------|
| 45 | 0.74 | 1/16 | Empty level |
| 50 | 0.85 | 3/16 | Heating level |
| 95 | 1.9 | 1 9/16 | |
| 130 | 2.9 | 2 5/8 | Low level |
| 150 | 3.56 | 3 1/4 | |
| 170 | 4.2 | 3 3/4 | Medium level |
| 184 | 4.65 | 4 3/16 | |
| 210 | 5.7 | 5 | High level |
| 250 | 7.13 | 6 1/8 | |
| 480 | 15.58 | 12 11/16 | Over filling level |
| * Level above bottom of inner drum | | | |

W485M, W485N, SU620, W620

| Scale unit | Water volume (US gallon) | Water level * (inch) | |
|------------------------------------|-----------------------------|-------------------------|--------------------|
| 46 | 0.87 | 1/16 | Empty level |
| 50 | 1.0 | 1/4 | Heating level |
| 89 | 2.03 | 1 1/2 | |
| 140 | 3.75 | 2 15/16 | Low level |
| 162 | 4.49 | 3 9/16 | |
| 180 | 5.17 | 4 1/8 | Medium level |
| 187 | 5.33 | 4 1/4 | |
| 210 | 6.07 | 4 15/16 | High level |
| 250 | 8.0 | 6 1/8 | |
| 480 | 17.42 | 12 11/16 | Over filling level |
| * Level above bottom of inner drum | | | |

Conversion table water level with empty drum

W4105M, W4105N

| Scale unit | Water volume (US gallon) | Water level * (inch) | |
|------------------------------------|-----------------------------|-------------------------|--------------------|
| 50 | 0.92 | 1/16 | Empty level |
| 60 | 1.21 | 1/2 | Heating level |
| 100 | 2.4 | 1 3/4 | |
| 160 | 4.46 | 3 1/2 | Low level |
| 194 | 5.65 | 4 7/16 | |
| 245 | 7.68 | 5 7/8 | Medium level |
| 249 | 7.84 | 6 | |
| 260 | 8.29 | 6 5/16 | High level |
| 280 | 9.13 | 6 7/8 | |
| 520 | 19.27 | 13 11/16 | Over filling level |
| * Level above bottom of inner drum | | | |

W4130M, W4130N, SU630, W630

| Scale unit | Water volume (US gallon) | Water level * (inch) | |
|------------------------------------|-----------------------------|-------------------------|--------------------|
| 52 | 1.11 | 1/16 | Empty level |
| 60 | 1.53 | 9/16 | Heating level |
| 105 | 3.0 | 1 13/16 | |
| 175 | 6.02 | 3 13/16 | Low level |
| 200 | 7.13 | 4 1/2 | |
| 240 | 9.24 | 5 11/16 | Medium level |
| | | | |
| 265 | 10.56 | 6 7/16 | High level |
| 315 | 13.2 | 7 | |
| 520 | 24.55 | 13 11/16 | Over filling level |
| * Level above bottom of inner drum | | | |

W4180M, W4180N, SU640, W640

| Scale unit | Water volume (US gallon) | Water level * (inch) | |
|------------------------------------|-----------------------------|-------------------------|--------------------|
| 49 | 1.53 | 1/16 | Empty level |
| 60 | 2.09 | 9/16 | Heating level |
| 104 | 3.93 | 1 7/8 | |
| 200 | 9.35 | 4 5/8 | Low level |
| 225 | 10.56 | 5 5/16 | |
| 275 | 13.73 | 6 3/4 | Medium level |
| 300 | 15.31 | 7 1/8 | |
| 330 | 17.34 | 8 1/4 | High level |
| 368 | 19.83 | 9 5/16 | |
| 660 | 39.6 | 17 11/16 | Over filling level |
| * Level above bottom of inner drum | | | |

Conversion table water level with empty drum

35

W4250M, W4250N, SU655, W655

| Scale unit | Water volume (US gallon) | Water level * (inch) | |
|------------------------------------|-----------------------------|-------------------------|--------------------|
| 44 | 1.74 | 1/16 | Empty level |
| 60 | 2.35 | 9/16 | Heating level |
| 250 | 14.28 | 5 15/16 | Low level |
| 270 | 15.84 | 6 9/16 | |
| 340 | 21.44 | 8 1/2 | Medium level |
| | | | |
| 380 | 24.76 | 9 5/8 | High level |
| 385 | 25.16 | 9 13/16 | |
| 740 | 55.7 | 20 | Over filling level |
| * Level above bottom of inner drum | | | |

W4330M, W4330N, SU675, W675

| Scale unit | Water volume (US gallon) | Water level * (inch) | |
|------------------------------------|-----------------------------|-------------------------|--------------------|
| 54 | 2.16 | 1/16 | Empty level |
| 60 | 2.51 | 3/16 | Heating level |
| 280 | 18.82 | 6 7/16 | Low level |
| 300 | 20.67 | 7 1/16 | |
| 380 | 28.38 | 9 5/16 | Medium level |
| | | | |
| 430 | 33.53 | 10 3/4 | High level |
| 440 | 34.58 | 11 1/16 | |
| 775 | 69.96 | 20 11/16 | Over filling level |
| * Level above bottom of inner drum | | | |

