Fisher&Paykel

Service Diagnostics
685 Washing Machine

479632B

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SPECIFICATIONS

Electric Supply

Operating Voltage	220/240V AC 50Hz
Current	10 amps

Wash Motor

Electronically commutated direct drive 3 Phase brushless DC Motor.
Motor Resistance:

Aluminium Stator	Per Winding	Phase to Phase
Phase 9	19.5 ohms ± 10%	39 ohms ± 10%

Pump Motor 230V AC 50Hz

Pump motor resistance:	Per Winding	Phase to Phase
SmartPump	8.1 ohms ± 10%	16.2 ohms ± 10%

Water Valves

CleanSmart	24 volts DC	Resistance 61 ohms @ 20˚C
WashSmart	24 volts DC	Resistance 64 ohms @ 20˚C

Water Supply

- For best operating conditions the hot water should be approximately 60˚C. The hot water should not exceed 65˚C or the cold water exceed 35˚C. Temperatures above these may cause the machine to fault or cause damage to the machine.
- If you have an uncontrolled water-heating source (e.g. a wet back or solar heating) you should have a tempering device fitted. This will ensure the hot water temperature remains within safe limits. For the most suitable type of tempering device we recommend you contact a local plumber or plumbing supply merchant.
- Inlet Water Pressure 5psi (35kPa) to 150psi (1MPa) Static.

Note: If using a header tank then the outlet of the header tank must be at least 2 metres above the top of washer console.

- Minimum flow rate from the tap, supplying the washer, should be greater than 6 litres/min (assumes ½ inch diameter pipes).

- Minimum height of taps to clear the top of the machine is 1150 mm.

Thermistor

NTC-type temperature sensor	Resistance 10,000 ohms @ 25°C Resistance 12,500 ohms @ 20°C

Lid Lock

Resistance range	63 ohms ± 10% at 20°C Normally low voltage, potentially 230V if harness is grounded on the cabinet

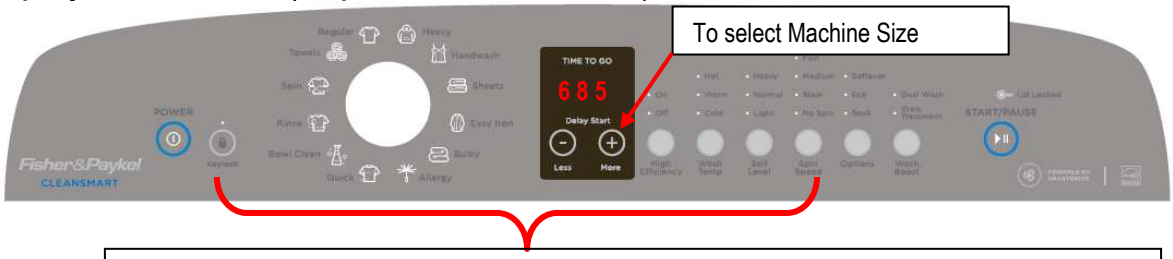
Inner Bowl Weight

LARGE	14.25Kg - 14.75Kg

CLEANSMART 685

Size setting

When a motor control module is replaced the machine when powered on will display fault code 9 (required to be size set).



With the console **Off** Press & Hold **Key Lock** and **Spin** for 3 Sec. **Size Setting Mode**

To set the size:

Turn the mains on at the supply point and off at the display.

Touch and hold the **KEYLOCK** and the **Spin** buttons for 3 seconds until the LED display shows the current setting of "- - -" or "685".

To select the size touch the MORE Button and "685" will display in the LED display.

To save the setting power off the console with the **Power** button, your selection is automatically saved.

Installation Test

Correct installation of the 685 washer is very important to the performance of the machine especially the dynamics of the spin cycle. To aid with the installation an install procedure P/No 421700 is attached on the top of the lid of each machine, as part of this procedure there is an installation test routine that checks the water inlet hot & cold, drain and low speed spin of the machine. The test routine will take approximately 3 to 10 minutes depending on the supply water pressure.

With the console **On** Press & Hold **Key Lock** and **Options** for 3 Sec. **Installation Mode**

To enter the **INSTALLATION TEST:**
Turn the power on at the power point and machine on at the console.

Press and hold the **KEYLOCK** and **OPTIONS** buttons for at least 3 seconds, after which time two beeps will sound and the LED display goes blank.

Press the **START PAUSE** button to start the test, which will take approximately 3 to 10 minutes, at the end of the test if all functions are working correctly the machine will sound end of cycle beeps and turn off, if there has been an issue encountered the machine will display the appropriate user warning at test end.

Show Room Mode

This feature is designed for in store demonstration purposes. So the machine can draw attention to itself and the different functions can be demonstrated.
In this mode the machine cannot be started.

With the console **Off** Press & Hold **Key Lock** and **Wash Boost** for 3 Sec. **Showroom Mode**

To select demonstration mode:

Turn the machine on at the mains supply and off at the console.

Press and hold the **KEYLOCK** & **WASH BOOST** buttons for 3 seconds.

To return to normal operation, the mains supply must be switched off.

Diagnostic Mode

With the console **On** Press & Hold **Key Lock** and **Wash Temp** foe 3 Sec. **Diagnostic Mode**

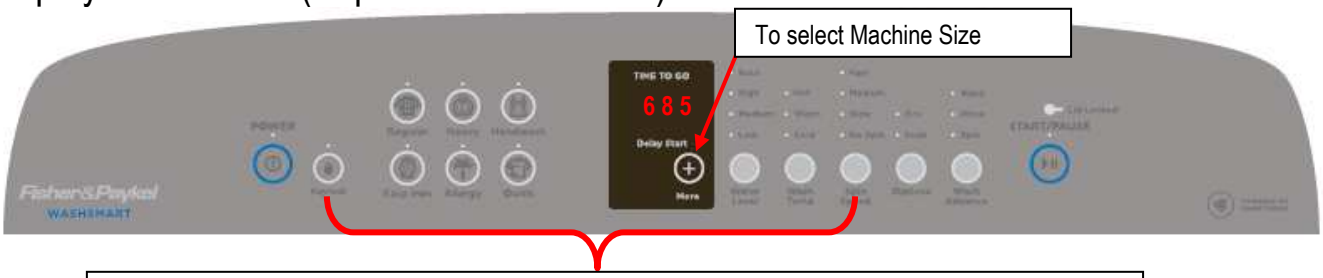
To enter the **DIAGNOSTIC MODE:**
Turn the power on at the mains supply and the machine on at the console.
Press and hold the **KEYLOCK** and **WASHTEMP** buttons for at least 3 seconds, after which time two beeps will sound and the program selector light guide flashes at 1Hz.

Diagnostics mode can be entered while the product is running.

WASHSMART 685

Size setting

When a motor control module is replaced the machine when powered on will display fault code 9 (required to be size set).



With the console **Off** Press & Hold **Key Lock** and **Spin** for 3 Sec. **Size Setting Mode**

To set the size:
Turn the mains on at the supply and off at the console.

Touch and hold the **KEYLOCK** and the **Spin** buttons for 3 seconds until the LED display shows the current setting of "- - -"or "685".
To select the size touch the More Button until "685" is displayed in the LED screen.

To save the setting power off the console with the **Power** button, your selection is automatically saved.

Installation Test

Correct installation of the 685 washer is very important to the performance of the machine especially the dynamics of the spin cycle. To aid with the installation an install procedure P/No 421700 is attached on the top of the lid of each machine, as part of procedure there is an installation test routine that checks the water inlet hot & cold, drain and low speed spin of the machine. The test routine will take approximately 3 to 10 minutes depending on the supply water pressure.

With the console **On** Press & Hold **Key Lock** and **Options** for 3 Sec. **Installation Mode**

To enter the **INSTALLATION TEST:**
Turn the power on at the power point and machine on at the console.

Press and hold the **"KEYLOCK"** and **"OPTIONS"** buttons for at least 3 seconds, after which time two beeps will sound and the LED display goes blank.

Press the **START PAUSE** button to start the test, which will take approximately 3 to 10 minutes, at the end of the test if all functions are working correctly the machine will sound end of cycle beeps and turn off, if there has been an issue encountered the machine will display the appropriate user warning at test end.

Showroom Mode

This feature is designed for in store demonstration purposes. So the machine can draw attention to itself and the different functions can be demonstrated. In this mode the machine cannot be started.

With the console **Off** Press & Hold **Key Lock** and **Wash Advance** fro 3 Sec. **Showroom Mode**

To select demonstration mode:

Turn the machine on at the mains supply and off at the console.

Press and hold the **KEYLOCK** & **WASH ADVANCE** buttons for 3 seconds.

To return to normal operation, the mains supply must be switched off.

Diagnostic Mode

With the console **On** Press & Hold **Key Lock** and **Wash Temp** for 3 Sec. **Diagnostic**

To enter the **DIAGNOSTIC MODE:**

1. Turn the mains on at the supply and on at the console.
2. Press and hold the **KEYLOCK** and **WASHTEMP** buttons for at least 3 seconds, after which time two beeps will sound.

   Diagnostics mode can be entered while the product is running.

DIAGNOSTICS

In Diagnostics mode the following I/O's can be operated.

I/O	Select	Then Press
Toggle Hot Valve Cold Valve Detergent Valve	Regular Cycle	Temperature Button Spin Button Options Button
Fabric Softener Valve Wash Boost Valve Hot Bowl Flag	Heavy Cycle	Temperature Button Spin Button Options Button
Toggle SmartPump Drain SmartPump Recirc	Hand Wash Cycle	Temperature Button Spin Button
Toggle Recycle (on/off) Restart (on/off) Recycle / Restart to EEPROM	Sheets Cycle (C/S) Easy Iron Cycle (W/S)	Temperature Button Spin Button Options Button
Smart Tool Opto Download	Start/Pause Button	

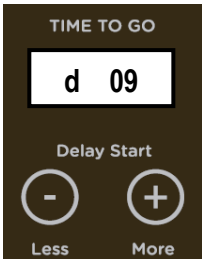
C/S = CleanSmart & W/S = WashSmart

Diagnostics Levels

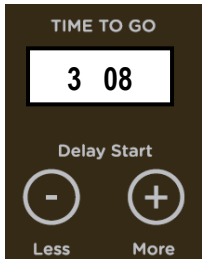
Allows various information, to be extracted from the machine while in diagnostics, which can be used in both the static, machine idle, and dynamic, machine running, mode. There are a total of 45 different levels associated with the 685 Washer, the most relevant service levels are listed in the accompanying table.

While in diagnostics use the "delay start + &/or water level" buttons for WashSmart and "delay start + &/or -" buttons for CleanSmart to select the diagnostics level required

E.g. If diagnostics level 09 (water level in mm) is selected, after 1 second the information that corresponds to level 09 is displayed in the 7segment display



1 second later



shows 308mm

Level	Diagnostic info Displayed	Level	Diagnostic info Displayed
d 00	Last User Warning	d 08	Bowl speed
d 01	Last User warning cycle Count	d 09	Water level
d 02	Last User warning cycle Position	d 10	Bowl float
d 03	Fault Code	d 11	Fill level
d 04	Fault code cycle count	d 19	Pump Speed (RPM)
d 05	Fault cycle position	d 20	HVDC
d 06	Current Temperature	d 21-22	Display SW Version
d 07	Cycle count	d 24-25	M/C SW Version

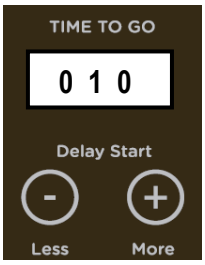
d 00, Last User Warning

The Last User Warning is displayed as a number in the LED display. Use the chart in the *User Warnings* section to identify the last user warning.

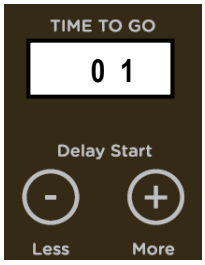
d 01: Last User Warning Cycle Count

The cycle count at which the last user warning occurred is displayed via the screen which will display the 100's, 10's & 1's when all 3 segments are on and the 10,000's & 1,000's when only 2 segments are on with the displayed output toggling between the 2 screens every 2 seconds.

E.g. For a cycle count of 1010 cycles



2 second later



Represent 100's, 10's & 1's. & 10,000's & 1,000's =01,010 cycles

d 02: Last User Warning Wash Cycle Position

The Wash Cycle position of the last user warning is displayed via the screen

Output Displayed on Screen	Cycle Position
00 01 02 03	Agitation
04 05	Rinse
06	Spin

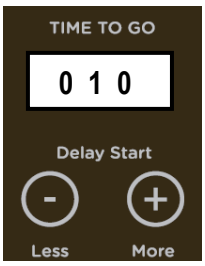
d 03: Fault Code of Last Fault (if within the last 8 Wash Cycles)

Sometimes referred to as the detailed fault code. The fault data is output via the display this will relate to a fault code as detailed in the *Fault Codes* section. If **000** is displayed then there has been no fault codes occur in the last 8 cycles.

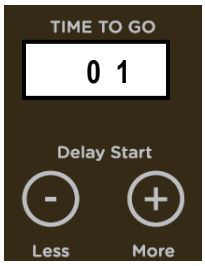
d 04: Cycle Count at Last Fault

The cycle count at which the last fault occurred is displayed via the screen which will display the 100's, 10's & 1's when all 3 segments are on and the 10,000's & 1,000's when only 2 segments are on with the displayed output toggling between the 2 screens every 2 seconds.

E.g. For a cycle count of 1010 cycles



2 second later



Represent 100's, 10's & 1's. & 10,000's & 1,000's =01,010 cycles

d 05: Cycle Position at Last Fault

The Wash Cycle position of the last fault is displayed via the screen.

Output Displayed on Screen	Cycle Position
00 01 02 03	Agitation
04 05	Rinse
06	Spin

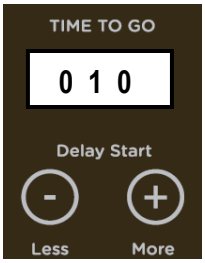
d 06: Water Temperature (Degrees C)

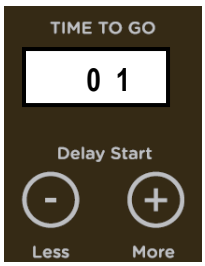
The Wash Temperature at the thermistor in ^{O}C is displayed via the screen which is multiplied by 2

d 07: Cycle Count

The total number of Wash Cycles is displayed via the screen which will display the 100's, 10's & 1's when all 3 segments are on and the 10,000's & 1,000's when only 2 segments are on with the displayed output toggling between the 2 screens every 2 seconds.

E.g. For a cycle count of 1010 cycles



2 second later


Represent 100's, 10's & 1's. & 10,000's & 1,000's =01,010 cycles

Note: The wash cycle count is only incremented at the end of the spin cycle.

d 08: Bowl Speed (RPM)

The current bowl speed displayed in (RPM) via the screen with the thousands digit ignored.
E.g. for fast spin of 1,009rpm the screen will display 009 leaving out the 1,000's.

Medium spin of 660rpm will display as 660 and slow spin of 330rpm display as 330.

d 09: Water Level

The current water level is displayed in millimetres via the screen.

d 10: Bowl Float

The level at which the bowl floated is displayed in millimetres

d 11: Fill Level

The target fill water level displayed in millimetres.

d 19: Pump Speed

The pump speed is displayed in (RPM) via the display and must be multiplied by 10.

d 20: The High Voltage DC

This will display in the screen the actual high voltage DC rail in the motor controller

d 21: Display software Version

Major display software version number

d 22: Display software Version

Minor display software version number

d 24: Motor Controller software Version

Major motor controller software version number

d 25: Motor Controller software Version

EEPROM common map version number

Water Valve Tests

Hot Valve

Select the **"Regular"**  cycle then press the **Wash Temp** button to activate the hot valve. To deactivate the hot valve, press the **Wash Temp** button again.

Cold Valve

Select the **"Regular"**  cycle then press the **Spin** button to activate the cold valve. To deactivate the cold valve, press the **Spin** button again.

Detergent Valve (C/S only)

Select the **"Regular"**  cycle then press the **Options** button to activate the detergent valve. To deactivate the detergent valve, press the **Options** button again.

Fabric Softener Valve (C/S only)

Select the **"Heavy"**  cycle then press the **Wash Temp** button to activate the fabric softener valve, ensure that the Softener is over filled to create the siphoning action that empties the dispenser. To deactivate the fabric softener valve, press the **Wash Temp** button again.

Wash Boost / Bleach Valve (C/S only)

Select the **"Heavy"**  cycle then press the **Spin** button to activate the wash boost / bleach valve, ensure that the Wash Boost / Bleach is over filled to create the siphoning action that empties the dispenser. To deactivate the wash boost / bleach valve, press the **Spin** button again.

SmartPump Testing

Drain

Select the "Hand Wash / Delicate"  cycle then press the **Wash Temp** button to activate the SmartPump in drain mode. To deactivate the SmartPump, press the **Wash Temp** button again.

Recirc

The recirc can be activated while in diagnostics, fill the inner bowl with enough water to float it off the spline drive, once the bowl is floating turn off the water valves and activate the pump in the recirc mode.

Select the **"**Hand Wash / Delicate**"**  cycle then press the **Spin** button to activate the SmartPump in recirc mode. To deactivate the SmartPump, press the **Spin** button again.

Recycle, Restart & Hot Bowl Flag

Hot Bowl flag

If the machine has been filled utilising the hot water valve (i.e. warm or hot fill) and has not had a cold rinse, the electronics will not allow the machine to spin up too a fast spin speed. It will only allow the spin speed to reach 670 RPM.

To remove the Hot Bowl flag, Select the **"Heavy"**  cycle and ensure the Hot Bowl flag is activated, indicated by the Softener (C/S) or Soak (W/S) LED being on, touch the **Options** button to unset the flag (LED off). Alternatively this flag can also be removed by putting the machine through a complete final rinse.

Restart Feature CleanSmart

The 685 CleanSmart™ leaves the factory with the **RESTART** set to ON, which is indicated in diagnostics mode by selecting the **"Sheets"**  cycle and ensuring that the No Spin LED is on.

To deactivate the **RESTART** feature, touch the **SPIN** button which will turn the No Spin LED off.

When servicing the machine, it is more convenient to deactivate the RESTART feature. This will allow any fault in the system to show up immediately it occurs.

With the RESTART feature on: (Factory Default setting)

1. If a fault occurs in the machine, the diagnostic system will detect it. However, instead of displaying a fault code immediately, the machine will try to recover.
2. If the fault was only of a temporary nature, the machine will continue and finish the cycle.
3. If there is a continuous fault the machine will try to RESTART a number of times. This process could take up to 8 minutes depending on the

type of fault. After this, if the machine still cannot restart, the fault code is displayed and the machine will beep continuously. The number of retries will depend on the fault that it has detected, however the maximum number or retries for any one fault is 32 times.

NOTE - This feature is designed as a service aid only and should be left ON in the customer's home. To return to normal operation, and to reset the RESTART feature to the factory setting, switch the machine off at the wall or disconnect from the mains supply.

To identify that the RESTART feature has been activated, refer to the Restart / Recycle table.

Recycle Feature CleanSmart

At the end of servicing, the machine may require an extended test where the machine can be left to complete a number of wash cycles. By turning on the **RECYCLE** feature, the machine will continuously repeat the wash cycle until the **RECYCLE** feature is turned off.

This is indicated in diagnostics mode by selecting the **"Sheets"**  cycle and ensuring that the Cold Wash Temp LED is off.

To toggle this feature touch the **WASH TEMP** button this will turn the Cold Wash Temp LED on or off.

NOTE - This feature is designed as a service aid only and should be OFF, in the customer's home. To return to normal operation, and to return the recycle feature to the factory setting, switch the machine off at the wall or disconnect from the mains supply.

To identify that the RECYCLE feature has been activated, refer to the Restart / Recycle table.

Restart Feature WashSmart

The 685 WashSmart™ leaves the factory with the **RESTART** set to ON, which is indicated in diagnostic mode by selecting the **"Easy Iron"**  cycle and ensuring that the No Spin LED, is on.

To deactivate the **RESTART** feature, touch the "**Spin Speed"** button which will turn the No spin LED off.

When servicing the machine, it is more convenient to deactivate the RESTART feature. This will allow any fault in the system to show up immediately it occurs.

With the RESTART feature on: (Factory Default setting)

1. If a fault occurs in the machine, the diagnostic system will detect it. However, instead of displaying a fault code immediately, the machine will try to recover.
2. If the fault was only of a temporary nature, the machine will continue and finish the cycle.
3. If there is a continuous fault the machine will try to RESTART a number of times. This process could take up to 8 minutes depending on the type of fault. After this, if the machine still cannot restart, the fault code is displayed and the machine will beep continuously. The number of retries will depend on the fault that it has detected, however the maximum number or retries for any one fault is 32 times.

NOTE - This feature is designed as a service aid only and should be left ON in the customer's home. To return to normal operation, and to reset the RESTART feature to the factory setting, switch the machine off at the wall or disconnect from the mains supply.

To identify that the RESTART feature has been activated, refer to the Restart / Recycle table.

Recycle Feature WashSmart

At the end of servicing, the 685 WashSmart™ may require an extended test where the machine can be left to complete a number of wash cycles. By turning the **RECYCLE** feature on, the machine will continuously repeat the wash cycle until the **RECYCLE** feature is turned off.

This is indicated in diagnostics mode by selecting the **"Easy Iron"**  cycle and ensuring that the Cold Wash Temp LED is off.

To toggle this feature touch the "**Wash Temp"** button this will turn the Cold Wash Temp LED on or off.

NOTE - This feature is designed as a service aid only and should be OFF, in the customer's home. To return to normal operation, and to return the recycle feature to the factory setting, switch the machine off at the wall or disconnect from the mains supply.

To identify that the RECYCLE feature has been activated, refer to the Restart / Recycle table.

Restart / Recycle Table

The 685 washer uses the “Wash Temp Cold” LED and the “No Spin” LED to indicate the Status of the Restart and Recycle features.
The table below explains the state the machine is in when the machine is powered off at the console but on at the mains supply.

LEDs: Off (Factory Default)	Restart on
	Recycle off
Wash Temp & Spin LED: Flashing.	Restart off
	Recycle on
Wash Temp LED: Flashing.	Restart on
	Recycle on
Spin LED: Flashing	Restart off
	Recycle off

Restart / Recycle Features Permanently Programed

It is possible for the Restart Feature to be disabled, or the Recycle Feature to be enabled, or a combination of both to be permanently programmed into the memory of the electronics so that in the event of a power cut the electronics will remember the setting.

The factory settings are:

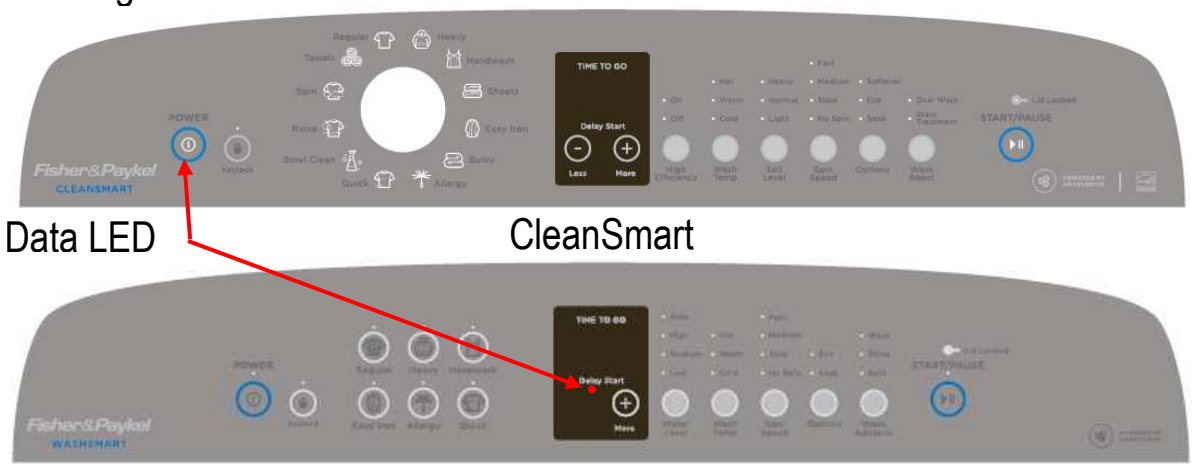
- Restart is enabled (No Spin LED on)
- Recycle is disabled (Cold Wash Temp LED off)

If a machine is encountered with the Restart/Recycle features not set to the factory defaults, the machine must be re-programmed using following steps;

1. Enter **DIAGNOSTIC MODE**; turn the power on at the power point and on at the console. Press and hold the **KEYLOCK** and **WASH TEMP** buttons for at least 3 seconds.
2. Select Sheets Cycle (CleanSmart) or Easy Iron cycle (WashSmart) and reset the restart and recycle to their default settings.
3. To save the settings to the EEPROM touch the **Options** Button

Data Download

To activate the data download, enter the diagnostic mode; turn the power on at the power point and on at the console. Press and hold the **KEYLOCK** and **WASHTEMP** buttons for at least 3 seconds.
Then press the **START/PAUSE** button. The **POWER** button will be on and flickering for the CleanSmart and the **DELAY START** Led will be on and flickering for the WashSmart.



Place the download pen over the LED and follow the instructions supplied with the data download program.

Fault Codes

1. Motor Control Module Fault

The Motor Control Module has encountered an error when writing to an EEPROM address.

Primary Source: Motor Control Module.
Action: Replace Motor Control Module.

9. Size Error

The Motor Control Module has found a fault with the size setting.

Primary Source: Motor Control Module.
Action: Replace Motor Control Module.

10. Temperature Sensor (Thermistor) Error

The temperature sensor may be open circuit.

Primary Source: Thermistor
Secondary Source: Motor Control Module
Action:
1. Check the connection of the thermistor to the Motor Control Module.
2. Check resistance of temperature sensor. Resistance should be 10kΩ @ 25°C or 12.5kΩ @ 20°C. Replace if faulty.
3. Replace Motor Control Module.

12. Flood Protection Error

The Motor Control Module has detected the water level to be above the flood level and tried to pump the excess water out. After pumping for 30 seconds, the pump has been unable to lower the water level below the flood level. The water valves may have stuck on and are letting water in at a flow rate that is higher than the pump can handle, or the pump may be blocked and cannot drain the excess water. Note: Under extremely high flow rate conditions the machine may overfill during the "top-up" routine in agitate.

Primary Source: Water Valves.
Action: If the water valves are on continuously, check that the water valves turn off mechanically, by removing power to the machine.
Secondary Source: Pump system.
Action: Check the pump for blockages and drain hose for correct height and kinking
Tertiary Source: Motor Control Module.
Action: If water valves are being driven on electrically, replace Motor Control Module.

21 Water Valve Over Current

The Motor Control Module has detected that the water valve circuit is drawing to high a current.

Primary Source: Water valves.
Action: Check that the resistance of the water valves are 61-64Ω @ 20°C.
Secondary Source: Motor Control Module
Action: Replace the Motor Control module.

26. Detergent Valve Fault

The Motor Controller module has detected that the detergent valve (purple clip) is faulty. It determines this by measuring voltages from the valve diagnostic circuit. The most likely cause is that the valve harness has not been connected correctly or the valve is open circuit.

Primary Source: Wiring.
Action: Check the valve harness is correctly fastened to the valve or the pins are not bent backwards.
Secondary Source: Detergent Valve.
Action: Check the valve coil is not faulty (i.e. not open circuit – See 1.8).
Tertiary Source: Motor Controller module.
Action: Replace the Motor Controller module.

27. Fabric Softener Valve Fault

The Motor Controller module has detected that the fabric softener valve (yellow clip) is faulty. It determines this by measuring voltages from the valve diagnostic circuit. The most likely cause is that the valve harnesses has not been connected correctly or the valve is open circuit.

Primary Source: Wiring.
Action: Check the valve harness is correctly fastened to the valve or the pins are not bent backwards.
Secondary Source: Fabric Softener Valve.
Action: Check the valve coil is not faulty (i.e. not open circuit – See 1.8).
Tertiary Source: Motor Controller module.
Action: Replace the Motor Controller module.

36. Water Leak Fault

The Motor Control Module has needed to top up the water level more than 4 times during agitate. This is excessive, as normally only one or two top ups are required to replace the air that has escaped from a full load during agitate. The most likely cause is that the machine is siphoning. The other alternative is that the machine has developed a leak.

Primary Source: Pump System.
Action
1) Check the height of the drain hose outlet Minimum 850mm, maximum 1200mm.
2) Check that the hose guide is fitted and check that the hose does not protrude more than 20mm beyond the guide.

Secondary Source: Mechanical.
Action:
1) Check the pressure tube connections on the outer bowl and Motor Control Module.
2) Check that the drive shaft seal and the pump housing seal have not developed a leak.

Tertiary Source: Motor Control Module.
Action: Replace Motor Control Module.

37. No change in the water level (Pump Blocked Error)

While draining, the water level reading from the pressure sensor has not changed for over 3 minutes. There are four likely reasons for this fault.

1) The drain hose or the pressure switch hose has been squashed or kinked and the pump out rate has been dramatically reduced.
2) The pump is partially or fully blocked.
3) The pump is not operating due to Motor Control Module, wiring or pump failure. This fault could also appear if the machine is pumping to an unusually high head of drain hose or into an extended length of drain hose.
4) A diverter valve fault or blockage, water level is not altering as the diverter is stuck in the recirculation mode, giving the module the appearance the pump is not lowering the water level.

Primary Source: Pump System.
Action:
1) Check that the drain hose has not been kinked.
2) Check the length of the drain hose and try to reduce the length if excessively long. A 1 metre extension hose of the same diameter fitted to the existing drain hose is the maximum allowable length.
3) Check for open circuit windings in the pump. (***Note: Pumps are fitted with a thermal cut-out, which will reset on cooling.)***

4) If the bowl is empty of water, remove the pump from the pump housing and check that it is not blocked. Also check the drain hose is not blocked.
5) If the bowl contains water, then service the pump from the top of the machine by removing the top deck and inner bowl. Bail out the water, remove the pump cap and hood and clear the restriction.

Secondary Source: Wiring.
Action:
1) Check the pump harness is connected correctly to the pump.
2) Check continuity of the pump harness.

Tertiary Source: Motor Control Module.
Action: Activate the pump by operating the machine in spin mode. Check the pump is rotating. If it is not operating and the Primary and Secondary checks have been performed, then replace the Motor Control Module.

38. Pressure Sensor Fault

The Motor Control Module has detected and recorded an empty water level while agitating. The water level must have been greater than empty for the machine to start agitating initially.

Primary Source: Mechanical.
Action: Check the pressure tube is attached and has not been cut.
Secondary Source: Motor Control Module.
Action: Replace the Motor Control Module, if the pressure tube shows no sign of being faulty.

39. Pressure Tube Fault

The Motor Control Module has detected a fault with the pressure tube.

Primary Source: Mechanical.
Action: Check that the pressure tube is not blocked with water or dirt, is not kinked and it attached securely.
Secondary Source: Motor Control Module pressure sensor.
Action: Replace the Motor Control Module.

40. Bowl Dis-engage Fault

While carrying out a bowl check, the Motor Control Module has found that the bowl is not engaged even though the pressure sensor indicates that the bowl is empty. The Motor Control Module continues to check for 2 minutes, after which time it displays this fault. The first two areas to check are the clutch and the pressure tube. If these two appear correct, then the fault could be in the pressure sensor in the Motor Control Module.

Primary Source: Mechanical.
Action:
1) Check that there are no clothes or other foreign objects preventing the clutch from re-engaging. Excessive suds can stop the bowl rotating.
2) If the machine is empty of water, carry out a clutch disassembly procedure and check the spline drive.
3) Next check that the pressure tube has not come off and that it is not kinked.

Secondary Source: Motor Control Module.
Action: Replace Motor Control Module.

41. Temperature Sensor Fault (Thermistor)

The temperature sensor is measuring temperatures above 110°C. This fault is most likely due to a short circuit in the sensor line.

Primary Source: Temperature Sensor (Thermistor).
Action:
1) Check the connection from the thermistor the Motor Control Module, especially check for a short circuit.

2) Check the resistance of the thermistor. Resistance should be 10kΩ @ 25°C or 12.5kΩ @ 20°C. Replace if faulty.
3) Replace the Motor Control Module.

45. Display Memory Check Fault

On power up, the display has checked its memory against a known reference and found differences.
Primary Source: Display Module.
Action: Replace Display Module.

46. Display Memory EEPROM Check

The Display has detected a problem with its internal EEPROM.
Primary Source: Display Module.
Action: Replace Display Module.

49. Cold Valve or Cold Valve & Hot Valve Faulty

The Motor Control Module has measured a voltage from the valve diagnostic circuit (or both the valve and pump diagnostic circuit) that indicates that the cold valve or both the hot and cold valves are open circuit. The most likely cause is that the valve harness has not been connected correctly or the valve(s) is open circuit.

It could also indicate that there is a problem with the pump or pump system. It also can be caused by a failure of the Motor Control Module pump drive while the pump is running. This will manifest as fault code 249 which can change to fault code 49 when power to the machine is removed then reapplied.
Primary Source: Wiring.
Action: Check the valve harnesses are correctly fastened to the valves and the Motor Control Module, or the pins are not bent backwards. If possible, test the harness for continuity between the valve end of the harness and the Motor Control Module end of the harness.
Check that the lid lock harness has not chaffed and shorted to the wrapper.

Secondary Source: Water Valves.
Action: Measure the resistance of the Hot and Cold valve coils.

Tertiary Source Water Valves: Motor Control Module.
Action: Replace the Motor Control Module.

Tertiary Source: Pump System.
Action: Measure the resistances of the pump stator windings from the controller end of the pump harness. The resistance between each pair of terminals should measure approximately 16.2Ω. If an open circuit is detected, the reading should then be taken directly from the pump stator, as the fault may be in the harness. Carry out any corrective action as and if required.
If the reading is correct or otherwise, follow procedures for Fault Code 249, as a problem in the pump or pump system such as a blockage or restriction may have contributed to the failure.
Note: If a fault has been found in the pump system, after correcting the fault, it is also likely that the Motor Control Module will need to be replaced.

Quaternary Source Pump System: Motor Control Module.
Action: Replace the Motor Control Module.

50. Hot Valve Coil Faulty

The Motor Control Module has measured a voltage from the valve diagnostic circuit that indicates the hot valve is faulty. The most likely cause is that the valve harness has not been connected correctly or the valve is open circuit. See fault 49 for service procedure.

56. Bowl Check No Valid Fault

While carrying out a bowl check, the machine has not been able to determine a valid bowl status and so the Display flags this fault. This fault differs from fault code 40 in that a valid bowl status could not be determined.

Primary Source: Loading.

Action: Remove items until the remaining ones can move freely, or rearrange the load so that the clothes are evenly distributed around the bowl, or select a higher water level. If the load was to one side of the bowl or too heavy, it can be possible for the agitator to bind in one direction when trying to sense bowl float.

Secondary Source: Mechanical.

Action:
1. Check the machine is not siphoning.
2. Check that there are no clothes or other foreign objects preventing the clutch from re-engaging, and that there aren't any defects with the clutch mechanism.
3. Check that the pressure tube has not come off and that it is not kinked.

Tertiary Source: Motor Control Module.

Action: Replace the Motor Control Module.

57. Brown Out During Display EEPROM Write Fault

The Display has requested the Motor Control Module to perform an EEPROM write. Prior to writing, the Motor Control Module has tested the 15 Volt supply and found that it is below the safety level for writing EEPROM and has reported this to the Display. This may be due to transients at the time of writing or due to a faulty Motor Control Module.

Primary Source: Motor Control Module.

Action: Replace Motor Control Module.

58. Pressure Transducer at Maximum Adjustment

When the pause or delay start is pressed to start the SmartDrive®, the Display Module has checked the memory and found the count greater than expected.

Primary Source: Motor Control Module.

Action: Replace Motor Control Module

60. Motor Control Memory Check Fault

On power up, the Motor Control Module has checked its memory against a known reference and found differences.

Primary Source: Motor Control Module.

Action: Replace Motor Control Module.

68. Pressure Transducer Error – Count Too High

The pressure transducer has measured a water level far above what the machine should physically be able to measure. This suggests that the pressure sensor has been disconnected from the motor controller, damaged or not actually placed on the PCB.

Primary Source: Motor Control Module.

Action: Replace Motor Control Module.

103. Slave Display Comms Time out

104. See Fault Code 106

105. Comms Error Time Out

These faults are reported when the Display Module detects an error in the communications between the Display Module and the Motor Control Module. Can also occur when the display is changed with the power still on.

Primary Source: Display Module.
Action: Replace Display Module.
Secondary Source: Motor Control Module.
Action: Replace Motor Control Module.

106. Display Module to Motor Control Module Communications Error

These faults are reported when the Display Module detects an error in the communications between the Display Module and the Motor Control Module.

Primary Source: Display Module.
Action: Replace Display Module.
Secondary Source: Motor Control Module.
Action: Replace Motor Control Module.

107. Motor Control Module Reset Error

The Display Module has detected that the Motor Control Module has reset when it should not have. This can be due to a Motor Control Module supply disturbance or microprocessor failure.

Primary Source: Motor Control Module.
Action: Replace Motor Control Module.

108. Comms CRC Error – See Fault Code 106

112. Motor Current Sense Too High

The motor current sense circuit is faulty.

Primary source: Motor Control Module.
Action: Replace Motor Control Module.

114 Smart Pump Current Sense Fault

The pump current sense circuit within the motor control module is faulty.

Primary source: Motor Control Module.
Action: Replace Motor Control Module.

133. Repetitive Current Trip

The Motor Control Module has detected excess current in the motor or electronic switches. This fault is a more severe occurrence than fault code 132 but has identical fault sources and fault service procedure.

136. Motor Stall

The Motor Control Module has been unable to start the motor.

Primary Source: Wiring.
Action: Measure/check the motor harness, connectors and motor for discontinuity. This can be done by taking a resistance measurement between phases of the motor harness at the Motor Control Module end. Nominal resistance should be around 39Ω.
Secondary Source: Motor.
Action:
1) Check free rotation of the agitator and bowl by rotating by hand. Bearings and seals may be seized.

Tertiary Source: Motor Control Module.
Action: If the primary and secondary checks pass inspection, then replace the Motor Control Module.

137 Motor loss of a Phase

The Motor Control Module has detected the loss of one of the phases of the motor. Possible causes of this fault are: Faulty motor harness, an open circuit winding of motor or faulty motor controller.

Primary Source: Wiring

Action: Measure/check the motor harness, connectors and motor for continuity. This can be done by taking a resistance measurement between phases of the motor harness at the Motor Control Module end. Nominal resistance should be around 39Ω.

Secondary Source: Motor.

Action: Remove Stator and measure / check the resistance of each winding which is approximately 19.5Ω.

Tertiary Source: Motor Control Module.

Action: If the primary and secondary checks pass inspection, then replace the Motor Control Module.

160. Bowl Engaged In Agitate

The bowl has re-engaged itself during agitate.

Primary Source: Mechanical.

Action:
1) Check that the rotating bowl assembly is not jammed to the agitator with any foreign object that may be caught under the agitator skirt.
2) Check that the clutch teeth are not locked together with dirt, lint, etc.
3) Make sure the bowl is not overloaded with too many clothes.
4) If none of the above appears to be at fault, then check the air bell at the bottom of the inner bowl for leaks.

Secondary Source: Installation (drain) set up

Action: Check that the drain hose is fitted into the drain caddy and extends no more than 20 mm from the end. Check if fitted to a stand pipe that the drain hose is not pushed down to far.

Tertiary Source: Motor Control Module.

Action: If the machine is empty of water at fault, it is possible that the pump circuit is faulty and has caused a pump out during wash. This would cause the bowl to re-engage during agitate and the Motor Control Module to display this fault. Replace Motor Control Module.

220. EEPROM Model Map Not Programmed

On power up, the Motor Control Module has detected a fault in its memory.

Primary Fault: Motor Control Module.

Action: Change Motor Control Module.

221 Motor Control Module Fault

The motor control has encountered a RAM check error

Primary Fault: Motor Control Module.

Action: Change Motor Control Module.

222 Motor Control Module Fault

The motor control has encountered a Stack error

Primary Fault: Motor Control Module.

Action: Change Motor Control Module.

223 Motor Control Module Fault

The motor control has encountered a program counter error

Primary Fault: Motor Control Module.

Action: Change Motor Control Module.

224 Motor Control Module Fault

The motor control has encountered a peripheral error
Primary Fault: Motor Control Module.
Action: Change Motor Control Module.

225 Motor Control Module Fault

The motor control has encountered a clock error
Primary Fault: Motor Control Module.
Action: Change Motor Control Module.

226 MarchX Ram Check Error

The motor control has encountered a RAM error
Primary Fault: Motor Control Module.
Action: Change Motor Control Module.

230. EEPROM Value out of Range

Wrong version detected
Primary Fault: Motor Control Module is the wrong version.
Action: Change Motor Control Module.

232. COMMS Timeout 5 Sec

Either the Display or Motor Control Module has not responded in time.
Primary Fault: Display Module fault.
Action: Replace Display Module.
Secondary Fault: Motor Control Module fault.
Action: Replace Motor Control Module.

233. EEPROM Read Error

Problem in reading the EEPROM data, coming from the Motor Control Module
Primary Fault: Motor Control Module fault.
Action: Replace Motor Control Module.

234. Lid Lock Open Circuit

Check harness to Lid Lock, the connections at the Motor Control Module and lid lock ends.
Primary Fault: Connectors on the harness at either end could be at fault.
Action: Replace Harness.
Secondary Source: Lid lock has failed to be activated.
Action: Replace Lid Lock Assembly.
Tertiary Source: Motor Control Module has not responded to the lid lock being activated.
Action: Check the lid has a tang and is fitted correctly to activate the lid lock. If this is all in order, the Motor Controller must be faulty and needs replacing.

235. Lid Lock Short Circuit

Lid Lock fault, not activated when instructed to by the Motor Control Module.
Primary Fault: Lid Lock mechanism has jammed or failed.
Action: Check resistance across the connections, this should be 63 ohms +/- 10% @ 20□C. If faulty, replace the Lid Lock assembly.

236. Incompatible EEPROM Version

Failed to start with fault being immediately displayed
Primary Fault: Motor Control Module is wrong one.
Action: Fit correct Motor Control Module.

237. Temperature Sensor Error

The electronics have picked up a continuity problem, the same as fault code 10.

Primary Fault: The sensor has failed either in the harness or the connection to the thermistor.
Action: Replace the thermistor (temperature sensor).
Secondary Source: Motor Control module has failed to read the temperature. Check connections.
Action: Replace Motor Control Module if the connections look fine and the fault still occurs.

238. Lid Lock Open Circuit

Check Harness to Lid Lock and connections at the Motor Control Module and lid lock ends.

Primary Fault: Connector to the harness, either end could be at fault.
Action: Replace Harness.
Secondary Source: Lid Lock has failed to be activated.
Action: Replace Lid Lock.
Tertiary Source: Motor Control Module has not responded to the Lid Lock being activated.
Action: Check the lid has a tang and is fitted correctly to activate the Lid Lock. If this is all in order, the Motor Control Module must be at fault and needs to be replaced.

239. Lid Lock Short Circuit

Check Harness to Lid Lock and connections at the Motor Control Module and lid lock ends.

Primary Fault: Connector to the harness, either end could be at fault.
Action: Replace Harness.
Secondary Source: Lid Lock has failed activated.
Action: Replace Lid Lock.
Tertiary Source: Motor Control Module has not responded to the Lid Lock being activated.
Action: Check the lid has a tang and is fitted correctly to activate the Lid Lock. If this is all in order, the Motor Control Module must be at fault and needs to be replaced.

241. Function Time Out

A fault has occurred with the Display Module.

Primary Fault: Display Module has failed.
Action: Replace Display Module.
Secondary Fault: Motor Control Module has failed.
Action: Replace Motor Control Module.

243. Stepper Test Failure

The Motor Control Module has attempted a motor step test and found the motor has not stepped to the correct position.

Primary Source: Wiring.
Action: Check the continuity of the Motor Harness and that the connectors are correctly applied to the Motor and Motor Control Module.
Secondary Source: Motor.
Action: Check continuity of motor phases. Check the bridge terminal on the stator is not open circuit or burnt. Replace Stator.
Tertiary Source: Motor Control module.
Action: Replace the Motor Control Module.

245. Smart Pump Stall

This fault is normally as a result of the pump stalling during its normal operation.

Primary Source: Pump stator winding open circuit.
Action: Check the resistance of the pump stator. Resistance per Phase: 8.1Ω +/- 10% (16.2Ω +/- 10% across any two phases).

Secondary Source: Pump System.
Action:
1. Check that the drain hose has not been kinked.
2. Check the length of the drain hose. A 1 metre extension hose of the same diameter fitted to the existing drain hose is the maximum allowable length.
3. Check that the machine is not pumping to a head that exceeds the pump's limits (2.4 meters is maximum head height).
4. Remove the inner bowl and check that the pump hood hasn't been fitted around the wrong way.
5. Check for lint streaming from the pump hood that may be blocking the cap inlet.
6. Remove the pump hood and cap. Check for lint, grit and debris.
7. Check for free movement of the flapper and that the impeller hasn't come off the rotor.
8. Check for free movement of the flapper (replace if broken).
9. Check for lint and foreign objects in the ports of the pump housing.

Tertiary Source: Motor Control Module.
Action: Replace Motor Control Module.

246. Wash Boost / Bleach Valve Fault

The Motor Controller module has detected that the Bleach valve (red clip) is faulty. It determines this by measuring voltages from the valve diagnostic circuit. The most likely cause is that the valve harness has not been connected correctly or the valve is open circuit.

Primary Source: Wiring.
Action: Check the valve harness is correctly fastened to the valve or the pins are not bent backwards.

Secondary Source: Bleach Valve.
Action: Check the valve coil is not faulty (i.e. not open circuit – See 1.8).

Tertiary Source: Motor Controller module.
Action: Replace the Motor Controller module.

247. Smart pump Flapper Fault

The Motor Control Module has registered a drop in the water level during the recirculation phase of the wash cycle. Water is being drained instead of recycling. The most likely cause is that the flapper is stuck in the drain position.

Primary Source: Flapper valve.
Action: Check for free movement of the flapper valve (replace if broken or damaged).

248 SmartPump Top Up Fault

More than 6 attempts have been made to top-up the water level in the bowl during recirculation.

Primary Source: Poor Flapper Seal.
Action:
1. Clean any foreign objects out of the pump, concentrating especially on the flapper and drain/re-circulating port areas.
2. Remove the flapper to ensure no foreign objects exist below and around the flapper.
3. Check the flapper damage, especially the lip seals. If damaged, replace.

Secondary Source: Cap not tight, warped, damaged (worn).
Action:
1. Check that the hood/cap is tight. If loose and screws are difficult to tighten, foreign objects could be in the screw boss. Remove pump fully and inspect/ replace if in doubt.
2. Check the cap is not warped or it is not excessively worn in the area where it contacts the flapper. Replace the cap if warped or worn.

Tertiary Source: Damaged Pump Housing Port.

Action: Check that there is no excessive wear to the pump housing port caused by foreign objects. Replace pump if necessary.

Quaternary Source: Motor Control Module.

Action: Replace Motor Control Module.

249. SmartPump Timeout Fault (No change in water level)

While draining, the water level reading from the pressure sensor has not changed for 3 minutes. This fault will generally be caused by a problem with the pump system, from either a blockage or restriction in the pump system. This will also flag if the machine is By-Passing.

Primary Source: Pump System.

Action:

1. Check that the drain hose has not been kinked.
2. Check the length of the drain hose. A 1-metre extension hose of the same diameter fitted to the existing drain hose is the maximum allowable length.
3. Check that the machine is not pumping to a head that exceeds the pump's limits (2.4 meters is maximum head height).
4. Remove the inner bowl and check that the pump hood hasn't been fitted around the wrong way.
5. Check for lint streaming from the pump hood that may be blocking the cap inlet.
6. Remove the pump hood and cap. Check for lint, grit and debris.
7. Check for free movement of the flapper and that the impeller hasn't come off the rotor.
8. Check for free movement of the flapper (replace if broken).
9. Check for lint and foreign objects in the ports of the pump housing.

Secondary Source: Motor Control Module.

Action: Replace Motor Control Module.

250. SmartPump Loss of Sync

This fault is normally as a result of the pump not starting and is usually caused by an object that has got into the pump, and is either under or on top of the impeller, which is causing the motor to stall when trying to start.

Primary Source: Pump stator winding open circuit.

Action: Check the resistance of the pump stator. Resistance per Phase: 8.1Ω +/- 10% (16.2Ω +/- 10% phase to phase).

Secondary Source: Pump System.

Action:

1. Check that the drain hose has not been kinked.
2. Check the length of the drain hose. A 1 metre extension hose of the same diameter fitted to the existing drain hose is the maximum allowable length.
3. Check that the machine is not pumping to a head that exceeds the pump's limits (2.4 meters is maximum head height).
4. Remove the inner bowl and check that the pump hood hasn't been fitted around the wrong way.
5. Check for lint streaming from the pump hood that may be blocking the cap inlet.
6. Remove the pump hood and cap. Check for lint, grit and debris.
7. Check for free movement of the flapper and that the impeller hasn't come off the rotor.
8. Check for free movement of the flapper (replace if broken).
9. Check for lint and foreign objects in the ports of the pump housing.

Tertiary Source: Motor Control Module.

Action: Replace Motor Control Module.

252. Bridge Test Failure

The Motor Control Module has tested the motor bridge electronics and sensed current when there should not have been any.

Primary Fault: Motor Control Module
Action: Replace Motor Control Module

253 Smart Pump Over Current

The motor control Module has detected that the smart pump is drawing high current.

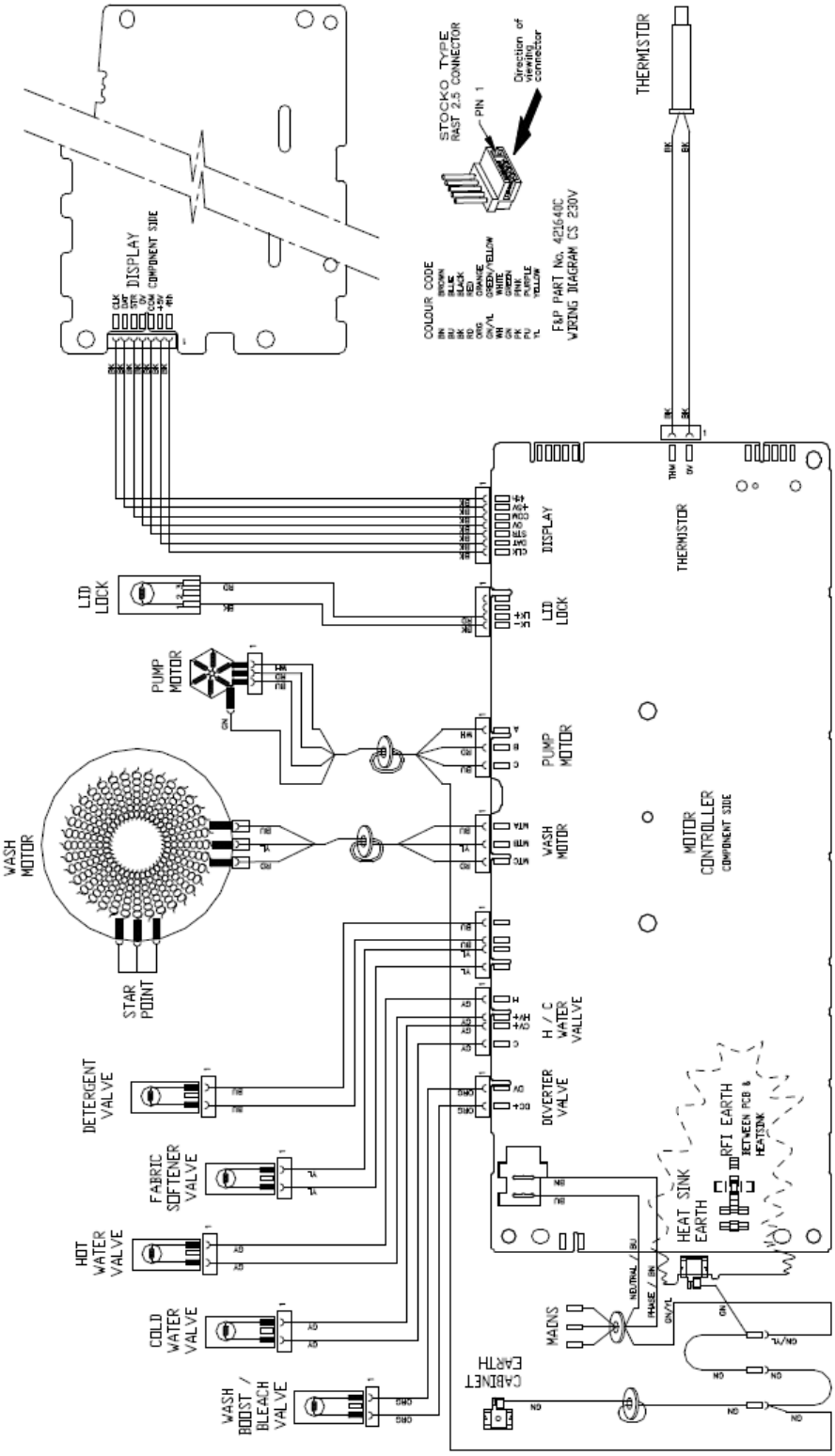
Primary Fault: Pump stator winding short circuited
Action: Check the resistance of the pump stator at the motor controller end of the harness, resistance per Phase: 8.1Ω +/- 10% (16.2Ω +/- 10% Phase to phase).
If faulty recheck the pump stator resistance at the Smart Pump. If resistance is correct replace harness assembly but if still faulty replace pump.

254 Motor Control Version to Old

The Motor Control Module software version is too old for the display to support.

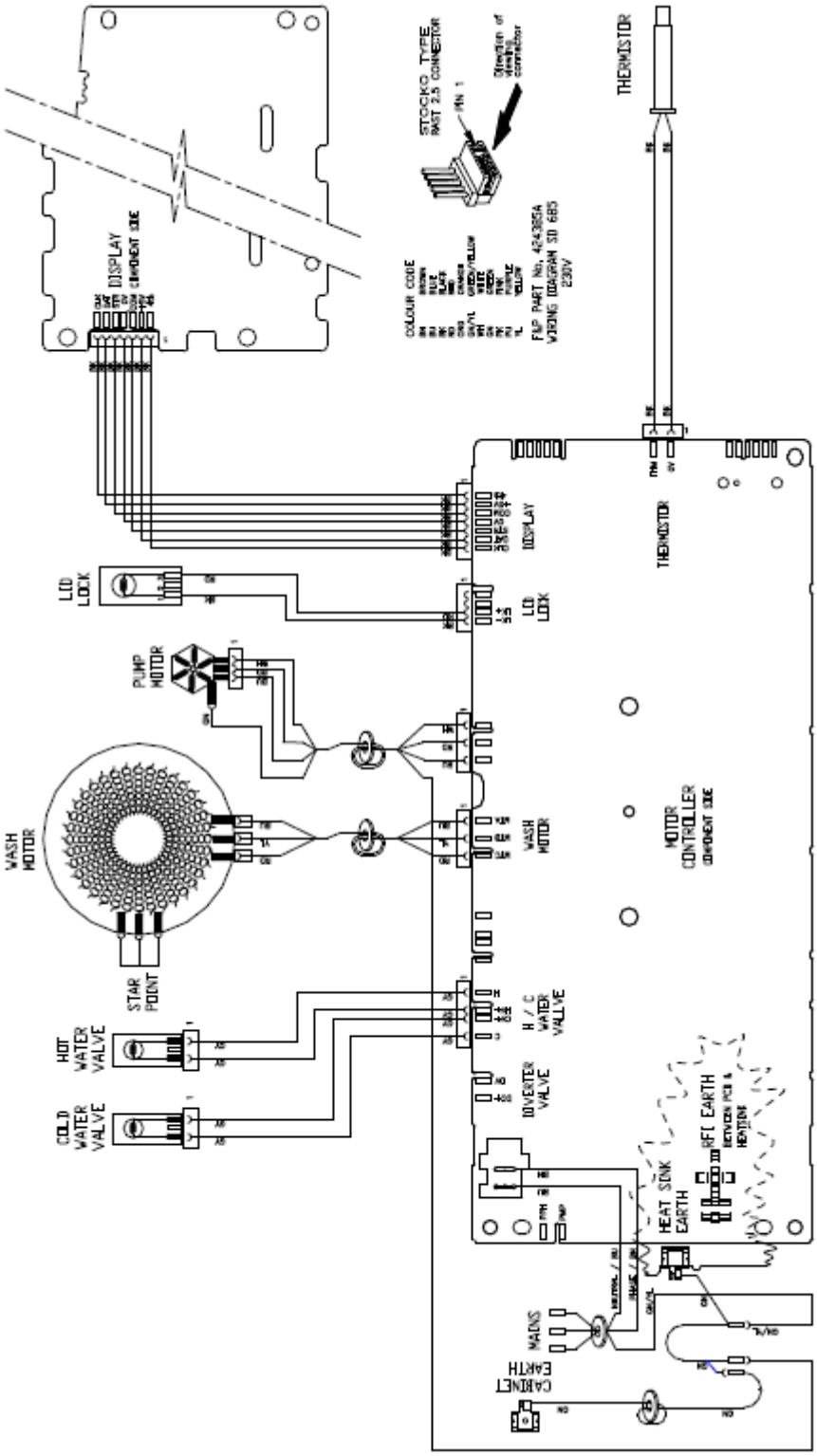
Primary Fault: Motor Control Module
Action: Replace Motor Control Module

Wiring Diagram CleanSmart



Resistance Table	
Water Valve	61Ω @ 20°C
SmartPump	8.1Ω
	16.2 Ω Phase to Phase
Lid Lock	63Ω +/- 10% @ 20°C
Thermistor	10KΩ @ 25°C
Stator	39Ω +/- 10% Phase to Phase

Wiring Diagram WashSmart



Resistance Table	
Water Valve	64Ω @ 20°C
SmartPump	8.1Ω
	16.2 Ω Phase to Phase
Lid Lock	63Ω +/- 10% @ 20°C
Thermistor	10KΩ @ 25°C
Stator	39Ω +/- 10% Phase to Phase

USER WARNINGS

There are a number of user warnings, which are generally caused by the user or poor installation. These warnings should be able to be corrected by the user.

The machine signals user warnings by displaying a warning in plain text. Where multiple words are displayed one word at a time with 1 second pause between changing from one word to the other along with a rippling set of 5 beeps which are repeated every 6 seconds. This is the same tone that is heard when the machine is first plugged into the mains power.

Most of this information is available to the user in the Use and Care manual.

Code		Description
01	No Taps	no tAP
02	Wash level Overloaded	too FUL
03	Out of Balance	out OF bAL
04	Suds Lock	Sud LOC
05	No Hot	no hot
06	No Cold	no CLd
07	Agitator Overloaded	too FUL
08	Lid Lock	Lid LOC
09	Lid Open	Lid OPn

The last user warning is also logged in diagnostics level d 00 which will be displayed as a number from 01 through 09,

01 No Taps (no water)

Possible causes:

1. The taps are not turned on.
2. The inlet hoses may be kinked.
3. The inlet hose filters at the tap end may be blocked.
4. The inlet valve filter screens may be blocked.
5. The flow rate of the supply water too slow. The product requires a minimum flow rate of 6 litres per minute.
6. The drain hose is too low or the drain hose pushed into the standpipe too far and the water is siphoning out of the machine.

02 Wash Level Overloaded (too full)

Possible causes:

1. The product is overloaded.
2. The user has selected the wrong water level for the load.
3. The inner bowl assembly is jammed to the agitator with a foreign object that may be caught under the agitator skirt.
4. The spline drive and driven teeth are locked together with dirt, detergent or lint.
5. The spline drive and driven teeth are damaged / broken.

03 Out of Balance

Possible causes that need to be checked in the following order

1. Even distribution of the load.
2. The feet have the rubber inserts fitted and the cabinet base is clear of the floor.
3. The machine is correctly installed, level front to rear & side to side and does not rock on the floor.
4. The bias spring is fitted between the top of the neck ring and the rear left hand suspension rod.
5. The suspension is not catching or bouncy. If so, replace all four-suspension rods.
6. The weight of the inner bowl. The balance ring and bowl base of the inner bowl contain water. The most accurate way is to check the weight of the inner bowl (Refer to the Inner Bowl Weight Section).
7. The holes in the inner bowl are not blocked and have been punched through.

04 Suds Lock

This warning is generated if the machine senses too much drag on the inner bowl.

Possible causes:

1. Too much detergent generally causes this. If so, dissolve the suds by flushing water through the machine and re-test.
2. The pump is partially blocked, or the drain hose is kinked.
3. A garment or foreign object is restricting the movement of the inner bowl.
4. The main bearings are tight.

05 Insufficient Hot Water (no hot)

Possible causes:

1. The hot water is not connected or the tap is turned off.
2. The flow rate is too low. The product requires a minimum flow rate of 6 litres per minute.
3. The hot water temperature is too low. The water temperature needs to be 60ºC for a hot wash.
4. The hot water inlet hose is connected to the cold water supply.
5. That there are kinks in the inlet hose.
6. The filter in the hot inlet hose at the tap end is blocked.
7. The filter screen in the hot inlet valve of the machine is blocked.
8. Thermistor resistance is out of range. Resistance is 10kΩ @ 25 ºC. Replace if well outside of this range.

Note: If the machine is set to controlled cold, hot water may be required to achieve the set temperature of 20 ºC.

06 Insufficient Cold Water (no cold)

Possible causes:

1. The cold water is not connected or the tap is turned off.
2. The flow rate is too low. The product requires a minimum flow rate of 6 litres per minute.
3. The cold water inlet hose is connected to the hot water supply.
4. That there are kinks in the inlet hoses.
5. The filter on the cold inlet hose at the tap end is blocked.
6. The filter screen in the cold inlet valve of the machine is blocked.
7. Thermistor resistance is out of range. Resistance is 10kΩ @ 25 ºC. Replace if well outside of this range.

07 Agitate Overload (too full)

Possible causes:

1. The product is overloaded.
2. The user has selected the wrong water level.
3. The inner bowl assembly is jammed to the agitator with a foreign object that may be caught under the agitator skirt.
4. The spline drive and driven teeth are locked together with dirt, detergent or lint.
5. The spline drive and driven teeth are damaged / broken.

08 Lid Lock (Failure)

This warning is generated if the electronics have detected that the lid lock has not closed.

1. The tang on the lid is bent or broken.
2. The lid-lock assembly has failed. If the lid is closed and the tang is ok, replace the lid-lock assembly.

09 Lid Open

This warning is generated if the lid has not been closed.

1. The tang on the lid is bent or broken.
2. The lid is open, close it and then press the start/pause button.
3. The lid-lock assembly has failed. If the lid is closed and the tang is ok, replace the lid-lock assembly.

CUSTOMISING

Nearly all the 685 washer options can be customised to the preferred settings of the user. E.g. if a user wants to program the machine to always have the Eco option selected or use a cold wash temperature you can program this permanently.

NB. Only options that are available for the cycle selected can be customised.

CleanSmart 685

1 Touch the POWER button to turn on the console.

2 Turn the dial to select the wash cycle you wish to customise.

3 Touch and hold the button of the option you want to customise, E.g. WASH TEMP for 3 seconds. You will hear 2 quick beeps and t he wash cycle icon will flash.

4 Select your preferred setting, and any other options you wish to customise for this cycle.

5 Touch the START / PAUSE button to store your customised cycle (a long beep will sound to confirm your changes have been saved).

Customising a wash cycle, e.g. customising the wash temperature for the REGULAR cycle

WashSmart 685

1 Touch the POWER button to turn on the console.
2 Touch and hold the button of the wash cycle you wish to customise for 3 seconds.
E.g. REGULAR for 3 seconds. You will hear a beep and the display will show “SEt” with the LED above the wash cycle button flashing.
3 Select your preferred setting, and any other options you wish to customise for this cycle.
4 Touch the button of the wash cycle you are customising again, E.g. REGULAR, to store your customised cycle (a long beep will sound to confirm the changes have been saved).

Customising a wash cycle, e.g. Regular cycle

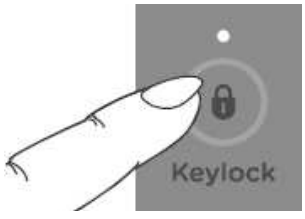
PRESET OPTIONS ADJUSTMENT

This is used to adjust the wash temp setting, the controlled cold setting, the out of balance recovery, the end of cycle beeps and to reset the washer to the factory defaults.
In this mode only 4 of the program cycles are selectable.

CleanSmart 685

To enter options adjustments mode,

1. Turn the machine on at the supply and off at the console.
2. Touch and hold the KEYLOCK and START/PAUSE buttons for 3 seconds. You will hear 3 quick beeps and the delay start LED will flash, indicating that you have entered the mode,
3. Use the program dial and buttons on the control panel to make your changes to the pre-set options.



4. After the necessary adjustments have been entered touch the power button to save.

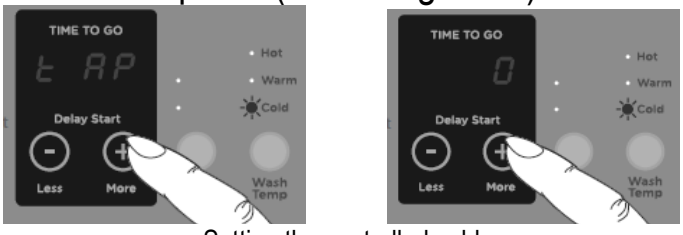
Wash Temperature Settings:

1 Enter Option Adjustment mode.
2 Select the **HEAVY** cycle
3 Select the wash temp you want to adjust e.g. WARM using the WASH TEMP button. The LED display will show the current setting
4 Touch the MORE or LESS button to increase or decrease the desired temperature.
Each increment is equal to approximately 0.5°C

Adjusting the temperature setting, e.g. increasing the WARM wash temperature

Controlled Cold Setting:

1 Enter Option Adjustment mode.
2 Select the **HEAVY** cycle
3 Select the cold wash temp using the WASH TEMP button.
5 The LED display shows the temperature adjustment. The default setting is “tAP”
4 Touch the MORE button until “**O**” is displayed which indicates that the cold temperature is set to 20°C. Each of the remaining settings approximately equals a 0.5°C temperature increase or decrease from this point. (Excluding “tAP”)



Setting the controlled cold

Out of Balance Recovery

1 Enter Option Adjustment mode.
2 Select the **HANDWASH** cycle
3 Touch the MORE button to turn AUTOMATIC RECOVERY on or off.

Out of balance recovery routine

End of Cycle Beeps:

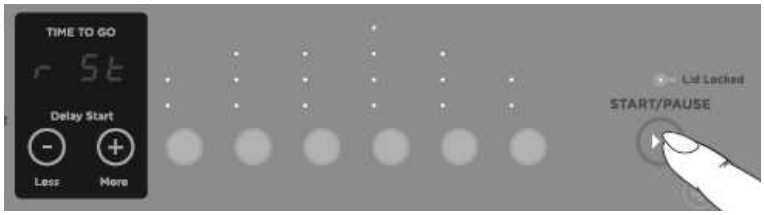
1 Enter Option Adjustment mode.
2 Select the **SHEETS** cycle
3 Touch the MORE button to increase the number of beeps or for no beeps to sound at the end of the cycle.

Modifying the number of beeps to signal the end of cycle

Factory Reset:

This resets any customisation and option settings back to the factory defaults

1 Enter Option Adjustment mode.
2 Select the **EASY IRON** cycle
3 The LED display will show "**rst**". Touch and hold the START/PAUSE button until the machine powers off to reset the washer.
To exit without resetting, touch the POWER button.



Changing the washer settings back to the factory default

WashSmart 685

To enter options adjustments mode,

1. Turn the machine on at the supply and off at the console.
2. Touch and hold the KEYLOCK and START/PAUSE buttons for 3 seconds. You will hear 3 quick beeps. The delay start LED will flash, indicating that you have entered the mode,
3. Use the buttons on the control panel to make your changes to the pre-set options.
4. After the necessary adjustments have been entered touch the power button to save.

Wash Temperature Settings:

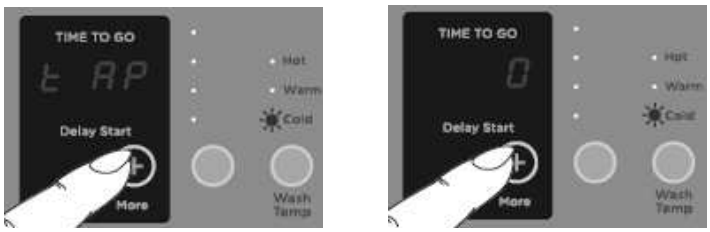
1 Enter Option Adjustment mode.
2 Select the **REGULAR** cycle
3 Select the wash temp you want to adjust e.g. WARM using the WASH TEMP button. The LED display will show the current setting
4 Touch the MORE button to increase or decrease the desired temperature (the temp scrolls around).
Each increment is equal to approximately 0.5°C

Adjusting the temperature setting, e.g. increasing the WARM wash temperature

Controlled Cold Setting:

1 Enter Option Adjustment mode.
2 Select the **REGULAR** cycle
3 Select the cold wash temp using the WASH TEMP button.
5 The LED display shows the temperature adjustment. The default setting is “tAP”
4 Touch the MORE button until “**0**” is displayed which indicates that the cold temperature is set to 20°C. Each of the remaining

settings equals approximately a 0.5°C temperature increase or decrease from this point. (excluding “tAP”)



Setting the controlled cold

Out of Balance Recovery

1 Enter Option Adjustment mode.

2 Select the **HEAVY** cycle

3 Touch the MORE button to turn AUTOMATIC RECOVERY “on” or “off”.

Out of balance recovery routine

End of Cycle Beeps:

1 Enter Option Adjustment mode.

2 Select the **EASY IRON** cycle

3 Touch the MORE button to increase the number of beeps or for no beeps to sound at the end of the cycle.

Modifying the number of beeps to signal the end of cycle

Factory Reset:

This resets any customisation and option settings back to the factory defaults

1 Enter Option Adjustment mode.

2 Select the **Allergy** cycle

3 The LED display will show "**rst**". Touch and hold the START/PAUSE button until the machine powers off to reset the washer.
To exit without resetting, touch the POWER button.

Changing the washer settings back to the factory default