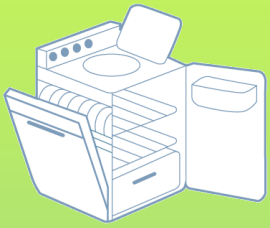


uk whitegoods

Fault Code Guide

Free Edition

Welcome to the UK Whitegoods Fault Code Guide

The book is intended to be a reference work giving as many fault codes and diagnostic procedures as is possible for the first time ever in one easy to use manual.

In this document we have collated much of the information that has been shared within the community that has formed on the UK Whitegoods website and, whilst we strive to ensure that the data contained in this book is as accurate as possible, because it is often gained in the field very often and not from the manufacturer's own published information, we cannot guarantee 100% accuracy in every instance.

Service tips, hints and shortcuts are provided in the main by field service engineers that have found easy ways to tackle known problems or easier ways to do a job etc. many of which we have gleaned from years of free technical advice in the web forums.

With this in mind please realise that this book is an great resource for all service engineers and we hope to build it over time even further, but we cannot be held liable for incorrect information.

We have taken the decision to make this publication freely available to all but we would ask that you remember this and that you use UK Whitegoods for spare parts, the Whitegoods Trade Association for finding an engineer if you need one and ISE if you fancy a good washing machine or dryer. Without these companies assistance this book would not be possible, we need support from you to keep the information available and update it as it is a very time consuming task.

We hope the book is useful and solves some of the problems that you encounter in the field.

Kenneth Watt

LED Symbols

As we all are most likely well aware, manufacturers use all sorts of different symbols and graphics to, basically, say the same thing. In many cases we have simplified this as well as a lot of the “gobble-de-gook” instructions provided and tried to present simple, clear instructions on how to read the faults or use the diagnostic routines.

So we have some simple graphics for the lit/unlit/flashing LEDs that we often find used as follows:

Lit LED, lamp or light

Unlit LED, lamp or light

Flashing LED, lamp or light

AEG

German made Lavamat 1997 on

These are only guides as the position of the timer indicator should also be noted if any of these codes are shown, but at least it should point you in the right direction.

C1 Not filling/ too slow fill

C2 Not pumping/too slow pump output

C3 Aqua control activated

C7 Not heating

C8 NTC fault

C9 Tacho or motor fault

CA Motor triac short circuit

CD Door lock faulty

CE Water distributor fault, this machine has a small motor in the dispenser to select the Compartment to fill through, this in turn operates a micro switch inside the dispenser

CF EPROM fault Some of these faults are locked in and will return even if machine is disconnected; the only way to clear them is to run the test programme. Hold in Pre wash and soak button while turning rotary knob to gentle spin.

AEG Washing Machines and Washer Dryers

Machines fitted with EWM2000EVO electronic controls and sensors as well as the AEG "NEXXXT" display boards.

E11 Poor fill before wash cycle
Tap off or water pressure too low; Drain hose improperly positioned; Fill valve is defective; Leaks on pressure switch; Pressure switch failed; Wiring fault;
Main board defective. Cycle is paused with door locked Start

E12 Difficulty in fill during drying (maximum time 3 min. fill in drying during the wash load phase)
Tap off or water pressure too low; valve failed; pressure switch water circuit; pressure switches; wiring; main PCB. Cycle is paused

E13 Water leaks
Drain hose improperly positioned; Water pressure too low; Fill valve is defective; Water circuit on pressure switch is leaking or blocked; Pressure switch faulty.
Cycle is paused with door locked Start

E21 Poor draining
Drain hose kinked/clogged/improperly positioned; Drain filter clogged/dirty; Drain pump faulty; Pressure switch faulty; Wiring faulty; Main board faulty; Current leak between heating element and ground.
Cycle is paused Start

E22 Difficulty in fill during drying or drying condenser blocked (pressure switch closed on "FULL")

Drain hose kinked; filter blocked: drying condenser blocked; drain pump faulty; pressure switches faulty; wiring; main circuit board faulty; Current leakage between heater and ground.
Cycle is paused Start

E23 Defective triac for drain pump
Drain pump faulty; Wiring faulty; Main board faulty. Emergency drain procedure
Cycle stops with door unlocked OFF/reset

E24 Malfunction in sensing circuit on triac for drain pump
Main board faulty. Emergency drain procedure
Cycle stops with door unlocked OFF/reset

E31 Malfunction in pressure switch circuit (frequency of signal from pressure switch out of limits)
Pressure switch faulty; Wiring; Main PCB faulty;
Cycle stops with door locked OFF/reset

E32 Electronic pressure switch improperly calibrated (level on electronic pressure switch differs from 0-66 mm after initial calibration drain and when anti-boiling pressure switch is on ‘‘empty’’).
Tap is off or water pressure is too low; Fill valve faulty; Water circuit on pressure switches; pressure switches; Wiring; PCB faulty;
Cycle is paused Start

E33 Inconsistency between level on electronic pressure switch and level on anti-boiling pressure switch 1-2 (fault persists for at least 60 sec.).
Pressure switch defective; Current leak between heating element and ground; Heating element; Wiring faulty; Main board faulty. Water circuit; Emergency drain procedure
Cycle stops with door unlocked OFF/reset

E34 Inconsistency between level on electronic pressure switch and level on anti-boiling pressure switch 2 (fault persists for at least 60 sec.).
Pressure switch faulty; Electrical current leak between heating element and ground; Heating element faulty; Wiring faulty; Main board faulty. Water circuit; Emergency drain procedure
Cycle stops with door unlocked OFF/reset

E35 Overflow
Fill valve is faulty; Leaks from water circuit on pressure switch; Pressure switch defective; Wiring defective; Main board defective. Cycle stops. Emergency drain procedure. Drain pump continues to operate (5 min. on, then 5 min. off, etc.).
OFF/reset

E36 Sensing circuit on anti-boiling pressure switch 1 defective
Main board faulty.
Cycle stops with door locked OFF/reset

E37 Sensing circuit on anti-boiling pressure switch 2 defective
Main board faulty.
Cycle stops with door locked OFF/reset

E38 Internal pressure takeoff is blocked (water level does not change for at least 30 sec. of drum rotation).
Water circuit on pressure switches; Pressure switches; Motor belt broken; Heating phase is skipped ---

E39 Defective HV sensing on anti-overflow system
Main board faulty.
Cycle stops with door locked OFF/reset

E3A Faulty sensing by heating resistance relay
Main board defective.
Cycle stops with door locked OFF/reset

E41 Door unlocked
Door lock faulty; Wiring faulty; Main board faulty.
Cycle is paused Start

E42 Problem closing the door
Door lock faulty; Wiring faulty; Main board faulty

Cycle is paused Start

E43 Defective triac supplying power to door delay system
Door lock unit faulty; Wiring faulty; Main board faulty. (Emergency drain procedure)
Cycle stops OFF/reset

E44 Defective sensing by door delay system
Main board faulty. (Emergency drain procedure)
Cycle stops OFF/reset

E45 Defective sensing by triac on door delay system
Main board faulty. (Emergency drain procedure)
Cycle stops OFF/reset

E51 Motor power supply triac short-circuited
PCB faulty; current leakage from motor or from wiring loom.
Cycle blocked, door locked (after 5 attempts) OFF/reset

E52 No signal from motor tachometric generator
Motor faulty; wiring faulty; PCB faulty
Cycle blocked, door locked (after 5 attempts) OFF/reset

E53 Motor triac sensing circuit faulty
PCB faulty.
Cycle blocked, door locked OFF/reset

E54 Motor relay contacts sticking
PCB faulty; current leakage from motor or from wiring Cycle blocked, door locked (after 5 attempts) OFF/reset

E61 Insufficient heating during washing
NTC sensor faulty; heating element faulty; wiring faulty; PCB faulty. The heating phase is skipped

E62 Overheating during washing
NTC sensor faulty; heating element faulty; wiring faulty; PCB faulty. Safety drain cycle
Cycle stopped with door open OFF/reset

E66 Heating element power relay faulty
PCB faulty; current leakage from heating element to ground. Safety drain cycle
Cycle stopped with door open OFF/reset

E71 NTC sensor for wash cycle defective
Faulty NTC sensor; Wiring faulty; Main board faulty. Heating is skipped Start

E72 Fault in NTC sensor on drying condenser (voltage out of range = short-circuit, open circuit)
Drying NTC sensor (condenser) faulty; wiring faulty; main circuit board faulty.
Heating is skipped Start

E73 Fault in NTC sensor on drying duct (voltage out of range = short-circuit, open circuit)
Drying NTC sensor (duct) faulty; wiring faulty; main circuit board faulty.
Heating is skipped Start

E74 NTC sensor for wash cycle improperly positioned
NTC sensor incorrectly positioned; Faulty NTC sensor; Wiring defective; Main board faulty.
Heating is skipped Start

E82 Error in selector reset position
PCB faulty (Wrong configuration data). Selector, wiring faulty
OFF/reset

E83 Error in reading selector
PCB faulty (Wrong configuration data). Selector, wiring
Cycle cancelled

E84 "Sensing" circuit on circulation pump triac faulty (input signal to processor always 0V or 5V)
PCB Drain, cycle blocked (door open)
OFF/reset

E85 Circulation pump faulty (incongruency between status of "sensing" circuit on circulation pump and status of TRIAC)

Circulation pump; wiring; main PCB Drain, cycle blocked (door open)
OFF/reset

E91 Communication incongruence between main PCB- display board (versions not compatible)
Wiring faulty; Faulty control/display board Main PCB faulty.
Cycle interrupted

E92 Communication incongruence between main PCB- display board (versions not compatible)
Wrong control/display board; Wrong PCB (do not correspond to the model).
Cycle interrupted

E93 Incorrect configuration of appliance
Incorrect configuration data; PCB faulty.
Cycle interrupted OFF/reset

E94 Incorrect configuration of washing cycle
Incorrect configuration data; PCB faulty.
Cycle interrupted OFF/reset

E95 Communication error between microprocessor and EEPROM
PCB faulty.
Cycle interrupted OFF/reset

E97 Incongruence between programme selector and cycle configuration
Faulty PCB (Wrong configuration data).
Cycle interrupted OFF/reset

EB1 Frequency of appliance incorrect
Power supply problems (incorrect / disturbance); PCB faulty.
Cycle interrupted

EB2 Voltage too high
Power supply problems (incorrect / disturbance); PCB faulty.
Cycle interrupted

EB3 Voltage too low
Power supply problems (incorrect / disturbance); PCB faulty.
Cycle interrupted

EC1 Solenoid valve inoperative but flow meter operating
Main board faulty, Fill valve faulty
Cycle stops with door locked (after 5 attempts). OFF/reset

EC2 Signal from turbidity sensor out of limits
Turbidity sensor faulty, Main board faulty, Wiring faulty
Start/reset

EC3 Signal from weight sensor out of limits
Weight sensor faulty, Main board faulty, Wiring faulty
Start/reset

EF1 Drain filter blocked (too long drain phase)
Drain tube blocked/kinked/too high; Drain filter dirty/blocked.
Warning displayed at the end of cycle (specific LED)

EF2 Overdosing of detergent (too much foam during drain phases)
Excessive detergent dosing; drain tube kinked/blocked; Drain filter dirty/blocked.

EF3 Control water intervention
Water leakage on the base; faulty water control device.
Water drain and cycle blocked OFF/reset

EF4 Low pressure of water fill, no signal of flow meter and solenoid open
Tap closed, low water fill pressure --- Reset

E00 No alarm

AEG Lavamat 8*** Series Onwards

C0 =Imbalance between both Pressure Switches, Heater or wiring fault.
C1 = No water in, valve at fault or low pressure.
C2 = Pump blockage, pump open circuit, drain blockage.
C3 = Safety flood device operated, pump fault, module fault.
C4 = Pump fault.
C5 = Overheat sensor on main motor.
C6 = Pressure switch fault.
C7 = Heater or heater relay fault.
C8 = NTC fault.
C9 = Tacho fault.
CA = MOS-FET transitor defective.(Replace main module)
CB = Overfill/level fault or inlet valve.
CC = PTC for MOS-FET transistor fault, main motor fault.
CD = Door Interlock fault.
CF = Checksum EEPROM fault, configuration error on module.

German Made AEG Washing Machines (up-date)

C0 = Pressure switch problem
C1 = No water in
C2 = Drain pump fault
C3 = Float switch fault
C4 =Wash pump fault
C5 = Motor overheat
C6 = Pressure switch fault
C7 = Heater
C8 = Heater NTC fault
C9 = Tacho fault
CA = Motor triac on board fault
C5 = Overfill fault
CC = More triac/Mosfet board problems
CD = Door Interlock
CF = Module configuration problems

Admiral

Admiral Range Cooker

Stove or Oven Fault Codes Failure Code Fault Code Description

F0 Function key stuck Replace touch pad or if touch pad is part of the clock, replace the clock (ERC).
F1 Defective touch pad or clock (ERC) Replace touch pad or clock (ERC). Touch pad is a more common problem. Refer to F1 test at the top of this page for more information.
F2 Oven temperature too hot Replace relay board, if present, or oven temperature sensor (RTD). Check sensor harness.
F3 or F4 Shorted or open oven temperature sensor (RTD) Check sensor harness and harness connection between oven sensor and oven control. Replace oven temperature sensor (RTD) if wiring is ok.
F5 Watchdog and hardware conflict Replace clock (ERC).
F7 Function key shorted or stuck Replace touch pad or if touch pad is part of the clock, replace the clock (ERC).
F8 Analog / Digital problem Replace clock (ERC).
F9 Door latch Check door latch components

Amica

Amica Washing Machine (Polish Production)

Error signalling specification of PB, PD or AWC(S)M washing machines.

The electronic system features self-test functions which detect faults or incorrect functioning of the washing machine. The electronic controller of the „amica digital" washing machine additionally features a large LCD which indicates errors and faults in a clear and easily readable manner by displaying the letter „E" and the error code. Theoretically, up to 99 different errors can be indicated in this way, however in practice only about a dozen codes are used.

After switching off, the washing machine memorises the last detected error and in order to erase the error from the memory (so that it is possible to use the washing machine again) the error indication must be reset by pressing the START button for about 3 seconds.

Caution! Resetting the error indication does not rectify the fault but only erases from the controller memory the information that the error was detected! The error message only describes the detected malfunction but does not specify the faulty component! All of the errors below may also occur if any cables or electronic circuits are damaged (this is not stated for each item in the table).

Caution! Each detected fault causes the doors to lock. The doors can only be unlocked by resetting the error indication or switching the washing machine off with the mains switch.

Code Direct cause Action taken by the controller Possible causes of the malfunction

E01 No feedback signal from door interlock

After 15 seconds the E01 code is displayed and the wash programme is terminated

- Washing machine door open
- Faulty interlock
- The door lock mechanism does not shift the interlock sensor far enough

E11 Malfunction of the door interlock triac

After 2 seconds the E11 error code is displayed and the wash programme is terminated

- Faulty electronic circuit board

E02 Filling time longer than 2 minutes The “Ready” LED flashes during the wash (which is not terminated). After the washing is completed the E02 error code is displayed. Further fillings above the pressure controller level are blocked.

- Low mains water pressure
- Partially blocked inlet hose or valves

E05 No signal from pressure controller 10 minutes after filling starts. The E05 error code is displayed and the wash programme is terminated.

- No water supply
- Very low mains water pressure
- Faulty solenoid valve
- Faulty pressure controller
- Control valve (washing machines with AquaSpray) locked in the “off” position E03 Water discharge time longer than 1.5 minutes

The “Ready” LED flashes during the wash (which is not terminated). The next spin cycle after discharging the water is restricted to 400 rpm.

- Partially blocked pump filter
- Partially blocked discharge hose

E06 No “empty” signal from pressure controller 10 minutes after water discharging starts The E06 error code is displayed and the wash programme is terminated.

- Blocked pump
- Blocked discharge hose
- Control valve locked in the “on” position
- Faulty pressure controller

E04 “Overfill” signal from pressure controller

The E04 error code is displayed, the pump is switched on and the wash programme is terminated. After 1.5 minutes from sending of the “Reservoir empty” signal by the pressure controller the pump is switched off. If water is subsequently detected while the E04 error is indicated,
the pump is restarted.

- Solenoid valves locked in the “Open” position
- Large fluctuations in water pressure during the wash cycle

- Wash cycle starts with closed water inlet which is then opened during the wash
- Faulty pressure controller

E31 Temperature sensor shorted The wash programme is not terminated and after its completion the E31 error code is displayed

- Faulty temperature sensor

E32 Temperature sensor open The wash programme is not terminated and after its completion the E32 error code is displayed

- Faulty temperature sensor

E21 Motor blocked: voltage is fed to the motor but there is no signal from the rate generator

The E21 error code is displayed and the wash programme is terminated.

- Faulty motor (rate generator, thermal switch or winding)
- Motor connection block removed
- Thermal switch open due to motor overheating

E08 Input voltage outside the range of 160-253V, 50/60Hz

The E08 error code is displayed, washing cannot be started. After resetting, the error is indicated again if the cause is not rectified.

Incorrect mains voltage

E22 Motor triac shorted – there is a signal from the rate generator even though no power is supplied to the motor

The E22 error code is displayed and the wash programme is terminated.
Faulty electronic circuits (the error may occasionally be caused by a heavily unbalanced load such as a blanket or dressing gown)

E07 Signal (open contacts) from the floating sensor – water at the bottom of the drum

The E07 error code is displayed and the wash programme is terminated. The pump is switched on and then switched off 1,5 minutes after the “Reservoir empty” signal is sent

- Water leak from the bathtub or hoses
- Faulty sensor

E42 Time to unlock the door of more than 120 s

The error occurs at the end of the washing, if after the washing the door is not unlocked within 2 minutes. The washing machine shows E42 error and another cycle cannot be started before the error signal is reset.

- door lock damaged
- door is locked mechanically

E51 Incorrect data in program's memory

Displayed as error code, wasching machine start inoperable

- programmer damaged (processor)

E52 Incorrect data in configuration's memory Displayed as error code, wasching machine start inoperable

- programmer damaged (processor)

E53 Input circuit EMC errors Displayed as error code, washing machine start inoperable

- programmer damaged (processor)

E54 Autotest's errors Displayed as error code, wasching machine start inoperable

- programmer damaged ;
- damaged circuit NTC.

Toptronic PG Washing Machine Test Procedure

The servicing mode is a function of the machine that enables checking the operation of individual machine components and functions separately. This is not a self-test for detecting defective components, but only some assistance for the service technician in diagnosing the fault.

Inflow and outflow of water and power supply is required for carrying out full test. Certain checks do not require water.

Part I
Test start – switch to servicing mode

To secure against accidental launching, the servicing test is started with a special combinatio of dialing and pressing the EXTRA RINSE" and "SPIN OFF":

Servicing Test Access Steps:
1. The machine must be in „READY" mode.
2. Set the selector in position 12 "SOFT RINSE"
3. Press the "extra rinse" and "spin off" buttons simultaneously and hold them while setting the following positions in the given sequence:
12,11,12,11,10,9,8,7,6,5,4,3,2,1
4. The "start/pause" LED starts to blink in red from position 9, showing that test programmes are being launched. Release the "extra rinse" and "spin off" buttons but continue the setting sequence as above.
5. Press the "spin off" button before switching to last position of sequence, i.e. position 1. Then, the machine will go to MANUAL TEST mode, which is signaled by yellow blinking of the "start/pause" LED.
6. To switch off test mode, press the "extra rinse" and "spin off" buttons simultaneously again in MANUAL TEST mode.

Part II
Washing machine testing. Ending the service test.

The machine is tested as follows:
- turn the programme selector knob to the desired position – Note: do not turn through positions 10 to 12;
- press and release the „START/PAUSE" button
- note the machine behavior – only the "START/PAUSE" LED will stay on during this step, the other LEDs being off;
- the test step can be interrupted through pressing the "extra rinse" and "spin off" buttons simultaneously again
- before selecting next test step, interrupt (end) the previous step.
- the door lock is only powered when the selected test step has been launched.

· if you choose position 10, 11 or 12, the test will terminate without pressing "START/PAUSE" unless the machine is just performing a test step.

Tests on individual selector positions

Item Test: Execution:

1 Filling the machine to pressure control via wash compartment Applying supply voltage to EV2 solenoid valve (to the right side when looking from machine front perspective). Voltage is disengaged when pressure control is switched.

2 Filling the machine without level control via rinse compartment Voltage applied to both solenoid valves. Note: when pressure control overflow level is reached, the machine quits the servicing mode and displays error 4 · overfilling.

3 Filling the machine without level control via pre-wash compartment Voltage applied to EV1 solenoid valve. See note to item 2.

4 Pump test / water drainage Supply voltage applied to pump, draining takes ca. 80s after detecting the "empty" signal.

5 Heater test: heating up to preset temperature. Any temperature can be set, 40C is proposed. More water is taken to the pressure control level via EV1 valve and heater relay goes on. The relay goes off when the selected temperature is achieved.

6 Engine test: washing movements. The drum engages in washing movements: 12 seconds at a rate of ca. 53 rpm, 3 seconds break. Movements are alternately to the right and to the left, first movement clockwise.

7 Engine test: spin-drying cycle – rate can be selected Water is drained (voltage applied to pump) and spin-drying cycle is carried out as in wash programme 8 of the machine.

8 Door lock activation. Only the door lock is on.

Error signalling specifications for PG – LED washing machines

Rev.00, 11.10.2007 – concerning washing machines featuring programme PG1.03 or later

The electronic system has certain machine self-test functions for detecting damage or improper behavior of the washing machine. Electronic controller of PG machine – the LED indicates any errors and defects detected through combinations of additional function LEDs, "start/reset" button LEDs and "on/off" button LEDs. Theoretically, this enables signaling of up to 9 different errors.

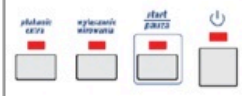
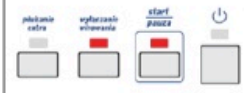
After power shutdown, the machine memorizes the last error found. To delete the error from memory (and continue using the machine), you need to delete error signal. Press the ON/OFF button and hold it for about 2 seconds, then turn off the machine.

Note! Deleting the indication does not remove the source of error. It only deletes error detection information from controller memory! Error indication only shows that something wrong has been found, but it does not specify the actual part that is damaged! All the signals mentioned below may also occur in case of cable damage or electronic system damage (which is not mentioned in every section).

Note! The door will be locked in case of detecting any error. You may only unlock the door through deleting error indication (turn off the machine) or disconnect the power cord.
Note! Most of the above mentioned errors may also occur in case of damage to the quad (broken quad, short circuit, connection block damage) connected to the given electric circuit.

Error codes in the table below are signaled by relevant LEDs going on. Red START/PAUSE LED on always indicates a fault.

Amica Washing Machines Without A Display Panel

Code:	Immediate cause	Action taken by the controller	Possible causes of failure
	No return signal of door lock	PE, WW and ⏻ LEDs go on after 15 seconds and washing programme is interrupted	- Open machine door - Damaged lock; - Door latch moves the lock sensor too weakly;
	No door lock triac control	Error code is displayed after 2 seconds and washing programme is interrupted	- Electronic board damage
	Door unlocking time longer than 120 seconds	Error occurs at the end of washing cycle if the door is not unlocked within 2 minutes. The machine will display an error code and prevent the switching of another cycle without deleting error indication	- damaged door lock; - door locked mechanically;
	Filling time longer than 2 minutes.	Error indication is displayed after completed washing cycle. Additional water filling above pressure control level is locked.	- Low water pressure; - Partially clogged inlet hose or valves.
	No signal from pressure control after 10 minutes of start of filling.	The programme is interrupted and error code is displayed.	- No water inlet; - Very low water pressure; - Damaged solenoid valve; - Damaged pressure control; - Overload valve (of AquaSpray-enabled machine) locked in "off" position
	Draining time longer than 1.5 minutes	Nearest spin-drier after draining is limited to 400 rpm. Error indication is displayed after completed cycle.	- Pump filter is partially clogged; - Outlet hose is partially clogged;
	No emptying signal from pressure control after 10 minutes of start of draining.	The programme is interrupted and error code is displayed.	- aspirator locked; - outlet hose clogged; - overload valve locked in "on" position; - damaged pressure control;
	"Overfill" signal sent from pressure control	The programme is interrupted, pump goes on, error code is displayed. Pump is switched after 1.5 minutes of pressure control "empty tank" signal. If water is detected again during error signaling, aspirator is switched on again.	- Solenoid valves locked in "open" position; - high water pressure variations during washing cycle; - washing cycle commenced with water supply cut down, which is then opened during washing; - damaged pressure control;
	Break in heater circuit	The machine does not interrupt the programme, error code is displayed when washing is complete.	- heater burnt; - quad damaged;
	Closed temperature sensor Open temperature sensor.		- temperature sensor damaged;
	Engine blocked. Despite that voltage is applied to the engine, there is no signal from rate generator.	The machine interrupts the programme and displays error code.	- Damaged engine (rate generator, thermal or winding switch) - Engine block drawn out; - Thermal switch open due to engine overheating.
	Engine triac closing – rate signal present despite no power supply to engine.	The machine interrupts the programme and displays error code.	Damaged electronic circuits (individual detection instances can be caused by highly imbalanced input, e.g. a blanket, a dressing gown)
	Power voltage outside 160-253V, 50/60Hz range.	The machine displays an error code and prevents starting a wash cycle. When deleted, the error will be detected again if the cause has not been remedied.	– Wrong supply voltage, – Wrong supply voltage frequency
	Internal controller fault	After switch-on, the machine displays an error code and prevents starting a washing cycle. The machine interrupts the programme during operation and displays error code.	- Damaged EEPROM memory, - Damaged processor or peripherals (detected in self-test)

Antonio Merloni

Antonio Merloni manufacturers under many different brand names and is the largest supplier of “OEM” or “own-brand” appliances in Europe. In the UK you can find the following brands manufactured by Antonio Merloni:

- Servis
- Electra
- Asko
- Diplomat/Hygena (Primarily integrated washing machines)

Dishwashers

With Elmarc CCU.

Fault is shown on the 5 program led’s
All led’s will be on and the one that is flashing is the fault
1st led is on the left.

E1	LED 1 flashes	No fill	cycle stops
E2	LED 2 flashes	NTC o/c or s/c	signal when Cycle completes
E3	LED 3 flashes	Temp to high/low	only during Test prog
E4	Leak	Signal when cycle completes	
E5	Wont empty	Signal when cycle completes	

Error codes during test cycle

Sold as Servis, Electra and other brands.

Baumatic

Baumatic Dishwasher

Error Codes

E1 No fill
E2 No drain
E3 NTC/Element fault
E4 Overfilling
E5 Cannot switch off automatically - programme not finishing (not for BDW 13, 14 or 15)
E6 OC Thermistor
E7 SC Thermistor

Quick Function Test for Baumatic BDW13/14/45.1

The following quick test procedures are used to conduct a quick test for a particular function or functions without waiting for a whole normal washing cycle. It offers a good tool to make test and diagnosis in visit to clients. The main steps and display code are as follows:

Step No.	Test Stage	Display Code	Status Explanation
00	Initiation	**17**	Power on and ready to run
01	Water intake	**16**	Inlet valve energises for about 15 seconds
02	Wash pump	**15**	Wash pump energised with 3 second delay to check water level os okay. Wash for approx. 10 seconds after water valves switch off
03	Dispenser	**14**	Dispenser energised for approx. 10 seconds
04	Element	**13**	Wash pump energised and element/s on for approx. 15 seconds
05	Regeneration Unit	**12**	Regeneration valve energised
06	Drain Pump	**11**	Drain pump energised for approx. 20 seconds
07	End	**10**	One beep and appliance stops

Procedure to enter this quick test mode:

1. Press the timer button and the power on button at the same time;
2. Then the initial stage is set with '17' appearing on the LED display;
3. We can skip any step in the operating process by pressing programme button P on the panel. And the LED display is decreased by 1 per step to 16 –15—14—13 etc to 10. The sequence of this step is listed in the above table.

Beko

WMA1715S

(Other models unknown presently)

With power turned off select 90 cotton position

Press & hold the start/pause switch on, start button will flash after 3 sec.

Each push of start button will test a function as follows:

1. All LEDs flash
2. Water fill thru pre wash
3. Water fill thru main
4. Water thru conditioner
5. Hot fill
6. Heater on will fill to level if below
7. Clockwise drum to 52 rpm
8. Anti clock to 52 rpm
9. Drain
10. Spin to max
11. Fill to check leaks
12. End

Also see "ISE" for alternative

WMA Series

Turn machine off. Select 90 deg cotton press and hold start, switch on keep holding start for three seconds it will then flash

Turn knob to spin press start light codes as follows

Prewash	NTC
Main Wash	No heat
Prewash & Main Wash	Constant heat
Rinse	No fill
Prewash & Rinse	No drain
Prewash Main Wash & Rinse	Pressure switch
Main Wash & Rinse	Motor tacho or PCB fault
Rinse & Conditioner	No motor action

To reset error codes hold start for five seconds.

Beko Washing Machines (1715 etc)

H1 : NTC OPEN CIRCUIT OR SHORT CIRCUIT (10000)
H2 : HEATER OPEN CIRCUIT (01000)
H3 : HEATER ALWAYS ON (11000)
H4 : VALVE TRIAC SHORT CIRCUIT (00100)
H5 : PUMP OPEN CIRCUIT (10100)
H6 : MOTOR TRIAC SHORT CIRCUIT (01100)
H7 : PRESSURE SENSOR FAILURE (11100)
H11 : MOTOR / TACHO OPEN CIRCUIT (00110)

Where "1" is the LED on and "0" is the LED off.

Beko Condenser & Vented Dryer Service Program

Plug the electrical connection and be sure dryer is working properly.Turn on dryer.Press “Start / Stop” button for a while and restart program.Than cancel the programme by pressing “Start / Stop” buton 3 sec.Turn off dryer.
2. Adjust the rotary switch to the Delicate program clockwise direction after Cottons programmes.
3. By pressing Buzzer Cancel function button turn on dryer.Wait until “Start / Stop” led is blinking.
4. Press “Start / Stop” button to follow steps of service program:
1. All led is blinking.
2. Controlling leds. All the leds are on and blinking.
3. Motor is turning anti-clockwise direction.
4. While motor is turning first level of heater is on. 1400 W (7 A) and pump is on, if exist.
5. While motor is turning second level of heater is on. 2000 W (9,6 A) and pump is on, if exist.
6. Motor is stopping. Heaters are off.
7. Motor is turning clockwise direction.
Continuing pressing “Start / Stop” repeats steps 1 to 7.

Beko American SBS Fridge Freezer

ERROR CODES
Error codes is displayed at freezer display and while there is an error code “!” icon is lit on the display. Actual freezer display and error code/codes are shown in sequence.
E0 (Freezer sensor failure):
- Entry: If measured sensor value is open circuit or short circuit
- Behaviour during error: Compressor and freezer fan run continuously. Freezer bar-graph display will be off.
- Exit: If the sensor value is correct (not open or short) error is omitted.
E1 (Freezer defrost sensor failure):
- Entry: If measured sensor value is open circuit or short circuit
- Behaviour during error: Defrost heater will be switched on for 25min. during normal defrost.
- Exit: If the sensor value is correct (not open or short) error is omitted.
E3 (Fridge sensor failure):
- Entry: If measured sensor value is open circuit or short circuit
- Behaviour during error: Baffle should be opened for 3min. and closed for 7 min. Fridge bar-graph display will be off.
- Exit: If the sensor value is correct (not open or short) error is omitted.
E4 (Defrost heater failure):
- Entry: If defrost time is equal to the maximum defrost time of 60min. for 3 consecutive defrosts this error is shown.
- Behaviour during error: Control runs defrost heater normally.
- Exit: When a defrost finishes shorter than maximum time of 60min error is omitted.
E8 (Ice sensor failure):
- Entry: If measured sensor value is open circuit or short circuit
- Behaviour during error: Ice machine should not operate.
- Exit: If the sensor value is correct (not open or short) error is omitted.
E9 (Ice machine failure):
- Entry: If switch does not change as described during initialisation or, while rotating ice machine, if SW position does not change in 1 minute
- Behaviour during error: Ice machine should not operate.
- Exit: If ice-off is selected, or if during initialisation switch changes as described.
When the failure is corrected the error code will disappear on the display and control will run according to normal related algorithm.
After a power interruption, error codes should be remembered.
After an initial power-up, error codes, except heater error, should not be remembered. (Heater error should be remembered)
Error codes are cleared after a self-test.

Belling

BELLING DISHWASHER FAULT CODES

E1 - If the water inlet valve has worked for 4 mins and the flowmeter detects that not enough water has entered the Dishwasher (3.5l) the the control board will shut down all functions and the alarm buzzer will sound for 30 secs and "E1" will be displayed on the control panel, the Dishwasher will pause for 3 mins and then drain out the water for 90 secs and revert to the rest position.

E3 - A. If the heating element is still heating after the allowed time, then the control board will advance the programme to next step and at the end of the washing cycle the alarm buzzer will sound for 30 sec and the display will show E3.

B. When the contol board detects that the heating element is operating during a non heating step or during the internal test the heating circuit is found to be open circuit then the alarm buzzer will sound for 30 sec and the control board will cease all functions except for the drain cycle which will run for 90 seconds and then E3 will be displayed on the contol panel.

E4 - Any time that the float chamber micro switch operates for more than 2 secs the control board will shut down all functions and operate the drain pump for 30 secs and then sound the alarm buzzer for 30 secs and the control panel displays E4. If the microswitch sets during the draining period then the control board will allow the dishwasher to function normally again , or the dishwasher will then revert to constant draining until the micro switch returns to normal rest position.

E6 - If after the control board has carried out an internal test and found the thermister open circuit the dishwasher will cease all functions and the alarm buzzer will sound for 30 secs and the control panel will display E6 after a further 3 mins the machine will operate the drain pump for 90 secs and revert to rest position.

E7 - If after the control board has carried out an internal test and found the thermister short circuit the dishwasher will cease all functions and the alarm buzzer will sound for 30 secs and the control panel will display E7 atfer a further 3 mins the machine will operate the drain pump for 90 secs and revert to the rest position.

Bosch

WFF2000 Range

Fault No.	Spin LED	Rinse LED	Wash LED	Fault detected	Remarks	What happens
1				Door open after program started	Detected after 1 minute	Program halts and can be restarted
2				Water intake takes more than five minutes. Error after more than 10 minutes.	Water tap closed Filters blocked Water pressure low	Program halted Pump starts after ~5 minutes Program can be restarted
3				Heating time exceeds 105 minutes	Failed to reach temp Heater or heater wiring faulty Low voltage Calcified heater	Continues to end with no heat
4				Takes longer then 6 minutes to drain down	Has not reached level over 1 Blocked sensor (pressure switch) Pressure switch fault Faulty or blocked drain pump	Program aborted “fatal error” without pumping
5				Fault in motor/drive circuit	No tacho signal Triac fault, short Reverse relay faulty	Continues to try to start motor After several attempts, program aborted with fatal error
6				Unexpected heating	Machine heats at a stage where t should not do so	
7				NTC failure open/short	Faulty NTC Faulty wiring to NTC	No heat but completes program

NOTE: The codes for the WFF range of Bosch machines differs from the Siemens ones, please see the Siemens section for the appropriate codes for those machines.

WFF1201/1401 Range

On this range there is no visual fault indication but the chart below shows how the programmer will react when the corresponding fault occurs.

Time out on fill	Controller continues to the off position after about six minutes
Time out on heat	Controller continues to next position after time expires: 85 minutes on cottons/coloured 30 minutes on delicates/wool 15 minutes on prewash
Time out on drain	Advances to the off position after about six minutes
No control over motor action	After eight attempts the controller advances to the off position
NTC faulty	The NTC is checked when the machine heats. If faulty the controller advances to the next stage. This check is also used on the test program at position 31. The controller will advance when the prewash button is pressed.

WFP Range Of Washing Machines

Fault No.	Displayed Error	Description of Fault	Possible causes	What happens
1	**F01**	Water intake timeout (Faulty Aquastop)	Water tap closed Filters blocked Water pressure low	Program halts and can be restarted
2	**F02**	Heating timeout	Wash temperature not reached Defective heater or wiring	Program aborted, fatal error
3	**F03**	Draining timeout	Has not reached level over 1 Blocked sensor (pressure switch) Pressure switch fault Faulty or blocked drain pump	Program aborted, fatal error
4	**F04**	Motor fault (No tacho signal)	Program has finished but motor did not start	Motor attempts to start until the end of the program
5	**F05**	Uncontrolled motor startup High resistance connections (Carbons faulty)	Motor spins uncontrolled or motor plug not connected	Program aborted
6	**F06**	Short on NTC	Detected on hot water intake Any heating phase	Program aborted, fatal error except on cold only wash
7	**F07**	Open circuit NTC	Open circuit wiring Faulty NTC	Program aborted, fatal error except on cold only wash
8	**F08**	Door open when program started	Door LED will flash	Restart possible
9	**F09**	Unexpected heating		At approx. 95/100°C program is aborted
10	**F10**	Communication error In main program after 11 minutes In test after 1.5 minutes	Failed communications between the motor and control PCBs	Program aborted, fatal error
11	**F11**	Overheating Heat sink or motor control PCB Fault detected eight times	Primary cause is overloading the machine will be sluggish or stiff	Displayed in test only Program continues
12	**F12**	Short circuit Motor faulty Free running diode faulty	Fault detected eight times	Program aborted, fatal error
13	**F13**	Mains voltage too high	Greater than 318V	Motor is switched off and program continues Displayed only in test
14	**F14**	Mains voltage too low	Less than 172V	Motor is switched off and program continues Displayed only in test
15	**F15**	Faulty temperature sensor on motor PCB	Sensor defect if temperature is less than 10°C or greater than 127°C	Displayed only in test
16	**F16**	Faulty rinse sensor		Displayed only in test

WFL Range

Fault No.	Spin LED	Rinse LED	Wash LED	Fault detected	Remarks	What happens
1				Door open after program started	Detected after 1 minute	Program halts and can be restarted
2				Water intake takes more than five minutes. Error after more than 10 minutes.	Water tap closed Filters blocked Water pressure low	Program halted Pump starts after ~5 minutes Program can be restarted
3				Heating time exceeds 105 minutes	Failed to reach temp Heater or heater wiring faulty Low voltage Calcified heater	Continues to end with no heat
4				Takes longer then 6 minutes to drain down	Has not reached level over 1 Blocked sensor (pressure switch) Pressure switch fault Faulty or blocked drain pump	Program aborted “fatal error” without pumping
5				Fault in motor/drive circuit	No tacho signal Triac fault, short Reverse relay faulty	Continues to try to start motor After several attempts, program aborted with fatal error
6				Unexpected heating	Machine heats at a stage where t should not do so	
7				NTC failure open/short	Faulty NTC Faulty wiring to NTC	No heat but completes program

How to find the date code

Bosch, Siemens, Neff and some Teknic
e.g. - FD 8510

Add 2 to the 1st digit of the first two making it 05 = year 2005 and the last two digits are its month 10 = October

Greg Leather

WAA Range

Fault No.	Spin LED	Rinse LED	Wash LED	Fault detected	Remarks	What happens
1				Heating time exceeds 105 minutes	Failed to reach temp Heater or heater wiring faulty Low voltage Calcified heater	Continues to end with no heat
2				Fault in motor/drive circuit	No tacho signal Triac fault, short Reverse relay faulty	Continues to try to start motor After several attempts, program aborted with fatal error
3				Door open after program started	Detected after 1 minute	Program halts and can be restarted
4				Unexpected heating	Machine heats at a stage where t should not do so	
5				Water intake takes more than four minutes. Error after more than 10 minutes.	Water tap closed Filters blocked Water pressure low	Program halted Pump starts after ~5 minutes Program can be restarted
6				Takes longer then 6 minutes to drain down	Has not reached level over 1 Blocked sensor (pressure switch) Pressure switch fault Faulty or blocked drain pump	Program aborted “fatal error” without pumping
7				NTC failure open/short	Faulty NTC Faulty wiring to NTC	No heat but completes program

WOL Range

Fault No.	Spin LED	Rinse LED	Wash LED	Fault detected	Remarks	What happens
1				Door open after program started	Detected after 1 minute	Program halts and can be restarted
2				Water intake takes more than five minutes. Error after more than 10 minutes.	Water tap closed Filters blocked Water pressure low	Program halted Pump starts after ~5 minutes Program can be restarted
3				Heating time exceeds 105 minutes	Failed to reach temp Heater or heater wiring faulty Low voltage Calcified heater	Continues to end with no heat
4				Takes longer then 6 minutes to drain down	Has not reached level over 1 Blocked sensor (pressure switch) Pressure switch fault Faulty or blocked drain pump	Program aborted “fatal error” without pumping
5				NTC failure open/short	Faulty NTC Faulty wiring to NTC	No heat but completes program
6				Unexpected heating	Machine heats at a stage where t should not do so	
7				Fault in motor/drive circuit	No tacho signal Triac fault, short Reverse relay faulty	Continues to try to start motor After several attempts, program aborted with fatal error

WOK Range

Display No.	Prewash LED	Spin LED	Rinse LED	Wash LED	Fault detected	Remarks	What happens
1	●	●	●	●	Water intake takes more than four minutes.	Water tap closed Filters blocked Water pressure low Aquastop faulty	Program can be restarted
2	●	●	●	●	Heating time exceeds 85 minutes	Failed to reach temp Heater or heater wiring faulty Low voltage Calcified heater	Continues to end with no heat
3	●	●	●	●	Takes longer then 6 minutes to drain down	Has not reached level over 1 Blocked sensor (pressure switch) Pressure switch fault Faulty or blocked drain pump	Program aborted “fatal error” without pumping
4	●	●	●	●	Unexpected heating	Machine heats at a stage where t should not do so	At approx. 95/100°C program is aborted
5	●	●	●	●	Uncontrolled motor startup High resistance connections	Motor spins uncontrolled or motor plug not connected Carbons faulty	Program aborted
6	●	●	●	●	Top Cover open	Detected after 1 minute	Restart possible
7	●	●	●	●	Drum lid open	Drum lid open on as program starts	Restart possible
8	●	●	●	●	Fault in motor/drive circuit	No tacho signal Triac fault, short Reverse relay faulty	Continues to try to start motor After several attempts, program aborted with fatal error
9	●	●	●	●	Open circuit NTC	Open circuit wiring Faulty NTC	Program completed with cold only wash
10	●	●	●	●	NTC Shorted		Attempts to start motor till program ends
11	●	●	●	●	Parking sensor faulty	Magnet faulty Sensor faulty PCB failure	Only shown in test program
12	●	●	●	●	K5 or K6 relay faulty		Program aborted

WAE Series

Refering to the 5 spin lights;

Light
Door 1
Poor drain 1&4
No fill 1&5
Motor fault 1,3 &5
Water in base 1,3,4&5

This should apply to all WAE series with 5 spin lights

Bosch/Siemens/Neff Washers With Honeycomb Inner Drum

Error codes are taken from both 'Spin Status (5) & Programme Status (4) flashing LED's

Sp Pr
O
O O
O O
O O
O O

(Example shown: · Spin LED 5 & Prog LED's 2 & 3 = Door interlock fault)

Also.....

Spin LED 5 & Prog LED's 2 & 3 = Door not shut problem
Spin LED 5 & Prog LED's 2, 3 & 4 = Inlet valve fault, tap not on etc..
Spin LED 5 & Prog LED 1 = Pump blocked, hose kinked etc..
Spin LED 4 & Prog LED's 3 & 4 = Anti-flood device, base tray flooded
Spin LED 3 & Prog LED 3 = Motor fault
Spin LED 3 & Prog LED's 3 & 4 = Motor fault
Spin LED 3 & Prog LED 2 = Motor fault

Bosch Logixx Washers (Enr : WAS****GB/**) Series

F:16 = Door lock
F:17 = Inlet Valve
F:18 = Pump/ Drain time-out
F:23 = Flooded base s/w activated
F:34 = Door lock (see F:16)
F:42 F:43 F:44 = Motor fault indicated

Bosch/Siemens/Neff Integrated Washer Dryers (WVTi/WDi & V534)

E01 = Aquastop
E04 = Wash NTC
E05 = No water in
E06 = No water out
E10 = Motor fault
E14 = Dryer NTC

Bosch WFF2000GB/01

'Start' & 'Spin' LED's flashing together = Faulty Cold Valve
Prewash LED flashing - count flashes - (2 second pause then repeats): -
1) Water supply fault
2) Heater
3) Pump
4) Motor
5) Tacho
6) Not used
7) NTC

Loggixx Dishwashers

Common error codes on models with LED display:-

A or B Aqua sensor fault.
C No tacho pulses (i.e. Motor runs at full speed 2,800rpm).
D Short circuit triac to Circulation Pump (pump keeps running).
E Water points switching error between top & bottom basket.
F Filling error (time out 6 mins)
G Water points error, triac fault on circuit board, short circuit.
H Heating error (time out) Element, relay on module or pressure s/w.
K NTC error
O Safety level switching error

Bosch Late SMS Series Dishwashers

E:01/E:02/E:03/E:04/E:05 all refer the Power Module fault *
E:06 = Door switch fault
E:07 = Dryer fan fault
E:08 = Heat Pump detects water level too low in tub
E:09 = Heating circuit fault
E:10 = Heat pump scaled up
E:11 = NTC fault
E:12 = Not used
E:13 = Hot water inlet temperature too high (over 75 degs)
E:14 = Reed switch flow sensor fault
E:15 = Water in base
E:16 = Inlet valve fault
E:17 = Water level to high check flow sensor
E:18 = Water level too low check valve
E:19 = Not used
E:20 = Winding resistance of circulating pump fault
E:21 = Circulating pump blockage
E:22 = Not used
E:23 = Winding resitance of drain pump fault
E:24 = Drain filters blocked
E:25 = Drain pump blocked, pump cover missing
E:26 = Water switch fault
E:27 = Not used
E:28 = Turbidity sensor fault

* Future supplies of programme and power modules will no longer be preconfigured therefore only approved BSH engineers or their agents will be able to configure them (on site) using a suitably equipped laptop computer

Brandt/De Dietrich

Brandt German made washing machines with displays

i.e. WFH1171u, WFH1371u, WFH1671u · Blomberg

01	Wont fill
02	Wont empty
03	Heater circuit
04	Motor control triac shorted
05	Temp NTC circuit
06	Motor Tacho fault
07	Door latching fault
09	Programme selector fault
10	Overfill
11	Heater fault
12	Door latch fault
13	Spin speed error
18	Incorrect frequency on mains!

Brandt/De Dietrich ceramic hobs, induction

F0	CTN electro temp < ~5oC
F1	Front left cooking zone
F3	Rear left cooking zone
F2	Front right cooking zone
F4	Rear right cooking zone
F5	CTN electronic short circuited
F6	CTN electronic cut out
F7	CTN electronic> 70oC and elec .c> ~105oC
F8	Reversing of front and rear CT, test with maximum power

Candy

Candy Grando Series

The Error Codes are displayed through the simultaneous flashing of the FIRST LED of the Chronovision series and of the LED of the FIRST OPTION BUTTON together.

The time for the displaying of each code, is 15 seconds. During this period of time, both LEDs flash together at the frequency of 1 Hz (one flash per second), for a number of times corresponding to the number of the error to be displayed. Then, they stay OFF for all the time that's missing to the end of the period of 15 seconds. The sequence is repeated until Service Intervention or until the machine is switched OFF.

ERROR 0 Defective "Cuore" Control Module – Not Programmed "Cuore" Control Module.

ERROR 1 Door Safety Lock Device/Drum's Braking device defective and/or Wiring.

ERROR 2The Water Fill Phase was not completed within the designed limit time. Defective Solenoid Valve, Pressostat, Water Fill Hose, Low Water Pressure in the network and/or Wiring.

ERROR 3 The Water Drain Phase was not completed within the designed limit time. Clogged Filter, Drain Pump, Drain Hose, Wall Discharge and/or Wiring.

ERROR 4 Several (3) interventions by the Anti-flood Safety Contact of Pressostat. Solenoid Valve blocked opened, defective Pressostat and/or Wiring.

ERROR 5 NTC Temperature Reading Probe opened or shorted and/or Wiring.

ERROR 6 Eeprom – Defective "Cuore" Control Module and/or Wiring.

ERROR 7a (MDL) Jammed Motor's Rotor and/or Wiring.

ERROR 7(INVENSYS) 7 Defective Door Safety Lock Device (blocked closed) and/or Wiring.

ERROR 8 Defective Tachometric Dynamo (opened or shorted) and/or Wiring.

ERROR 9 Defective "Cuore" Control Module (damaged Motor's TRIAC) and/or Wiring.

ERROR 12 Missing dialogue between "Cuore" Control Module and Display board and/or Wiring.

ERROR 13 Missing dialogue between "Cuore" Control Module and Display board and/or Wiring. (MDL) - Defective "Cuore" Control Module and/or Wiring.

ERROR 14 (INVENSYS) - Missing Water Heating: defective NTC Probe and/or defective Water Heating Element and/or Wiring.

ERROR 15 Defective "Cuore" Control Module – Not Programmed "Cuore" Control Module.

ERROR 16 Water Heating Element is short circuited or defective electrical insulation.

ERROR 17 Wrong signal from Tachometric Dynamo.

ERROR 18 Defective "Cuore" Control Module and/or Wiring – Wrong Network Frequency.

Candy CMD Washer Dryer

The Active Rinse & 90minute LED's flash simultaneously, count the flashes for the code :

1 Flash = Interlock or wiring to it
2 Flashes = Filling time-out if basic level not reached within 5.5 minutes.
3 Flashes = Failed to drain after 4 minutes.
4 Flashes = Anti-flood pressure switch activated.
5 Flashes = NTC fault or wiring to it.
6 Flashes = Faulty Coreboard (module) or wiring.
7 Flashes = Motor or Drum jammed.
8 Flashes = Tacho fault or motor jammed.
9 Flashes = Motor triac blown on Coreboard
10 Flashes = Not used.
11 Flashes = Faulty dryer module or wiring to it.
12 Flashes = Communication error between Coreboard and Display Board
13 Flashes = Communication error between Coreboard and Display Board.

CDA

Whirlpool Manufactured Dishwashers

The CDA CW492 and 494 models were made by Whirlpool so these codes and test procedures will also apply to some Whirlpool models as well as some early Tecnik (TKD795), Hygena and Diplomat dishwashers as well.

Test procedure

If there is a fault on the appliance then this will be indicated by a rapidly flashing "Start" LED and by beeping at one second intervals.

1. Open the door, the failed fault will be indicated, the test procedure cannot be initiated whilst a fault is displayed.
2. Unplug the faulty component from the control board and check it.
3. When the fault component is repaired or replaced restart the appliance to delete the fault.

Check for short circuits! Short circuits on components can damage the main PCB

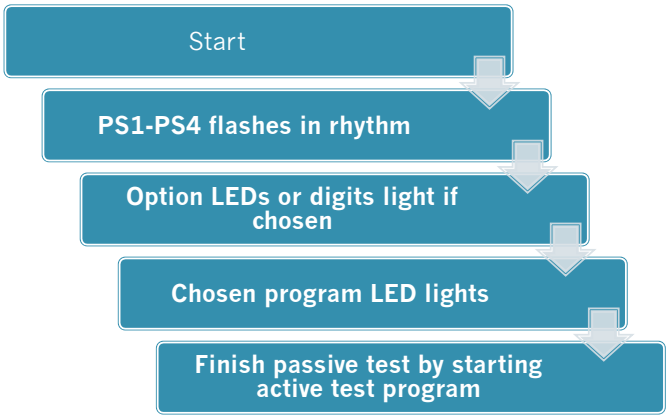
Check that none of the electronic boards (PCBs) are wet as this can cause damage.

Failures, which occurred during the program will be stored and indicated by flashing the start LED or digit
related to the failure table.

To erase the failures, push the start button and hold for at least 1.5 seconds.

The failures	**FI**	NTC break
	F2	Water Leak
	F9	Continuous Water Inlet

These are checked and indicated immediately after the program starts so these failures have to be repaired before you can run the test program. The components get their feed via triac from the PCB. To test the component a voltmeter must be connected in parallel to the component. If the component is disconnected, then the output voltage from the PCB is reduced.

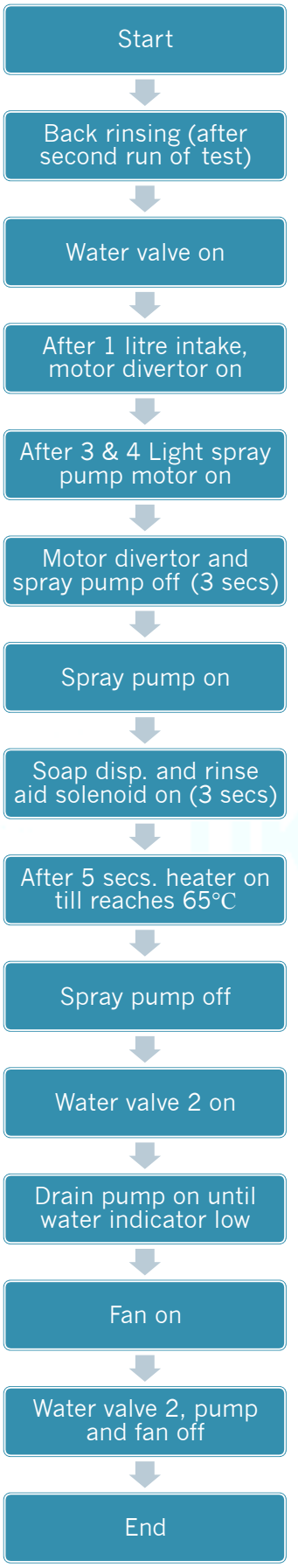


See Next Page...

1. Select program pos. 1
2. Turn off mains switch
3. Push and hold start
4. Turn on main power whilst holding start
5. Release the start button when the LED flashes
6. Test the LEDs by using the buttons and program knob then set to position 1
7. Start the active test by pressing the start button again
8. Failure indication
9. Repair the failure to continue
10. Clear by holding the start button for longer than 1.5 secs.
11. Start the active test again to see if the fault has been rectified

Program sequence LED

PS1 1 LED pre-wash
PS2 2 LED Main wash, intermediate rinse and final rinse
PS3 3 LED drying phase (regeneration)
PS4 4 LED Goes off if any button is pressed and also approx. 30 minutes after program completed



Notes:

The active test program runs to the failure position and stops or, if there is no failure it will run to the end.

To cancel the test program push the start button for longer than 1.5 seconds.

Not enough salt or rinse aid will not stop the program running.

When switching off the main switch or interrupting the mains, during the test program runs, then the alternating of the spray arms changes in the test program from 30/30 sec. to the rhythm of the main wash 5/3 min.

After finishing the test program (End LED lights and/or the start LED goes off) then the appliance has to be switched off.

If this is not done, then the next main wash will be made with the frequency of the Service Test Program -30/30 sec. instead of 3/5 min.

When the failure position is reached the failure indication is indicated on the next page.

This step can be skipped by a short press of the start button to advance.

Run for at least three minutes to ensure no failure before skipping this stage

Alarm or failure displayed	On LED, flash code from START	On 3 digit LCD display
F1 – NTC failure	Start LED 1 flash, I second pause then repeated	Start LED 1 flash, I second pause then repeated F 1
F2 – Water leak detected	Start LED 2 flashes, I second pause then repeated WAL LED	Start LED 2 flashes, I second pause then repeated F 2
F3 – Heating system	Start LED 3 flashes, I second pause then repeated	Start LED 3 flashes, I second pause then repeated F 3
F4 – Drain error	Start LED 4 flashes, I second pause then repeated	Start LED 4 flashes, I second pause then repeated F 4
F6 – Water tap closed	Start LED 6 flashes, I second pause then repeated WTC LED	Start LED 6 flashes, I second pause then repeated
F7 – Flow meter faulty	Start LED 7 flashes, I second pause then repeated	Start LED 7 flashes, I second pause then repeated F 7
F8 – Water level fault	Start LED 8 flashes, I second pause then repeated	Start LED 8 flashes, I second pause then repeated F 8
F9 – Continuous filling	Start LED 9 flashes, I second pause then repeated	Start LED 9 flashes, I second pause then repeated F 9
F0 – Sensor failure	Start LED 10 flashes, I second pause then repeated	Start LED 10 flashes, I second pause then repeated F 0
FA – OWI fault	Start LED 11 flashes, I second pause then repeated	Start LED 11 flashes, I second pause then repeated F A
FB – DV fault	Start LED 12 flashes, I second pause then repeated	Start LED 12 flashes, I second pause then repeated F B
FC – ASA fault	Start LED 13 flashes, I second pause then repeated	Start LED 13 flashes, I second pause then repeated F C

Fault Codes & Causes

FO Sensor failure (when a dirt sensor is installed)

Will not be indicated to the customer. The programs will finish even if there is a failure. The failure is indicated only in the active test program after 10 - 30 seconds. The active test program will cancel as well, if there is a failure. If the failure in a sensor program appears, the machine will always choose the highest consumption (best cleaning result).

- No or wrong output from the sensor
- Illogical or unreal measurement results

Reason

- Defective electronics in the sensor
- Optoelectronic parts in the sensor defective
- The sensor is dirty
- Connection between sensor and PCB broken

Attention: The failure code will not store

F1 - NTC break

Temperature out of the normal value (-3°C till +85°C)

- Temperature inside higher than +85°C
- NTC defective
- Dishwasher is frozen, less than -3°C

If the temperature is less than -3°C, fill the appliance with a cup of warm water to warm it up before you start it.

F2 - Water Leakage

- Water is in the bottom tray

Floater (LS6) switches off the WV1 and the electronic switches on the DPM until WI reports that it is empty

F3 - Heating System Defective

Indicated after app. 25 minutes (1. check after 5 min., after that follow 2 more checks, before the failure is indicate)

- Heats too slowly (less than 1,5 °C in 10 min)
- Heating (HEW) defective
- Relays (RE2) on control board (CB) is defective
- NTC - resistance fluctuation

F4 - Draining Failure

Drain pump starts and after 4 min the WI detects that it is “not empty”

- Drain pump (DPM) defective
- Siphon closed
- Control board (CB) defective
- OWI/WI defective

F6 - Water Tap Closed

Water valve (WV1) is switched on but flow meter (FM) sends no impulses (less than 10 imp. in 10 sec.) and the water indicator (WI) is off (empty)

- Water tap closed
- Water inlet hose blocked
- Water inlet valve ((WV1) defective
- Flow meter (FM) detective (leads to FM failure)

F7 - Flow Meter Failure

Water inlet valve (WV1) is switched on and the water indicator (WI) is on (full)

- Flow meter (FM) sends too few impulses (less than 10 imp. in 10 sec.)
- Water tap closed during water inlet
- Water inlet hose blocked
- Water inlet valve (WV1) defective
- Flow meter (FM) defective

F8 - Water Level Failure

Failures are supervised over the whole program. Mechanical water indicator WI Spray pump works, the WI switches more than 20 times in 2 minutes back

Optical Water Indicator
Always after the OWI - signal is missing the electrical components are turned off for 5 sec. If after the 5 sec. the OWI-Signal is still not present then it notes a failure F8. If, however, after the 5 sec the OWI-Signal is present, then the water-level is filled to 6 Ltr. and the electrical components are again turned on. After the OWI signal is missing for a second time note an F8 failure.

- WI defect? Should switch on after approximately a 1 litre intake of water
- Filter blocked
- Water foaming giving false reading
- Pot has turned off and is filled with spray water
- No stable spray pump (SPM) working

F9 - Continuous Water Inlet

Water inlet valve (WV1) is switched off, water indicator (WI) on, flow meter (FM) sends impulses (more than 10 imp. in 10 sec.)

- Water inlet valve (WV1) mechanically not closed
- Triac (CB) permanently switched on. (short circuit)

Reaction: interval 30 sec. drain pump on / 20 sec. drain pump off in interval

FA - Optical Water Indicator (OWI) – Failure

If the electronics signals of the flow meter for the 3,4 Ltr of water has been received on permanent wash system and 2,5 Ltr on alternating wash system and the OWI signal
"Water in the sump" is missing then take note

- Lens will be cleaned. Water inlet off for 10 Sec and SPM on for 10 Sec.
- If after that there is still no signal "Water in sump", then the appliance goes into failure mode FA

FB MDV (Motor Diverter) - Failure

Failure condition
Start water inlet. After 1.5 sec switches the WI if not then within 120 sec. a signal comes from the MDV to the control board, lower or upper spray arm is functioning, then the FB will indicate

Check:
Do the upper and lower spray arms alternate turns in approx 30-40 sec.? If only one turns then there is a failure.
Is the diverter disc in the sump blocked? Yes, unblock it.
Does 230V come from the control board (ZW,DVH) to the MDV? If not then change the PCB.

How to check
Start test program and wait until backrinse is over. After the start of the regular water-inlet must come 230V within 30 sec. for approx 20 sec. to the MDV

- Is the winding of the MDV or cable to the MDV interrupted? (ZW,DVH) resistance of the MDV should be approx. 6.3 K
- Is the signal cable between the MDV and control board (SAB,DVL) carrying 5v?

FC- ASA (Automatic Salt Adaptation)/ Water hardness sensor failure

Will only be indicated in the active test program

Failure condition:
Electronic on the water softener detects high electrical resistance in the resin.

Check.
Cables on the sensors of the water softener interrupted or weak contact?
Cables from the control board (ASA) to WHS electronic on the water softener interrupted or weak contact?

Fagor

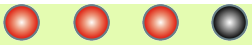
VFU651T Dishwasher

May well apply to other models fitted with the same PCB as well as some Tecnik dishwashers prior to production in 2001 as these were often made by Fagor, also see the CDA/Whirlpool codes for the TKD795

LED	Fault
	Door not closed
	Not filling
	No drain
	Control card, element or safety thermostat
	Temperature control failure
	Overheating
	Leak or inlet hose failure

DW-24E1 Dishwasher

DW-24EI may also apply to other models fitted with the same PCB

LED	Fault
	Door not closed
	No fill
	No drain
	Overfill (Flood protection??)
	Element or PCB failure
	Temperature control failure
	Overheat, safety stat activated
	Leak, float switch activated

Fagor Washing Machines (General)

F01 - No fill detected after 8 minutes.
F02 - No drain detected after 6 minutes.
F04 - Door lock.
F05 - NTC.
F06 - No heat detected after 15 minutes.
F07 - Over fill or pump out of circuit.
F08 - Motor
F09 - Motor not reversing.
F10/11/12 - Various pcb comms problems.

C03 - Out of balance protection activated.

Indesit Group Products

One of the largest manufacturers in the world Indesit are very protective of their service information across the Hotpoint, Indesit and Ariston brands. In this section we cover the most common faults that we have encountered that have had little or no explanation before now.

Indesit uses what appears to be a more or less standard software for the machines now known as “EVO2” across which there is much commonality in the fault codes for laundry appliances. However, some do vary from appliance to appliance with codes used or not as applicable depending on the specification and features available. For much more on this software please refer to page 27.

There also appears to be almost a paranoia about loose connections to the PCBs in these machines so it may be well worth making sure that you have good connections to the boards before condemning them.

In the next edition we hope to add more information about the EEPROMs.

Indesit washer and washer dryers with rotary dial

This appears to be a variation of the EVO2 software.

1 Short circuit triac
2 Motor jammed check plugs
3 NTC open/short circuit
4 Pressure switch jammed on empty
5 Pressure switch jammed on full
6 Program selector management error
7 Heater relay stuck
8 Heater relay can’t be activated(common on new boards try tapping relays)
9 Incompatible EPROM
10 Pressure switch not sensing correctly
11 Pump can’t be activated
12 Vacant
13 Dryer fan does not work dryer NTC faulty
14 Dryer element
15 Dryer element not working dryer relay on PCB probable

If there are no flashes but door lock led lit and appliance fails to start check door lock, motor heater and associated connections

Where there is a LCD display all codes will be preceded with an F except H20 = not filling

Indesit WD late washer dryer e.g. WDE12

F13 dryer Thermistor circuit fault.

On some recent model Hotpoint/Indesit/Ariston machines if the Pre wash light flashes, machine will not start but no obvious error codes are displayed. Check the fill valves for OC condition.

Indesit WIDL Washer Dryers

(WIDL102, 126, 146 – EVO2 software)

The keys (1,2,3 & 4) are the options buttons and are referred to from left to right, with left being number 1.

LCD Code	Key 1	Key 2	Key 3	Key 4	Likely causes
F01	●	●	●	○	**Motor triac shorted** Check motor and module connections
F02	●	●	○	●	**Motor jammed or tacho detached** Check motor and module connections
F03	●	●	○	○	**NTC either short or open circuit** Check Thermistor and module connections
F04	●	○	●	●	**Pressure switched jammed empty** Check pressure switch and module
F05	●	○	●	○	**Pressure switch jammed full or pump blockage** Check pump and pressure switch
F06	●	○	○	●	**Not used** No use
F07	●	○	○	○	**Heater relay stuck** Check heater and module connections
F08	○	●	●	●	**Heater relay stuck** Check pressure switch, heater and module connections
F09	○	●	●	○	**EEPROM error** Check/change EEPROM
F10	○	●	○	●	**Pressure switched not reading** Check pressure switch and module
F11	○	●	○	○	**Pump failure** Check pump, wiring and module connections
F12	○	○	●	●	**Communications failure** Check module connections between the two boards
F13	○	○	●	○	**Drying failure** Drying NTC failure or possible fan motor jammed
F14	○	○	○	●	**Drying Heater** Check dryer element
F15	○	○	○	○	**Drying relay** Check heater relay
F16	●	●	●	●	**Not used** No use
F17	●	●	●	○	**Door Lock** Check door, door lock and module connections
F18	●	●	○	●	**Communications error** Used on 3 phase motor. Replace power card.

If you are lucky enough to have a hardware key from Merloni then the F** code will be displayed on it.

NOTE: False errors can be given by a faulty earth connection, make sure that the earth is good.

Faults that do not show a fault code

- Water turned off at the tap or inlet valve open circuit
- Some motor faults such as faulty carbons, plug out. The machine will lock but not start.
- Open field coil will show fault F01
- Motor TOC operates during the cycle, machine will restart when the TOC resets
- Wash element goes OC when full and operating. Will continue to wash.

Hotpoint Microprofile Washers & Washer Dryers

E10 No cold fill .
E11 No hot fill.
E12 No mixed fill
E13 Check the water supply.
E14 A fault with the water heating has occurred.
E15 Water is not being pumped out and a flood condition could occur.
E16 Extremely high water.
E17 Door not closed properly.
E20/1 The Thermistor resistance has drifted or the temperature scanning sequence is incorrect.
E30/31 A motor drive problem has occurred
E40 Water below protection level during a heat step.
E41 Water level detect sequence incorrect.
E50/51 Customer language and wash programme have not been saved. The system will run with default conditions (1000rpm max and English language). Book a service engineer to re-programme your product.

Hotpoint WF & WD and Indesit WIDL Machines (without digital display)

The digital display models will generate the actual fault code, i.e., F01 etc which corresponds to the EVO2 software.

The On/Off neon together with a combination of the five left hand option neon's will flash if a fault is detected. These codes are reading from the top neon down.

F01	Light 4 .	Motor triac
F02	Light 3 .	Motor, jammed/ tacho
F03	Lights 3&4	NTC fault
F04	Light 2	Pressure switch stuck on empty
F05	Lights 2&4	Pressure switch stuck on full
F06	Lights 2&3	N/A?
F07	Lights 2, 3&4 .	Heater relay
F08	Light 1	Heater relay
F09	Lights 1&4 .	EPROM/setup error
F10	Lights 1&3	Pressure switch not sensing
F11	Lights 1, 3&4 .	Pump/draining error
F12	Lights 1&2	Communication error
F13	Lights 1, 2&4	Dryer ntc/ fan motor
F14	Lights 1, 2&3	Dryer heater
F15	Lights 1, 2, 3&4	Dryer heater relay
F16	.	N/A?
F17	Light 4	Door lock
F18	Light 3 .	Communication error (3 phase motor) power board

Faults without error codes

If the motor is O/C the machine will not fill or operate. A main heater failure will not generate any error codes, the machine will not advance out of the wash cycle.

See the EVO2 notes further on for more information on these faults.

Hotpoint WMA 30/40/50 Last Error detected codes

Ensure that the main selector switch is in the Off or O position.

Press and hold the Super Rinse and Rinse Hold buttons whilst selecting H on the selector knob, and continue to hold for five seconds.

The 'Super Rinse', 'Rinse Hold' and 'Wash' LED's will now be flashing.

Press the Start/Cancel button for two seconds.

The 'Rinse Hold' LED will be lit and the 'Super Rinse' LED will be flashing.

The 'Final Spin' LED could be on or off at this stage.

Press the Rinse Hold button briefly.

The 'Rinse Hold' LED will be flashing & the 'Super Rinse' LED will be on steady to indicate the last error routine has been initiated.

Rotate the main programme selector knob slowly anti-clockwise to programme A

Slowly rotate the selector switch clockwise through four positions A to D inclusive, pausing briefly at each programme position.

Starting with A make a note of the 'Final Spin' LED status. it will be on or off.

When the selector knob reaches D you will have a series of On's and Off's. This 4 bit binary code should be recorded and checked against the error codes in the table below.

Fault Indicated	A	B	C	D
No spin due to OOB	●	○	○	○
Start button pressed with door open or O/C interlock	○	●	○	○
Failure to fill in allotted time	●	●	○	○
Failure to empty in allotted time	●	○	●	○
No feedback from Thermistor	○	●	●	○
Tacho error	●	●	●	○
No feedback from Tacho / motor O/C	●	○	●	●
Motor triac short circuit	●	○	○	●

Hotpoint WM/WD Ultima Range

All seem to use the EVO2 software

Wet Test

Hold down buttons **A** & **C** then press **On**. Press Start and machine should begin the sequence

There are ten steps in all.

Always allow sequence to finish or press **Cancel** to clear.

Step.

1. Fill cold for 40 secs, no drum action.
2. Temp controlled fill to 50° with normal action at wash speed.
3. Pause for 20 secs.
4. Fill from Fabric Conditioner valve
5. Four tumbles of normal action at wash speed (as temp reaches 50° display will show temp instead of step number)
6. Pump for 40 secs without agitation.
7. Pump & spin at 1000rpm for 30 secs.
8. Pump & Spin at 1200 for 10 secs.
9. Pump as drums slows to a stop.
10. Stop.

Fault Codes

Flashes	Fault Detected	Possible Causes
F1	Motor triac short	Check motor and module connections
F2	Motor jammed or tacho off	Check motor and module connections
F3	NTC shorted or OC	Check NTC, connections and module connections
F4	Pressure switch jammed empty	Check PS, wiring and module connections
F5	Pressure Switch jammed on full Possible pump block	Check PS, wiring and module connections Check pump etc. for blockage
F6	Not Used	
F7	Heater relay stuck	Check heater wiring and module connections
F8	Heater relay stuck	Check PS connections for heater, wiring and module connections
F9	Setup error	Incorrect or faulty EEPROM fitted, check EEPROM
F10	Pressure switch	Check PS, wiring and module connections
F11	Pump	Check pump connections and module connections
F12	No comms between cards	Check module connections
F13	High dryer temperature	Check dryer motor, dryer NTC and connections possible restricted airflow
F14	Dryer not heating	Check (one-shot), element and connections to module, fan motor, valve
F15	Dryer element relay	Check PS, wiring and module connections
F16	Not used	
F17	Door lock	Check door lock, door and connections
F18	Comms Error on 3 phase motor	Replace power board

EVO II (Ultima) Three Phase Motor

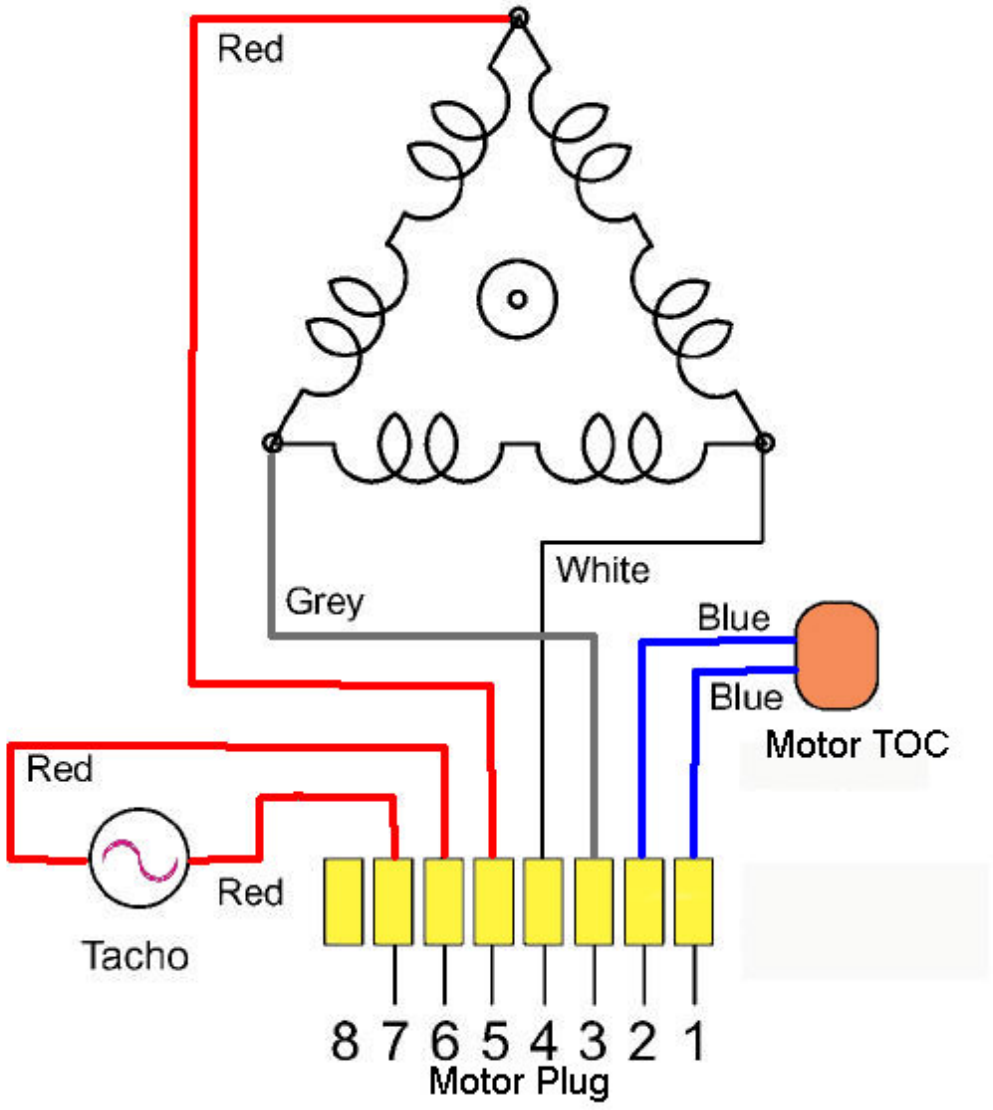
The new range of EVOII washing machines has a machine fitted with three-phase motor.

Compared with the commutator motor there are no brushes and the stator is delta connected internally as shown in the diagram below.

Compared with models fitted with a traditional commutator motor the power card is different and becomes a special code for three-phase machines.

The three-phase motor has a thermal protector that cuts in turning off the supply to the power part of the electronic card and also to the motor.

The diagram below shows you the connection diagram of the windings as well as the pin assignments to the motor.



Demo Mode on Ultima Washing Machines

There are three versions of this function which are date code dependant as follows:

V1 – Date Code 39, March 2005

Activation

- From power on press both **start/cancel** and **on/off** together until "**dON**" is displayed
- Press **start/cancel** button only and "**tESt**" is displayed along with the temperature and spin symbols

Deactivation

- Press **start/cancel** button until **all** the LEDS light
- Press both **start/cancel** and **on/off** together until "**dOFF**" is displayed
- Machine should now return to normal operation

NOTE: The default screen shown both before entering demo mode and exiting should be displaying the program as selected on the timer knob.

V2 – Date Code 39, March 2005 to Date Code 42, June 2005

Activation

- Same as V1

Deactivation

- Press the **cancel** button and the machine should return to normal operation

V3 – Date Code 43, July 2005 onwards

Activation

- Press both **start/cancel** and **on/off** together along with the **top left option button** until "**dON**" is displayed

Deactivation

- Press both **start/cancel** and **on/off** together along with the **top left option button** until "**dOFF**" is displayed

Operating the Demo Mode

1. Select the program, temperature and spin, end time should be displayed, confirm
2. Modify program using the wash **modifier** button, adjustments will be displayed
3. To deselect modifications, press the **modifier** button again
4. If a modifier is unavailable on the selected program the machine will beep three times to indicate this
5. Some modifiers cannot be used together, if this happens the second selection will be deleted
6. To run the demo press **start/cancel** and the machine will run through a wash cycle in approx one minute
7. When the demo cycle is completed "**End**" will be displayed and the machine will beep before defaulting back to display "**On**"
8. The door cannot be opened until the keyhole icon is displayed
9. To cancel press and hold **start/cancel** until a beep is heard and the machine should display "**On**"

Error Code H20

If the machine is not in the demo mode and this error is displayed it means that there is no water being supplied to the machine.

To cancel press and hold **start/cancel** then press again to cancel the drain and the machine should now be reset and display "**On**" as usual.

NOTE: When activated "Child Lock" disables all other buttons and functions. To cancel the child lock simply press and hold the button for more than three seconds.

Hotpoint & Creda BWD12/IWD12

Faults are indicated on these built-in washer dryers by a series of flashes from the mains or door lock LED and the program dial will rotate clockwise continually. Uses EVO2 software.

Flashes	Fault Detected	Possible Causes
1	Motor triac short	Check motor and module connections
2	Motor jammed or tacho off	Check motor and module connections
3	Rear wash NTC shorted or OC Machine may fill and empty continuously	Check NTC, connections and module connections
4	Pressure switch jammed empty	Check PS, wiring and module connections
5	Pressure Switch jammed on full Possible pump block	Check PS, wiring and module connections Check pump etc. for blockage
6	Programmer error	Check selector and all connections
7	Heater relay stuck	Check heater wiring and module connections
8	Heater relay can't be activated	Check PS connections for heater, wiring and module connections
9	Wrong EEPROM	Incorrect or faulty EEPROM fitted
10	Pressure switch	Check PS, wiring and module connections
11	Pump	Check pump connections and module connections
12	Not used	
13	Dryer fan or NTC faulty	Check dryer motor, dryer NTC and connections
14	Dryer element	Check element and connections
15	Dryer element relay	Check PS, wiring and module connections

Hotpoint WT400 Top Loading Washing Machine

Uses EVO2 software and looks very much like a Philco toploader.

Fault Codes

Flashes	Fault Detected	Possible Causes
F1	Motor triac short	Check motor and module connections
F2	Motor jammed or tacho off	Check motor and module connections
F3	NTC shorted or OC	Check NTC, connections and module connections
F4	Pressure switch jammed empty	Check PS, wiring and module connections
F5	Pressure Switch jammed on full Possible pump block	Check PS, wiring and module connections Check pump etc. for blockage
F7	Heater relay stuck	Check heater wiring and module connections
F8	Heater relay stuck	Check PS connections for heater, wiring and module connections
F9	Setup error	Incorrect or faulty EEPROM fitted, check EEPROM
F10	Pressure switch	Check PS, wiring and module connections
F11	Pump	Check pump connections and module connections
F12	No comms between cards	Check module connections
F17	Door lock	Check door lock, door and connections
F18	Comms Error on 3 phase motor	Replace power board

Hotpoint Aqualtis

Hotpoint AQXXF149PI, PM, HPI and Ariston AQXXF129 using EVO2 software.

Demo Mode

To activate hold start/reset and the 4th button (bottom one) for six seconds and "D" will be displayed in the spin speed display.

To deactivate, press and hold start/reset as power is applied for three seconds.

NOTE: Demo mode is not available on all production runs

Fault Codes

Flashes	Fault Detected	Possible Causes
F01	Motor triac short	Check motor and module connections
F02	Motor jammed or tacho off	Check motor and module connections
F03	NTC shorted or OC	Check NTC, connections and module connections
F04	Pressure switch jammed empty	Check PS, wiring and module connections
F05	Pressure Switch jammed on full Possible pump block	Check PS, wiring and module connections Check pump etc. for blockage
F07	Heater relay stuck	Check heater wiring and module connections
F08	Heater relay stuck	Check PS connections for heater, wiring and module connections
F09	Setup error	Incorrect or faulty EEPROM fitted, check EEPROM
F10	Pressure switch	Check PS, wiring and module connections
F11	Pump	Check pump connections and module connections
F12	No comms between cards	Check module connections
F18	Comms Error	Faulty comms between the microprocessor and digital signal processor

The same fault code table applies to the Aqualtis AQXXD169PM with a digital display.

EVO2 Software Fault Finding

As stated Indesit (Hotpoint, Ariston etc.) use a software in the machines that appears on many of their machines so, whilst the machines may differ slightly in terms of specification, features and EEPROM used the same basic core software seems to be used across a wide range of machines. This makes life a bit easier on these products in some ways as there are common elements and failures to a lot of these machines as listed below.

NOTE: Modules used in production do not have replaceable EEPROMS. If you have to replace a module for a machine that does **not** have a plug in EEPROM then you will have to order both the **module and the EEPROM** as separate parts. If the EEPROM is in a socket then it is replaceable without changing the PCB.

Please be aware that you may have to adapt the connectors to each machine by tracing the wiring, but this should make that much easier to do.

Erroneous Faults

There are instances where the machine will not work but no error code is displayed. The natural course is to assume that the module is faulty, but there are several things that can be looked at before reaching this conclusion:

- No water supply to the machine – Check
- Inlet valve/s faulty – Check
- Some motor faults cause the machine to allow the door to lock but appears dead otherwise
    - Check motor field windings
    - Check carbons
    - Check wiring loom and connectors
- If the motor TOC operates during a wash program the machine will stop mid-cycle and not display a fault code. When the TOC resets the program will restart.
- If the wash heater fails whilst mid cycle and the pressure switch reading "full" then a fault may not be displayed but the machine will wash for an extended period

Please note these simple faults if you come across a machine that appears to have a dead PCB.

Additional Fault Code Information

F01 – Motor Triac Short

- Check motor continuity
- Check the connector on the PCB for the motor (often J9)
- If these fail change EEPROM or module as applicable

F02 – Motor jammed or tacho failure

- Check that the motor is not seized or similar type damage
- Check the connector on the PCB for the motor (often J9)
- Check tacho for continuity (170Ω ??)
- If applicable check contacts 6 and 7 on J9 connector
- If all the above fails then change the EEPROM and/or PCB

F03 – Wash Heater Thermistor Fault

NOTE: the heater relay stuck can also cause this problem and this fault is only signalled when the machine fills to level and the pressure switch activates to signal that level has been reached.

- Check connectors to module (often J3 and J8) are secure
- Check Thermistor
- Check heater
- Check wiring loom
- Where applicable remove connector J3 and check contacts 1, 2 and 4
- Check the resistance of the thermistor, at room temperature (20°C) this should give a reading of around 20KΩ

F04 – Pressure switch jammed, empty

The machine will fill constantly until the overfill protection is reached when the water level reaches, approximately, half way up the door glass. At that point the drain pump will kick in on the overflow contacts from the pressure switch.

- Check pressure switch connector on module (often J3)
- Check pressure switch connector or connections

- Check pressure chamber or hose is clear
- Check wiring between pressure switch and PCB
- If all the above fails then change the EEPROM and/or PCB

F05 – No drain or pressure switch jammed full

- Check pump is clear and operational, usually windings should read approx 165Ω
- Check pressure switch operation
- Check that the pressure chamber and pressure hose are clear
- Check pressure switch wiring on PCB (often connector J3)
- If all the above fails then change the EEPROM and/or PCB

F07 – Heater relay or wash element faulty

This fault will only be displayed when the pressure switch reads the machine as being empty.

- Check pressure switch connection on PCB (often J3)
- Check wiring to wash heater
- Check wash heater continuity, should be about 25Ω usually
- Check pressure switch wiring and connections
- Check operation of pressure switch
- Check that the pressure chamber and pressure switch hose are clear
- If applicable check contacts 1,2 and 4 on connector J3 are good
- If all the above fails then change the EEPROM and/or PCB

F08 – Heater relay stuck or pressure switch jammed full

- Check wash heater continuity, should be about 25Ω usually
- Check pressure switch connection on PCB (often J3)
- Check pressure switch wiring and connections
- Check pressure switch operation
- Check that the pressure chamber and pressure switch hose are clear
- If applicable check contacts 1,2 and 4 on connector J3 are good
- If all the above fails then change the EEPROM and/or PCB

NOTE: In high humidity conditions where condensation forms F08 may be displayed

F09 – Setup Error

- If the module has a soldered in EEPROM replace module and EEPROM
- If the EEPROM is the plug-in type then check that the EEPROM is properly in position
- If all the above fails then change the EEPROM and/or PCB

F10 - Pressure Switch Failure

If the machine can be started and will fill see if the water levels are correct.

- Check pressure switch connection on PCB (often J3)
- If applicable check contacts 1,2 and 4 on connector J3 are good
- Check pressure switch wiring and connections
- If all the above fails then change the EEPROM and/or PCB

F11 – Drain pump failure

- Check pump connection and wiring
- Check pump is clear and operational, usually windings should read approx 165Ω
- Check pump connection on PCB (often J9)
- If applicable check contacts 8 and 9 on connector J9 are good
- If all the above fails then change the EEPROM and/or PCB

F12 – Failed communication between display and power PCBs

- Disconnect the machine from the mains for five minutes to reset then retry the machine
- Check edge connectors are good to the display card
- Check all the contacts are good
- Check edge connectors on main PCB
- If all the above fails then change the EEPROM and/or PCB and/or the display PCB

F18 – Failed communication between microprocessor and DSP (Digital Signal Processor)

- Disconnect the machine from the mains for five minutes to reset then retry the machine
- Replace the power card

Service Notes For EVO2 based machines

Anti-interference filter

Mounted at the back of many EVO2 based machines the anti-interference filter, or mains filter as it is often known, is usually bolted to the back of the cabinet close to the mains inlet and terminal block. If this filter goes open circuit then there is often no motor action and no code (as far as we know) displayed to indicate the nature of the failure.

Please check this on “no motor action” faults before replacing the PCB.

Faults that do not show a fault code

- Water turned off at the tap or inlet valve open circuit
- Some motor faults such as faulty carbons, plug out. The machine will lock but not start.
- Open field coil will show fault F01
- Motor TOC operates during the cycle, machine will restart when the TOC resets
- Wash element goes OC when full and operating. Will continue to wash.

Hotpoint Date Code Chart

		January	February	March	April	May	June	July	August	Septemb	October	Novembe	Decembe
1994	2002	01	02	03	04	05	06	07	08	09	10	11	12
1995	2003	13	14	15	16	17	17	19	20	21	22	23	24
1996	2004	25	26	27	28	29	30	31	32	33	34	35	36
1997	2005	37	38	39	40	41	42	43	44	45	46	47	48
1998	2006	49	50	51	52	53	54	55	56	57	58	59	60
1999	2007	61	62	63	64	65	66	67	68	69	70	71	72
2000	2008	73	74	75	76	77	78	79	80	81	82	83	84
2001	2009	85	86	87	88	89	90	91	92	93	94	95	96

Hotpoint HVL 200.211,222,241.

Lights flashing from left to right give you the error code as indicated below.

F01..OFF OFF OFF Flash OFF Motor triac short circuit: check motor & module connections
F02 OFF OFF Flash OFF OFF Motor jammed / tacho detached: check motor & module connections
F03 OFF OFF Flash Flash OFF NTC short/open circuit: check thermistor & module connections
F04 OFF Flash OFF OFF OFF Pressure switch jammed on empty: check switch & module
F05 OFF Flash OFF Flash OFF Pressure switch jammed on full or pump blocked: check pump & switch
F06 OFF Flash Flash OFF OFF N/A
F07 OFF Flash Flash Flash OFF Heater relay stuck: check heater and module connections
F08 Flash OFF OFF OFF OFF Heater relay stuck: check pressure switch, heater & module connections
F09 Flash OFF OFF Flash OFF Setup error: check eeprom
F10 Flash OFF Flash OFF OFF Pressure switch not sensing: check switch & module connections
F11 Flash OFF Flash Flash OFF Pump cannot be activated: check pump, connections & wiring
F12 Flash Flash OFF OFF OFF No communication between cards: check module connections
F13 Flash Flash OFF Flash OFF High Temperature Rise in Drying: Reduced airflow, check fan motor & filter for blockage.
F14 Flash Flash Flash OFF OFF No Heat when Drying: Check one shot thermostat, heater & module connections
F15 Flash Flash Flash Flash OFF Drying Heater Relay Fault: Possibly open circuit.
F16 OFF OFF OFF OFF Flash N/A
F17 OFF OFF OFF Flash Flash Door lock error: check door, door lock & module connections
F18 OFF OFF Flash OFF Flash Communication error (3 phase motor): replace power board

Indesit Washing Machine WIXE127UK & V

FO1 Motor Triac S/C: Check Motor & Module connections
FO2 Motor jammed/Taco detached: Check Motor & Module connections
FO3 NTC S/C or O/C: Check Thermistor & Module connections
FO4 Pressure switch jammed or empty: Check Switch and Module
FO5 Pressure switch jammed on full or pump blocked: Check Switch and Module
FO6 N/A
FO7 Heater relay stuck: Check the heater and Module connections
FO8 Heater relay stuck: Check Pressure switch, heater and Module connections
FO9 Set up Error: Check Eeprom
F10 Pressure switch not sensing: Check switch and module connections
F11 Pump cannot be activated: Che ck pump, connections & wiring
F12 No Communication between cards: Check Module connections
F13 N/A
F14 N/A
F15 N/A
F16 N/A
F17 Door lock error: Check door, door lock & module connections
F18 Communications error (3 phase motor): replace power card.

WIA autowashers
Error shown by binary code using the following lamps:

Spin indicator ------- 1
Rinse indicator ------ 2
Wash indicator ----- 4
Spin option ---------- 8
Quick wash option - 16

Add up for fault codes, which are the same as above.

Hotpoint WML & Possibly Other Recent Indesit Versions

Read from **bottom to top** starting with the door lock light as being number 1.

Uses 5 led's in all.

led lit
.....5...4...3...2.....1
F01 off off off off **on**
F02 off off off **on** off
F03 off off off **on on**
F04 off off **on** off off
F05 off off **on** off **on**
F06 off off **on on** off
F07 off off **on on on**
F08 off **on** off off off
F09 off **on** off off **on**
F10 off **on** off **on** off
F11 off **on** off **on on**
F12 off **on on** off off
F17 **on** off off off **on**
f18 **on** off off **on** off

Fault codes same as WIDL codes.

CTD40/80/85 Dryers

F01 Motor triac in short circuit or Relay of motor welded closed.
F02 Blocked motor
F03 Front NTC open or short circuit.
F04 No pump connection
F05 No feedback from the pump
F06 Non used, active ·
F07 Non used, active ·
F08 Static heater Relay with NA/ NC contact welded closed
F09 Error set up file. EEEPROM is not programmed or not functioning.
F10 Common of heater open, one shot open.
F11 No pump connection
F12 No communication between display board and control board.
F13 Rear NTC open or short circuit.
F14 Not used, active ·
F15 Dynamic (PD) heater Relay with NA/NC contact welded closed.
F16 Not used, active ·
F17 Master Relay welded closed

Additional info for Hotpoint dryer Model CTD40 This uses the same codes as CTD80/85 but does not have a digital display The codes are displayed by flashing the ON/OFF neon and a combination of the top four left hand neon's and the Post Crease Care neon. Each neon has a numerical value.
The Post Crease Care neon = 16
The top left hand neon = 8
The Second neon down = 4
The Third neon down =2
The fourth neon down =1
The bottom neon is not used for fault codes.
You add the value of the flashing neon's and compare them to the fault codes for the CTD80/85

For example Neon's second & fourth from top are 4+1 = 5 this gives you fault code F05 and so on.

Microprofile Dryers

E1 The level of required dryness has not been reached within the time period.
E2 Thermistor or sensing circuit failure
E3 Heater plate over temperature. Check the filter and vent hose for a possible blockage.

Microtronic Dishwashers

E10 Fill or empty time out.
E11 Heater timed out. The heater has not reached the required level in a certain amount of time.
E20 Temperature under range.
E21 Temperature over range

Hotpoint BF72 Dishwasher (made by SMEG)

E1 1st flashing, 5th lit - flood protection system activated.
E2 2nd flashing, 5th lit - safety pressure switch activated.
E3 1st, 2nd flashing, 5th lit - no heat in time allowed.
E4 3rd flashing, 5th lit - temperature sensor fault.
E5 1st, 3rd flashing, 5th lit - no fill.
E6 2nd, 3rd flashing, 5th lit - no drain in time allowed.
E7 1st, 2nd, 3rd flashing - flow meter detected when not fitted, reset required.
E9 Same code as E1

Ariston LSI 61 & Indesit DI 61 Series Dishwashers

Reading the programme lights (left to right)

Heavy Wash	Flood protection system tripped
Normal Wash	Heater/Thermistor/thermostat fault
Rapid Wash	Pump fault/ Blockage
Soak Wash	Time out filling to level

Hotpoint, Indesit. And Ariston dish washers with 4 or 7 LED'S

Dishwasher fault codes with bit 100 PCB (written on serial no)

led1 Overflow water in base
led2 Inlet valve
led3 Thermistor
led4 Timeout heating
1+2 Timeout draining. EDIT 1+2 can also be Software recognition error.
2+3 timeout filling
1+3 Filters blocked
1+4 Software error
2+4 Heater
3+4 Timer hardware
EDIT For dishwashers with 7 Led's (BFI 68 etc) read Led's 4 to 7 as code numbers 1 to 4. ie; 4 = 1, 5 = 2 etc.

Hotpoint DWF 50 & DWM55 also FDW60 dishwashers

Combination of Led lights

Led 1 Intensive
Led 2 Normal
Led 3 Eco
Led 4 Fast
Led 5 Prewash
Led 6 Delicate

3 Overflow
4 Solenoid valve
5 Thermistor circuit
6 Timeout heating·
3+4 Timeout draining
4+5 Timeout filling
3+5 Circulation pump not working
3+5 Filters blocked
1+4 Software recognition error
4+6 Heating circuit
3+4 Hardware version (timer

Hotpoint DC27/28 NB different to the codes for DWF40/50 Dishwasher

Combination of Led lights
Led 1 Prewash / 3hr
Led 2 Wash / 6hr
Led 3 Rinses / 9 hr
Led 4 Drying / 12hr

1 Overflow (water in base)
1+2 Pump timeout, or Software recognition error (timer not programmed, wrong keypad)
1+3 Circulation pump not working
2+3 Not filling
2+4 Heating circuit not working
2 Solenoid valve 'broken'
3 Thermistor (NTC) circuit not working
4 Temp not reached whilst heating (poss. NTC detached from casing).

It is usually necessary to 'reset' the machine after a fault code has been displayed. To reset switch dishwasher OFF, rotate the selector switch to STOP/CHANGE and switch on, after a few seconds the LED'S will go out enabling a new programme to be selected.

Newer Hotpoint, Creda, Ariston and Indesit Dishwashers with LCD display

AL01 Anti flood switch operated
AL02 Valve or connections
AL03 Time out - drain
AL04 Thermistor (module)
AL05 Circulation pump
AL06 Time out - fill
AL07 Not used
AL08 Time out - heat
AL09 Software recognition error
AL10 Heating circuit
AL99 Communications error - connectors, cables etc.
H20 Time out - fill (taps)

Probably covers quite a few Merloni cloned models

Hotpoint FDF780/784 dishwashers

Possibly covers a few recent models of Indesit as well.

A- 1
Overflow (water in
base pan).
Leak from water line.

A- 2
Valve or Turbine faulty
or disconnected.
Inlet valve, connections, valve letting by when off.

A- 3 Time out draining Pump connections, blockage, module, circulation pump.

A- 4 Thermistor circuit Thermistor / module.

A- 5
Pressure Switch Mesh plate, filter or microfilter, pressure switch, circulation pump.

A- 6 Time out filling Customer's tap, Inlet valve, connections, timer, water turbine.

A- 7
Turbine faulty Module has detected no Turbine rotation. check turbine and wiring

A- 8 Time out heating Heater Open circuit or NTC thermistor detached from casing.

A- 9
Software recognition
error
Module not programmed, wrong keypad

A-10
Heating circuit Heating element, connections, module, relay, pressure switch.

A-12 Communication Error

A-13 Non-operative module

Indesit "IDE" Dishwashers

Demo Mode
If the machine shows "**dON**" then the machine is in demo mode. To exit press and hold the "Start/Reset" button for approximately four seconds and "**dOF**" should display indicating that demo mode has been exited.

To cancel a cycle in progress press and hold as above.

Test Mode

You have to do this one quickly and in order for it to work.

- Switch on
- Reset the machine
- Check the machine is empty and the door is closed
- Turn off with the selector at position "1"
- Wait 30 seconds
- Turn on with the selector still at "1" until the display goes from 8:88 to 2:00 after 9 seconds
- Switch off and wait until all the lights go out
- Turn on display changes from 8:88 to 2:00 in 2 seconds then turn the selector to position "2" and 1:12 should display
- Switch off. Wait for the lights to go out then set selector to position "1"
- Turn on and the pre-wash and dry lights will flash and the display will read --- (three dashes)
- Press start/reset and this will start the short test and rod LED
- For the long test select position "2" and the display shout read SAT or CO1
- When finished the test "END" or a fault code will be displayed

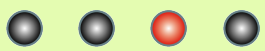
Short Test

The short test lasts about five minutes and does the following:

- Fill to level
- Circulation motor
- Heating
- Detergent Dispenser
- Regeneration
- Half load
- Draining
- Drying
- Fill then stop
- Exit by selecting reset.

Long test is pretty much the same only takes fifteen minutes and heats to 55°C.

Fault Codes

	Fault	Nature Of Fault	Possible Cause
	**A01**	Water in base	Leaking
	**A02**	Solenoid	Valve failure
	**A03**	Failure to drain (time)	Faulty pump or blockage preventing drain
	**A04**	NTC	NTC faulty
	**A05**	Filters blocked	Filter cleaning cycle failed
	**A06**	Fill failure	No water intake or valve faulty
	**A08**	Heating failure	Thermistor not attached or faulty
	A09	Software	Replace PCB

A10	Element	Heating element open circuit
A12	Hardware	Display module comms error

Indesit DE73 (Dish Washer) Error Messages

These codes are also used on several late model Hotpoint machines with digital display.

Should a Fault occur in use, the LCD display will show a fault Code to indicate the area of the fault & on faults A01 to A05 inclusive all active settings are reset & all loads deactivated :

A01 Aqua stop operated due to leak / overfill · machine drains until empty + 1 min.
A02 Heater Relay, Thermistor, Safety Stat or Element machine fills to Level Switch & Wash Pump runs.
A03 Thermistor, machine drains until Level Switch resets +1minute
A04 Unable to sense/reach temperature in 70mins. · machine drains until Level Switch resets +1 minute
A05 Level Switch not resetting in within 3' 20" of drain commencing
A06 Not used see also H20 at end
A07 Aux Wash pump Triac, check that Drain Pump is not disconnected or Aqua stop operated
A08 Wash Pump Triac, check Wash Motor operation· machine drains until Level switch resets+30"
A09 Main Wash Pump, check Wash Motor operation· machine drains until Level Switch resets+30"
A10 Fill Solenoid valve Triac, check valve/operation · machine drains until Level Switch resets+30"
A11 1/2 load Valve Triac or alternating W/Motor action
A12 Relay open circuit check Heater, replace Module if
A13 Dispenser Triac fault, Wash Cycle completes but with Dispenser Lid not functioning correctly
H20 Static 'Fill Time exceeding 6 minutes

Faults with no Fault Code display

Solenoid Valve Triac malfunction closed/open circuit -. Wash Cycle completes but with Salt collection not functioning correctly i.e. hard water problems
Fan Triac &/or Heater malfunction closed/open circuit -. Wash Cycle completes but with poor Drying
EPROM malfunction · appliance finishes cycle before it is completed & stops.
Should a fault occur in use, the Fault Codes above will be displayed & should initially be used as a guide in your diagnosis.. Note that after switching on the machine upon your arrival, a short delay may occur before that fault is displayed.

How to determine the date code

Serial No. 9 10 02 0895 for example is

First digit = year of manufacture - 1999
Second two digits = month of manufacture - October
Third two digits = Day of manufacture- 2nd October
Fourth remaining digits = Build number that day - 895

The 'Code' number on the rating plate identifies the factory etc , vital for correct parts ID.

Hotpoint two digit date codes from December 2003 to July 2006 start at 24 for December 2003 through to 55 for July 2006. Generally Hotpoint date codes only went up to 96 then started again. Many years ago some machines did go past 96, but I have not seen any for a long time. You can work back from DC24-Dec 2003, to get any earlier months.

They are normally the first two numbers of the serial number. Many years ago they used to be the last two numbers, often in **bold** or slightly apart from first five or six digits.

Jim Banks

Hotpoint frost free refrigeration (Mistral)

Test Procedure for this range is as follows:

Turn appliance off at the mains, press and hold **SAVE** and switch on at mains and release **SAVE**.
The sequence will now start:

Evaporator defrost heater will activate for 10secs, then
Gutter heater 10secs, then
F/F LED display 10 seconds, then
Evaporator fan 10 seconds

If a fault is found, the following error codes will apply -

E1 Freezer Thermistor open circuit.
E2 Freezer Thermistor short circuit.
E3 Fridge Thermistor open circuit.
E4 Fridge Thermistor short circuit.
E7 Evaporator Thermistor open circuit.
E8 Evaporator Thermistor short circuit.
E9 Temperature set switch open circuit
EA No feedback from Baffle
EB Fridge Baffle motor operating continuously
EE Defrost time out

Hotpoint Cooker Codes

Range / Stove / Oven Fault Codes Failure Code Fault Code Description

F0 Stuck touch pad Usually means that either the touch pad or the oven control (also called clock or ERC) is defective and needs to be replaced. If this fault code cannot be cancelled, replace the oven control (also called clock or ERC), touch pad, or both.

F1 Stuck touch pad Usually means that either the touch pad or the oven control (also called clock or ERC) is defective and needs to be replaced. If this fault code cannot be cancelled, replace the oven control (also called clock or ERC), touch pad, or both. Refer to F1 test at the top of this page for more information.

F2 During BAKE Control senses oven temperature above 615F-630F If actual over temperature condition occurred: Look for welded relay contacts on bake or broil relays. If this happens, replace oven control (also called clock or ERC).
If no over temperature condition occurred: Look for a high resistance connection or any other cause of high resistance in the oven temperature sensor circuit. Check sensor, sensor harness and sensor harness connection at sensor and oven control. Replace sensor if found defective.
Remember: Oven control (ERC) measures resistance of sensor circuit, not actual oven temperature.

F2 During CLEAN Control senses oven temperature above 915F-930F If actual over temperature condition occurred: Look for welded relay contacts. If this happens, replace oven control (also called clock or ERC).
If no over temperature condition occurred: Look for a high resistance connection or any other cause of high resistance in the oven temperature sensor circuit. Check sensor, sensor harness and sensor harness connection at sensor and oven control. Replace sensor if found defective. Check door lock switches.
Remember: Oven control (ERC) measures resistance of sensor circuit , not actual oven temperature.

F3 or F4 Open or shorted oven temperature sensor (RTD) Check sensor harness and harness connection between oven sensor and oven control. Replace oven temperature sensor (RTD) if wiring is ok.

F7 Stuck touch pad or bad clock Usually means that either the touch pad or the oven control (also called clock or ERC) is defective and needs to be replaced. If this fault code cannot be cancelled, replace the oven control (also called clock or ERC), touch pad, or both.

F9 Lock switch Check wiring to door lock switch (the wire harness may be connected wrong). Check for stuck lock switch.

Dyson

CR01 Error Codes

F1	Drum overloaded
F2	Out of Balance
F3	Outer Door open
F4	Inner Door open
F5	Not draining
F6	Not filling
F7	Tacho open circuit
F8	Overfilling
F9	Not used
F10	Over speed (motor triac failure)
F11	No Motor action
F12	Invalid temp signal
F13	Not heating
F14	Flooding
F15	Gear change failure (too slow)
F16	Not stopping (motor triac failure)
F17	Not used
F18	Gear change failure (too quick!)

Electrolux

EOC Range Oven

F 0. No alarm audible signal. Replace the Electronic Board.
F 1. Door not locking. Check Door Lock Mechanism.
F 2. Door not unlocking. As above and the Control Thermostat.
F 3. Self Check Error. Disconnect mains and reconnect after 5 minutes.
F 4. Temp Sensor, o/c or s/c. Replace as necessary.
F 5. Relay Contacts sticking. Replace Electronic Board.
F 6. Power Board Temp too high. Check fan and duct position for correct airflow.
F 7. Incorrect mains polarity. Check, reconnect and test.
F 8. Power to Interface Connection. Replace Electronic Board.
F 9. Microprocessor auto-resetting. Disconnect mains and reconnect after 5 minutes

Fisher & Paykel

Fisher & Paykel Dishdrawers

Fault codes are displayed in one of two ways. If appliance has a LCD display it will show a “F” code on the display. If appliance has a décor panel door and a Badge switch on the panel the fault is displayed on the programme selector in the drawer

Fault code (LCD type)

F1	Flood switch activated
F2	Motor not rotating
F3	Water temp > 85c
F4	No heat
F9	Electronics failure
U1	No water inlet

Fault code (badge type)

Rinse LED	Flood switch activated
Delicate LED	Motor not rotating
Delicate and rinse LED	Water temp > 85c
Fast LED	No heat
Normal and rinse LED	Electronics failure
Heavy and rinse LED	No water inlet

Dishdrawer Fun!

Get the Dishdrawer to play a tune..

1.Open one of the drawers and press POWER and release, then press and hold both the ADVANCE (located inside the drawer on the left) and the POWER button at the same time for a few seconds

2. The LCD screen segments should start flashing (including some you may have not seen before) and the back-light will flash

3. Then press the START/PAUSE button and your dishwasher will play a tune!! (The one used on the New Zealand F&P television commercial we think).

4. To reset your Dish drawer, disconnect the power supply for 10 seconds

The F&P development boys were obviously bored that day.

Fisher & Paykel Wall ovens

A1	CCU did not reset
C1	Oven temp >305c
F1	Ambient temp >85c
F2	Meat probe temp >110c
F4	Ambient sensor is o/c or s/c
F5	Oven sensor is s/c
F7	Meat probe sensor is s/c

Fisher & Paykel Titan Wall ovens

F1	Ambient temp >85C
F2	Cavity temp too high during pyro
F3	Oven temp >305c
F4	Power module failure
F5	Communications error between clock and power module
F7	Door lock fault

Gorenje

Gorenje washing machine error codes with LCD display

F1 Temp sensor fault, the wash program will end without heating.
F2 Door lock fault
F3 Water level was not reached.
F4 Inverter can't control the motor.
F5 No communication between electronic timer and Inverter
F6 Heater
F7 Pump Fault
F8 Motor fault
F9 Water inside machine (Aqua Stop)

GORENJE GV60010 & KGV600 Dishwashers

If there is a fault for which exist a service diagnostics, it appears as follows:

1. SOUND SIGNAL - 30 SECONDS
ERROR ON LED DISPLAY IS BLINKING – 30 SECOND
DRAIN PUMP IS ACTIVATED
2. AFTER THE END OF SOUND SIGNAL ERROR ON LED DISPLAY IS LIGHTING
3. DRAIN PUMP IS STILL ACTIVATED 30 SECONDS AFTER SOUND SIGNAL
4. AFTER DRAINING ERROR ON LED DISPLAY PERMANENTLY LIGHTING TILL THE SWITCHING OFF THE APPLIANCE
3. TEST PROGRAM

STARTING TEST PROGRAM
1. Open the door. Press and hold program button and switch on the appliance. On LED display stands 0A.
The appliance is ready.
2. Close the door and test program is activeted
3. During the test procedure, you can press program button to next step directly.
4. When test procedure is over, on LED display stands 00.

E1
APPLIANCE DOESN'T TAKE WATER
If pressure switch doesn't switch on in 4 minutes
than:
- Sound signal 30 sek., LED display blinking
- After sound signal LED display lighting
- Drain pump drains for 60 seconds

E2
APPLIANCE DOESN'T DRAIN WATER
If drain pump doesn't drain water in 4 minutes (pressure switch doesn't switch off) than:
- Sound signal 30 sek., LED display blinking
- After sound signal LED display lighting
- Drain pump drains for 60 seconds

E3
APPLIANCE DOESN'T HEAT WATER
If the heater doesn't heats water in 60 minutes than:
- Sound signal 30 sek., LED display blinking
- After sound signal LED display lighting
- Drain pump drains for 60 seconds

E4
AQUASTOP PROTECTION
If the micro switch of aquastop system is switched on for more than 2 minutes, than appliance switch off the water inlet and switch on the drain pump:
- Sound signal 30 sek., LED display blinking
- After sound signal LED display lighting
- Drain pump drains for 60 seconds

E6
TEMPERATURE SENSOR IN SHORT CIRCUIT
If the temperature sensor is in short circuit, appliance switch off the water inlet and switch on the drain pump:
- Sound signal 30 sek., LED display blinking
- After sound signal LED display lighting
- Drain pump drains for 60 seconds

E7
TEMPERATURE SENSOR IN OPEN CIRCUIT
If the temperature sensor is in open circuit (bad connection) appliance switch off the water inlet and switch on the drain pump:
- Sound signal 30 sek., LED display blinking
- After sound signal LED display lighting
- Drain pump drains for 60 seconds

Haier

Haier Produced dishwashers, 6 LED models

These dishwashers turn up in all sorts of guises from various brands such as CDA, Hygena, Diplomat, Teka, Caple and many more.

E1		**Door switch faulty**
E2		No fill error
E3		No drain error
E4		Temperature sensor
E5		Overfill/flooding

It is worth noting that these dishwashers suffer from extremely poor reliability problems, recalls are highly likely!

Multi-function Tablets – Chinese Dishwashers

It is also worth pointing out that these machines are very prone to “overfill” problems. This has been found in the field to be caused largely due to the use of multi-function tablets as they can “over foam” on the rinse cycle and cause flooding into the base. Both the Haier and Midea produced dishwashers seem to be prone to this issue.

Should the customer use rinse aid as well as a multi-function tablet with a rinse aid function, then the overfill condition can be reached far quicker and more severely.

The other cause of this can be the customer opening the door whilst the machine is on, for example to add an item once the program has started, as this causes a temperature differential, increases the interior pressure and forces water into the overflow flooding the base. That’s the official explanation, what we’ve found is that the machines are often poorly installed and opening the door causes a “wave” to the front which drains into the overflow and floods the base. Ask the customer if they do this and, if they do, tell them not to open the door once the program has started.

Haier Dishwashers with 8 LEDs

The four LEDs to the right of the door handle will indicate an error code.

OXXX - door switch
OOOX - no fill
OXOO - no drain
XOOX - ntc o/c
OOOO - overflow - flood protection activated.

Where "O" is lit and "X" is not.

Haier Washing Machines (General)

Err 1 - Door is not properly shut 20s after program has started.
Err 2 - Drainage error, water not emptied within 4 min.
Err 3 - Temperature sensor is not properly connected or damaged.
Err 4 - Heater may be broken.
Err 5 - The required water level is not reached within 8 min.
Err 6 - Motor speed error, it may be not properly connected or damaged.
Err 7 - Motor overheat protection or is damaged.
Err 8 - Water level exceeds protection value.

HEC

Hong Kong Electric Company Autowasher

Faults are indicated by the door lock lamp flashing, followed by a 4 second pause before repeating.

E1 - 0 flashes - Door not locked.
E2 - 2 flashes - No drain detected in the time allowed.
E3 - 3 flashes - Temperature sensor fault.
E4 - 4 flashes - No heat detected in the time allowed.
E5 - 5 flashes - Time out fill.
E6 - 6 flashes - PCB fault.
E7 - 7 flashes - Motor out of circuit.
E8 - 8 flashes - Fill overflow.

Hoover & Candy

Hoover / Candy washing machine error codes

E1 Timed out either on fill, heat, or drain.
E2 Open circuit Thermistor
E4 Motor current exceeded
E5 Motor Tacho fault
E7 Motor windings open circuit

Hoover Vision HD series washing machines

Error codes are established by noting the number of flashes the 2nd spin speed LED (from the top) and the 1st option button (from the left) flash together in unison

Error 0	Faulty module or wiring
Error 1	Open circuit Door Interlock
Error 2	Fill time out, Pressure stat or pressure chamber.
Error 3	Drain time-out, blocked filter, Pressure stat stuck.
Error 4	Anti flood Pressure stat, faulty inlet valve.
Error 5	NTC fault or module (NTC values 20K @ 25C, 2.14K @ 85C)
Error 6	Faulty module or wiring.
Error 7	Motor fault
Error 8	Tacho fault (CESET=42Ohm, HOOVER=156Ohm, SOLE=184Ohm)
Error 9	Short circuit motor triac on Module.
Error 10	Programme Selector
Error 12	Communication error between boards and wiring.
Error 13	Communication error between boards and wiring.

How to find out the date code

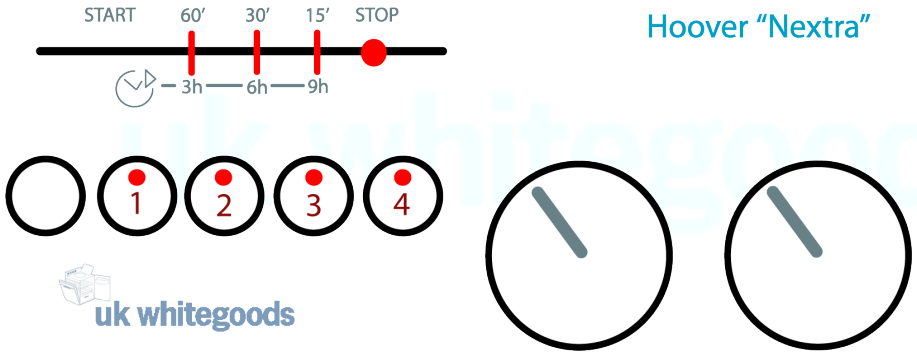
Serial number first eight numbers product number next four date code eg;
0428 = made in 2004 28th week next four serial no

Ian Levett

Hoover Nextra Washing Machines

The 'Start' & 'Pause' LED's will flash together to indicate the error code. You have to count the flashes within each 15 second period to get that error code. The start and the pause LED's will flash together at 1Hz (i.e 1 flash per second) within that 15 second time frame, then will continue and show again within another 15secs and so on.

0 Module Fault
1 Door Interlock/Door Switch
2 Filling time-out or Solenoid Valve etc.
3 Pump time-out (3 mins) exceeded
4 Overfill (i.e. Blocked air chamber/faulty solenoid valve)
5 NTC/Heater fault
6 Module fault
7 Motor jammed/Drum Shaft jammed/Tacho generator fault
8 Ditto
9 Faulty TRIAC on main board
10 Faulty program selector / wiring
11 Faulty dryer board or wiring (Latest Interact models)



Starting The Test Sequence

1. Press and hold button 1
2. Turn the program selector knob clockwise 2 steps
3. As soon as the LED on button 1 lights, release the button
4. All LEDs should light
5. After three seconds but within 5 seconds press button 1
6. After correctly set the two rows of LEDs, residual time/time delay and buttons should flash alternately

Auto-Test Sequence – What It Does

- Fill to first level through pre-wash compartment, hot fill energised where present. If fitted the recirculation pump is also energised.
- One second pause
- Heater energised for approx 16 seconds and distribution cam on soap drawer moves the spray nozzle to main wash compartment.
- Cold valve, hot, where fitted and recirc pump, where fitted, energized. Main motor tumbles anti-clockwise at 55rpm for approx 13 seconds.
- Motor paused, filling continues
- Cold valve, hot, where fitted and recirc pump, where fitted, energized. Main motor tumbles anti-clockwise at 55rpm for approx 13 seconds. At this point, by pressing button “3” the drum speed can be reduced to 35rpm.
- Drain pump energised until pressure switch detect that the machine is empty
- Short spin, roughly 27 seconds at half the maximum rated speed
- End of test

Hoover 3 phase autowashers.

1 = D/int or wiring.
2 = Initial fill exceeded 3.5 minutes.
3 = Drain not detected in 3 minutes.
4 = Flood protection activated.
5 = NTC or wiring.
6 = Core board or wiring.
7 = Integrated Circuit Insulated Gate Bipolar Transistor has overheated and a TOC has shut it down.
8 = Tacho generator out of circuit. Can be wiring or board.
9 = Integrated Circuit Insulated Gate Bipolar Transistor or motor short or open circuit.
10 = No listing
11 = Dryer module or related wiring (Washer dryers only).
12 = Comms error
13 = Comms error
14 = Core board or wiring.

Hoover Optima Series

With brush motor:

E:00 Faulty Module (Coreboard)
E:01 Door Interlock
E:02 Fill time-out
E:03 Drain time-out
E:04 Anti-flood on Pressure s/w or Inlet valve blocked
E:05 NTC fault
E:06 Eeprom/Coreboard fault
E:07 Motor jammed or Interlock fault
E:08 Tacho fault
E:09 Motor triac failure on Coreboard
E:10 Motorised Selector s/w fault or open-circuit drum sensor device
E:11 Open circuit dryer heater or Dryer NTC or Dryer Module
E:12 Communication error between both boards
E:13 Same as E:12 (above)
E:14 Faulty Coreboard or water heater/NTC fault
E:15 Coreboard not programmed
E:16 Water heater element insulation fault
E:17 No signal from tacho generator
E:18 Faulty Coreboard or wiring

With 3-phase motor:

E:01 Door Interlock
E:02 Fill time-out
E:03 Drain time-out
E:04 Anti-flood on Pressure s/w or Inlet valve blocked
E:05 NTC fault
E:06 Out of balance fault
E:07 Door interlock fault
E:08 Tacho fault
E:09 Motor triac failure on Coreboard
E:11 Dryer NTC fault
E:12 Open circuit dryer heater or dryer module fault
E:13 Faulty Coreboard
E:14 Water heater or NTC fault
E:15 Coreboard not programmed
E:16 Water heater element insulation fault
E:17 Tacho signal fault
E:18 Coreboard fault or faulty Power-on times counter (soft-touch models)

Hoover Washing Machine Module (Coreboard) Triac Identification

Note the number of the burnt out triac to identify the source of failure: ·

TR1 = Motor fault (Brushes · commutator)
TR2 = Hot solenoid valve
TR3 = Cold solenoid valve
TR4 = Door Interlock *
TR5 = Drain Pump
TR6 = Wash (recycling)Pump
TR7 = Wash Programme Selector (Stepper Timer Unit)

* TR4 is protected by R8 (resistor) if that is burnt out = Interlock failure.

Hoover Oven Error Codes

ER01 Faulty communication between PCBs
ER02 Faulty programme selector switch
ER03 Faulty programme selector switch
ER04 NTC Temp sensor on mother board open circuit
ER05 NTC Temp sensor on mother board short circuit
ER06 Temperature on mother board exceeded 85C
ER07 NTC food temp probe short circuit
ER08 NTC food temp probe open circuit
ER09 NTC food temp probe exceeded 85c
ER10 NTC oven probe open circuit
ER11 NTC oven probe short circuit
ER12 Oven case temp exceeded 300C
ER13 Preset temp of cooking was not reached within 105 minutes
ER14 Mechanical timer open circuit
ER15 Door sensing switch open circuit
ER16 NTC temp probe on display board open circuit
ER17 NTC temp probe on display board short circuit
ER18 Display board temp exceeded 75C
ER19 Severe malfunction of EPROM on mother board
ER20 Software error on cooking recipe file

Hoover Nextra series Dishwashers

E2 Filling time-out.
E3 Drain time-out.
E4 Anti-flood tripped.
E5 NTC fault
E7 Circulation. Pump 'Tachometric Dynamo' failure.
E8 Heating fault
E9 Turbidity sensor fault.
Ee Heater element safety switch open circuited.
Eh Heater element safety switch short circuited.
Ei Open circuit heater element

Hoover Late Dishwasher Error Codes

E1 No fill
E2 Temperature control fault (Thermistor)
E3 Water not heating
E4 Not draining
E5 Flow meter not reading/counting correctly

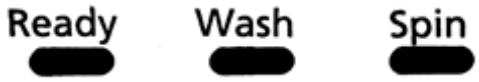
Candy & Hoover Slim line Dishwashers

E1 Filling time-out.
E2 Drain time-out.
E3 Heating fault.
E4 Anti-flood protection.
E6 NTC open circuit.
E7 NTC closed circuit.

ISE

ISE5 – CI555WH

Error codes can be observed during a functional test and in fault code test mode.



Fault codes are displayed on the LED's as shown above and are coded, in brackets, after each code to indicate the LED's that will be lit where 1 = on and 0 = off. So for H1 for example, the "Ready" LED will be on whilst the "Wash" and "Spin" will both be off.

H1 : NTC OPEN OR SHORT CIRCUIT (100)

H2 : HEATER OPEN CIRCUIT (010)

H3 : HEATER ALWAYS ON (110)

H4 : VALVE TRIAC SHORT CIRCUIT (001)

H5 : PUMP OPEN OR SHORT CIRCUIT (101)

H6 : MOTOR TRIAC SHORT CIRCUIT (011)

H7 : WATER LEVEL SENSOR FAILURE (111)

PS : THE ERROR CODES GIVEN ABOVE DOES NOT ALWAYS MEAN REASON FOR THE FAILURE IS THE DEFINED COMPONENT

ALWAYS CHECK THE CONNECTORS AND WIRING FIRST TO SEE IF THE CAUSE OF
THE FAILURE IS A DISCONNECTION OR SOMETHING SIMILAR.

FAILURE CODE TEST MODE

To enter the test mode:

Press the first auxiliary function button from the left for 6 seconds. "Run/ Pause/Cancel" led will start blinking and the program followers will start blinking as an error code for 3 seconds if any failure routine has run.

After 3 seconds, the machine will return to the selection mode.

Clearing the error code:

After entering the failure code observing mode, pressing and holding "Run/ Pause/Cancel" button for a short time will erase the error code from the memory. After you complete your inspection, if you are not

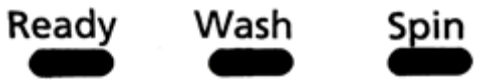
sure that you have solved the problem and if you are going to change the electronic card group, **do not** erase the error code so that we may investigate any failures.

For all other cases, you may erase the error code.

Functional Test Program

Entrance to the test mode

1. Turn off the machine at the On/Off Switch
2. Turn on the machine from the On/Off Switch, whilst pressing and holding the "start/pause/cancel" button. ~The start LED will start to blink within 3 seconds.
3. At this point, you will see the failure code displayed in the progress indication LEDs (as shown below)
4. After noting the failure, you can clear the fault code by pressing and holding the start/pause/cancel button for 3 seconds or longer



5. After clearing the fault code, you will be in the functional test mode. Each push to the start/pause/cancel button will represent one function of the test sequence as listed below

NB. At stage 2 if no fault indicated by a code there may be a fault not logged by the PCB please then got to stage 4

Functional Test Sequence

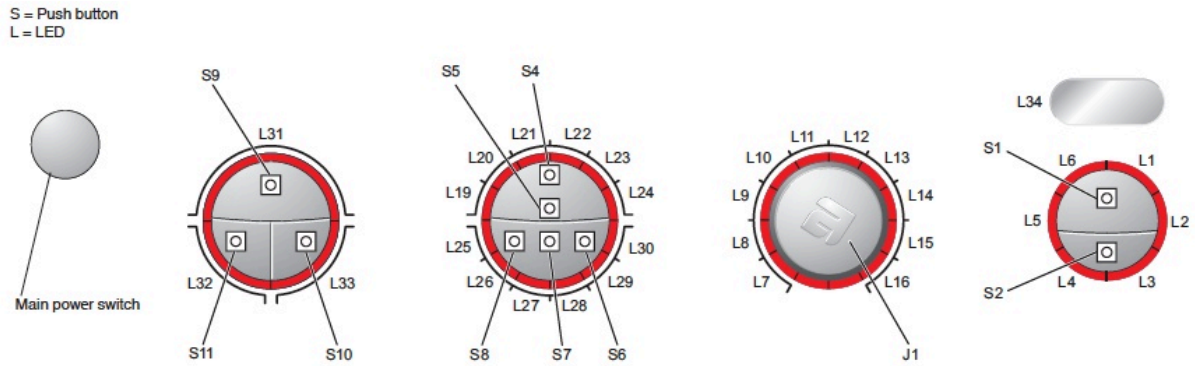
1. All LEDs on the board will start to blink after the door is locked.
2. Take in water from pre-wash compartment
3. Take in water from main wash compartment
4. Take in water from softener compartment (Both pre-wash and main wash valves are active)
5. Not used on the ISE CI555WH please skip if required by pressing to advance
6. The heater will be switched ON. Please note that if there is insufficient water to perform this test the valves will be energized and the machine will fill to accommodate the test
7. Clockwise motor rotation with 52 rpm
8. Counterclockwise motor rotation with 52 rpm
9. Drain cycle followed by spinning up to maximum speed.
10. Turn on all the valves to fill a certain level in a short time for water leakage test on the production line.
11. End
12. **You can get off the test mode by turning the WM off.**

ISE2

Failure code	Indicator situations			Failure	Action	Reasons Of Failure	Action To Do
	Start	Ready	End				
1a	Flash	OFF	OFF	Door not locked Door Lock not supplied (TR1 failure)	When lock order is given, if door is not locked after 30 seconds, machine is stopped and error is visualised.	Damage in door lock tongue	Change the door handle.
						Damage in door inside plastic	Change the door handle.
						Failure in thermal lock	Change the lock.
1b	Flash	OFF	OFF	Door not unlocked.	Also, if unlock order is done, if door is not unlocked after 5 minutes, machine is stopped and error is visualised.	Damage in door lock tongue.	Change the door handle.
						Damage in door inside plastic	Change the door handle.
						Failure in thermal lock	Change the lock
						Failure in door handle.	Change the door handle.
2	OFF	Flash	OFF	Low pressure or lack of water	After 6 minutes filling error is visualised. Then machine is stopped for 10minutes and keyboard is locked. After this time machine will try to fill again during 6 minutes. This sequence is repeated up to 15 times or until level is reached. If level is not reached after 15 tries, machine is stopped.	Failure in pressure switch.	Check and change the pressure switch if failed
3	Flash	Flash	OFF	Pump failure or Filter dirty	After 3 minutes trying to drain, error 3 will be displayed. Then the machine stops and will remain stopped with the door locked until a power off and power on is executed.	Failure in pump.	Check and change the pump if necessary.
						Failure in pump connections	Check and correct the connections
						Failure in PCB connections.	Check and correct the connections
						Filter blocked.	Clean the filter.
5a	Flash	OFF	Flash	NTC error	If NTC error is detected (open or short), error 5 will be displayed. Then, Heating steps will be skipped and heater disconnected.	Failure in Ntc connections	Check and correct the connections.
						Failure in PCB connections.	Check and correct the connections.
5b	Flash	OFF	Flash	Heater failure	If temperature does not increase 2ºC in 15 minutes (only when water temperature is under 50ºC), error 5 will be displayed. Heating steps will be skipped and heater disconnected. Program will not attempt to perform any heating action during the rest of the program	Failure in resistance connections.	Check and correct the connections.
						Resistance limmed.	Check and change the resistance if limmed.
5c	Flash	OFF	Flash	Heating time out	If the max step time is elapsed without reaching temp, error 5 will be displayed. Program will continue from next step. If there is any heating action more, program will try to perform it normally.	Resistance limmed.	Check and change the resistance if limmed.
						Ambient water temperature too cold.	Check and change the resistance.
6	OFF	Flash	Flash	Motor blocked or tachometer error	If motor is blocked, it is stopped for 30 seconds. After this, it is tried again. After 3 trials, machine is stopped and error is visualised. When tachometer is not detected,	Failure in motor connections	Check and correct the connections.
						Failure in PCB connections	Check and correct the connections.

					motor is stopped for 30 seconds. After this, it is tried again and motor blocked error is detected. After 3 trials, machine is stopped and error is visualised in the same way as motor blocked error.	Failure in motor.	Change the motor if failed.
						Out of voltage failure.	Change the motor if failed.
7	Fix ON	Fix ON	Fix ON	Configuration Error	Microcontroller cannot identify what the machine variation is. Possible EEprom failure.	Failure in PCB connections	Check and correct the connections.
						Failure in customization.	Check and change the PCB card.
8	Flash	Flash	Flash	Motor Triac in short circuit	When detected, ERROR 9 is displayed and the program is aborted. Also, if motor is turning and door lock is opened, this error is shown	Failure in motor connections.	Check and correct the connections.
9	OFF	Fix ON	Fix ON	Out of voltage range 150-264Vac	When machine detects a voltage lower than 150V or higher than 264V, machine will stop and visualise the error (E-9). If voltage returns back to the normal range, machine will continue normally. When machine is stopped due to this failure, keyboard is locked. Also, if program has not started, machine will not respond until voltage is OK.		

ISE 1606W



Total reset

1. Hold the start/stop button (S1) in when you switch on the main power switch until an LED on the panel
lights.

Number of rinses

1. Hold both the start/stop button (S1) and door open button (S2) pressed in when you switch on the
main power switch until L7 – L16 flash.
2. Change the number of rinses by pressing the door open button (S2) repeatedly.
L1 – L3 light for three rinses. L1 – L5 light for 5 rinses.
3. Confirm your selection by pressing the start/stop button (S1).

Automatic door opening

1. Hold the door open button (S2) pressed in when you switch on the main power switch until L7 – L16
flash.
2. Change the setting by pressing the door open button (S2). L3 and L4 light when automatic door opening
is selected.
3. Confirm your selection by pressing the start/stop button (S1).

Super rinse or Delayed Start

1. Hold S5 or S6 pressed in when you switch on the main power switch until L7 – L16 flash.
2. Change the setting by pressing S5 or S6. All LEDs L19 – L30 light for delayed start.
3. Confirm your selection by pressing the start/stop button (S1).

Temperature/Spin speed or Stain/Super rinse

1. Hold S4 pressed in when you switch on the main power switch until L7 – L16 flash.
2. Change the setting by pressing S4. All LEDs L19 – L30 light for Stain/Super rinse.
3. Confirm your selection by pressing the start/stop button (S1).

The control unit detects and adjusts automatically to the panel layout and machine model when button S4 or S5 is pressed several times.

Fault indication		Cause	Action
Display	LEDs (flashing)		
F:1		Over filling. Too much water in the machine	**Service action:** 1. Check the machine's level system and inlet valve.
		Open the door	**Customer information:** 1. Close the door and start a programme. **Service action:** 1. Check the door lock.
F:3		Drainage fault	**Customer information:** 1. Check that no objects are stuck in the drainage hose outlet. 2. Check that the drain pump is not blocked by foreign objects. 3. Check that there are no kinks in the drainage hose. **Service action:** 1. If the pump only runs for a short while (approximately 20 seconds), this indicates a fault in the level system. Check the level sensor and hoses. 2. Check wiring and voltage to the pump. If necessary, replace the pump and/or control 3. After implementing corrective action, run the Drain programme or press the Key button (door open) to empty the machine.
F:4		Fault with water supply	**Customer information:** 1. Check that the tap on the water pipe is open. **Service action:** 1. Check that the filter in the machine's water intake is not blocked. 2. Check the inlet valve. If necessary, replace the valve. 3. Check voltage to the inlet valve. If there is no voltage, this could be due to a fault in the level system, wiring or control unit.
F:6		Door opening fault	**Service action:** 1. Check for faults on the door lock or wiring to the door lock. 2. Check the function of the level sensor. 3. Check the control unit.

After carrying out corrective actions as above, reset the fault indications by switching off the machine using the main power switch.

LG

Washing machines

CL Child lock, to disengage child lock hold down temp and eco/rapid together
OE Pump blocked
IE No water inlet
DE Door open
UE Out of balance
SE Motor fault or could be main PCB, try motor 1st
CE Current error, short circuit to motor or PCB
LE Door lock fault
FE Overfilling
TE Thermistor or element fault
PE Pressure switch fault

Washer Diagnostic

LG test sequence some models two versions

Press **Rinse** & **Spin** buttons then turn power on whilst holding these two.

All lights on display light, each time you press the **Start/Pause** button checks a feature in the following order with the "Press No." column indicating how many times that the **Start/Pause** has been pressed:

Press No.	What happens	Display Shows:
0	All lamps turn on	18:88
1	Clockwise rotation	Drum rotates at about 40-52rpm
2	Slow spin	Drum rotates at about 55-65rpm
3	High spin	Drum rotates at about 95-140rpm
4	Inlet valve energised to fill through prewash compartment	Water level frequency 25-65
5	Inlet valve for main wash energised Hot inlet valve energised where fitted	Water level frequency 25-65
6	Main wash inlet valve energised	Water level frequency 25-65
7	Anti-clockwise spin, left	Drum rotates at about 40-52rpm
8	Heater energised for about three seconds	Water temperature
9	Drain pump energised	Water level frequency
10	End of test, automatic off	

Dishwasher Error Codes

IE Inlet error - 10 minute time out on fill
OE Drain error - 5 minute time out drain time error
EI Leak error - water level in tub drops during use
FE Overfill error - excessive water in tub, drain pump activates
TE Temperature error - Thermistor resistance incorrect
HE Heating error - no heat (time out) or temperature reaches 95C

Matsui

Matsui Washing Machine

This Machine has four lights on the instument panel in a horizontal row.

The left one is the start-pause light and the next 3 are options lights.

Further to the right are 2 lights in a vertical row. the top one is the program ready light, and the bottom one is the program end light.

Fault one. start pause light flashing. door not shut.[interlock fault?]

Fault two.Prog ready flashing. Low water level , heater exposed. May be due to low water pressure

Fault three. Start-pause and prog ready flashing. Pump failure or blocked filter.

Fault four. not used

Faultfive. Start pause and prog end flashing. Heater or heat sensor.

Fault six.Prog ready and prog end flashing motor failure.

Fault seven start-pause andprog end permanently lit. Configuration error

Fault eight start-pause and prog end flashing motor failure.

Fault nine. prog ready and prog end flashing. Mains voltage too high [over260v] Self righting when voltage returns to normal.

Miele

MIELE G2022SC
Fault code Flashing rhythm of Wash / Rinse LED Possible fault
F00 None No fault registered
Fault code F01 1 x short Water/Heating NTC temperature sensor or leads short-circuited
Fault code F02 2 x short Water/Heating NTC temperature sensor or leads open-circuited
Fault code F11 1 x long and 1 x short Drainage fault
Fault code F12 1 x long and 2 x short Water intake fault at start of step
Fault code F13 1 x long and 3 x short Water intake fault at end of step
Fault code F14 1 x long and 4 x short Water intake fault: Pump pressure level switch
Fault code F18 1 x long and 8 x short Flow meter stationary state monitor
Fault code F19 1 x long and 9 x short Flow meter stiff and not turning freely
Fault code F24 2 x long and 4 x short Heating relay contact
Fault code F25 2 x long and 5 x short Desired temperature fault
Fault code F26 2 x long and 6 x short Boiling protection
Fault code F40 4 x long Electronic unit fault
Fault code F51 5 x long and 1 x short Pump pressure level switch
Fault code F52 5 x long and 2 x short Pump pressure level switch has reset during heating
Fault code F69 6 x long and 9 x short Circulation pump blocked
Fault code F70 7 x long Float switch fault
Fault code F88 8 x long and 8 x short Turbidity sensor fault

MFI – Hygena & Diplomat

MFI – Hygena & Diplomat Dishwashers

All Hygena and Diplomat dishwashers are “branded”, that is to say that MFI do not produce their own appliances, they are bought in from various manufacturers so, when you check one and the code is not listed here please also see the following:

- Whirlpool
- Haier
- Smeg

MFI Diplomat- Smeg E2 code

Lots has been written about the infamous “E2” fault but it will generally be caused by one of only a few failures although, in theory, there are anything up to twelve points of failure that can cause this error to be displayed.

TIP: Look in sump area about the 12 o’clock position. if there is a rubber flap valve take it off and throw it away this should solve problem if not you possibly need a new water break kit.

TIP: Remove the right hand side panel (from front) to access the air break chamber. Remove and clean with a flexible bottle brush then refit, if this does not cure the problem then fit a new air break chamber or air break chamber kit.

NOTE: See also the Smeg section for more

MFI Diplomat and Smeg Produced Dishwashers

E1		**Flood protection system activated**
E2		Safety pressure switch activated, also see notes on “E2” error
E3		No heat in time allowed
E4		Temperature sensor fault
E5		No fill
E6		No drain in time allowed
E7		Flow meter detected when not fitted reset required
E9		same code as E1

New Diplomat Dishwashers

ADP8520, ADP8342, ADP8352

Test sequence as follows for all models:

- Close dispenser flap
- To enter test press and hold button “S4” and switch on the dishwasher by using button “S2”
- All LEDs should now be flashing
- Close door
- Press “S2” and the dishwasher will fill to level plus about 15 seconds
- Press “S3” and the detergent dispenser will open and remain energised for one minute
- Press “S3” circulation motor will run (Assuming water level reached) for one minute
- Press “S3” half load solenoid and circulation motor energised for one minute
- Press “S3” Heater energised. After 30 seconds motor runs as well for one minute (If the water level drops then the valve will energise to add water to fill level)
- Press “S3” and the water softener valve will now energise and open for one minute
- Press “On/Off” to switch the appliance off and cancel the test routine

Necht

F1	NTC sensor short-circuited water / heating
F2	NTC sensor open-circuited water / heating
F3	NTC sensor short-circuited air path / fan
F4	NTC sensor open-circuited air path / fan
F5	Oven Pt 1000 sensor short-circuited
F6	Oven Pt 1000 sensor open-circuited
F7	Catalyser Pt 1000 sensor open-circuited
F8	NTC sensor fault - General
F10	Water intake
F11	Water drainage
F12	Water intake fault at start of step
F13	Water intake fault at end of step
F14	Water intake fault - Level switch - Heating
F15	Water intake fault - Hot water
F16	Foam / Excess detergent
F17	Insufficient water intake
F18	Flow meter stationary
F19	Flow meter slow / difficult to rotate
F20	Heating
F21	Grill heater element inoperative
F22	Fan oven (ring) heater element inoperative
F23	Pyrolysis heating fault
F24	Heating relay contact
F25	Desired temperature fault
F30	Door and door contact - Different signals
F31	Door open with defective door lock
F32	Door lock does not close
F33	Door lock does not open
F34	Locking not possible
F35	Unlocking not possible
F40	Electronic unit fault
F41	Faulty EEPROM / incorrect data
F42	No mains frequency recognition
F43	Model type not programmed
F44	I²C bus defective
F45	Flash RAM defective / Incorrect data
F46	LCD connection defective
F47	BAE/ SLT interface defective
F50	Drive
F51	Level switch, pressure sensor
F52	Heating pressure switch has reset during heating
F53	Speed sensor fault
F54	Spit short-circuited
F55	Overriding time control exceeded
F56	Final spin speed < 400 rpm

F57 Cooling fan fault
F58 Hot air fan fault
F59 Water container fault
F60 Excessive temperature
F61 12 V not present
F62 Undefined fault
F63 Water path control unit fault
F64 Path sensor defective
F65 Drum lighting cap missing
F66 Air path leakage
F67 Circulation pump speed too low
F68 Circulation pump operates after switch-off
F69 Plinth float switch
F70 Vacant
F71 Magazine drive defective
F72 Feed drive defective

F73 Percolator unit drive defective
F74 Valve drive defective
F75 Remove capsule from percolator unit
F76 Capsule jammed during pressing
F77 Valve resetting defective
F78 Vacant
F79 Vacant
F80 Heater unit - Water inactive
F81 Heater unit - Steam inactive
F82 Heater unit - Water - Excessive temperature
F83 Heater unit - Steam - Excessive temperature
F84 Water path control unit position at intake
F85 Water path control unit permanent signal change
F86 Lid contact - Salt
F87 Sensor softener
F88 Turbidity sensor
F89 O2-Sensofault
F90 O2-Systemfault
F91 Load recognition not active
F92 Volume flow counter faulty

Necht

Necht dishwashers

(WQP12-9319/WQP12-6015/WQP8-9325)

E1	Time out on fill
E2	Time out on drain
E3	Time out on heating
E4	Overfilling
E5	Program jammed
E6	Open circuit Thermistor
E7	Short circuit Thermistor

New World

New World FDW600W Dishwasher

Wash led flashing: Overfilled
Wash & Rinse led flashing: Temperature sensor short circuit
Wash & Rinse & Drying led flashing: Temperature sensor open circuit
Rinse led flashing: Drain time too long
Rinse & Drain led flashing: Heating time too long
Drying led flashing: Water inlet time too long

Samsung

Samsung washing machines

E1	Not filling in allocated time
E2	Pump won't empty.
E3	Overflow.
E4	OOB.
E5	Water temp rising/falling too quickly - check Thermistor.
E6	Water temp rising/falling too quickly - check Thermistor.
E7	Pressure switch.
E8	Temp too high on low temp washes - Check Thermistor.
E9	Water leak, Water level has reduced.
EA	Tacho.
EB	Motor Triac.
EC	Thermistor.
ED	Door open.

Samsung Washing Machines – General

Water Supply Error

- If there is no higher change in water frequency than 100Hz for 2 minutes during the initial time of water supply
and if water level doesn't reach the preset level in 10 minutes, this error will occur.
This error will be released using Start/Pause button, which performs the initial condition of operation.
- Display : "4E"

Water Drain Error

- If water level frequency is still lower than the reset level frequency (25.20kHz) in 10 minutes after starting of
water drain, this error will occur.
This error will be released using Start/Pause button, which performs the initial condition of operation.
- Display : "5E"

Over Flow Error

- If an abnormal water level frequency is sensed (for occurrence of Over Flow :21.00kHz), Auto Power Off may
release this error and continuously progress water drain until the frequency reached 25.00kHz.
- If Over Flow is also sensed even after the following check of water level frequency indicating that error, it
functions to progress water drain.
- Display : "OE"

Door Open Error
- This error will be released by closing Door.
- Display : "dE"

Unbalance Error
- This error will be released by pressing start/pause S/W.
- DISPLAY : “ UE”

Water Heater Error
- This error will be released by turning off Power S/W.
- Display : “HE1"(Over Heat),
- Display : "HE2", indicating no operation of HE.

Pressure S/W (Single Part Trouble) Error
Frequency signals(kHz) generated by water level S/W
- If the above frequency signals are displayed longer than 5sec, it indicates Pressure S/W Error.
- Drain water for 3 minutes for that Error, and turn OFF water drain pump. Pressure S/W Error
display “ IE" will be shown.
Abnormal Frequency 30.00 KHz 15.00 KHz

Abnormal Water Temperature ERROR
- Water drain begins if abnormal water temperature is sensed at the initial time of water supply. If the frequency
higher than 25.20KHz is sensed, water will be drained by force.
- Display : "CE"
- This error will be released by turning off Power S/W.

Natural Drain/Water Leak Error
- If more than 4 times of water supply and safe water level of Heater are sensed for each course, this error will
occur.
- Display : "LE
- This error will be released by turning off Power S/W.

Tacho Error
- If Motor Tacho is abnormal, this error will occur.
- If Tacho signals are inputted less than 2 for 2sec after Motor started, this error will occur.
- Display : "3E"
- This error will be released by turning off Power S/W.

Motor TRIAC Short Error

- If Tacho signals are inputted more than 300 every 1sec in the operational interval less than 90RPM, this error
will occur.
Turn off Power S/W at that time.
- Display : "bE"
- This error will be released by turning off Power S/W.

Thermistor Abnormal Error
- If Thermistor circuit is abnormal, this error will occur.
- If Thermistor is lower than 0.2V or higher than 4.5V, this error will occur.
- Display :"tE"
- This error will be released by turning off Power S/W.

TEST MODE

1. Driving Compartment Test Mode
A. Hold down " 1" and " 2" keys simultaneously and then press POWER S/W " 4" on. (Whole lamps turn on and display show " t1" after 3 Seconds.)

B. The driving compartment can be tested when you press " 3" key right after entering
into the initial stage of the TEST MODE.

Driving Compartment Test
Pre-wash VALVE ON(0.3sec) → OFF(0.3sec) → COLD VALVE ON(0.3sec) → [OFF(0.3sec) →
HOT VALVE ON (0.3sec) : OPTION] → OFF(0.3sec) → Rinse VALVE ON(0.3sec) → OFF(0.3sec) →
Pump MOTOR ON(0.3sec) → OFF(0.3sec) → MOTOR Left (0.5sec) → OFF(0.5 sec) → MOTOR Right (0.5sec) → OFF(0.3sec) → HEATER RELAY ON(0.3sec) → OFF(0.3sec) → DOOR OPEN
(Function continues when door is closed)

THERMISTOR TEST MODE
A. Hold down " 1" and " 2" keys simultaneously and then press POWER S/W " 4" on. (Whole lamps turn on and display show " t1" after 3 Seconds.)
B. Press the " 1" key and display shows " t2"
C. Press the " 3" key and display shows the inside temperature of tub.

Samsung Washing Machine Test Program

Hold down the wash and temp buttons whilst then pressing the power button.

After about three seconds the display will show “t1” and the buttons can then be released.

Press the “Start” button and the machine will then enter the test cycle. You can end the test cycles at any stage by pressing the power button once more.

Test Cycle:
Pre-Wash Valve on (0.3 sec)
Cold Valve on (0.3 sec)
Hot Valve on (0.3 sec) – If Fitted.
Rinse Valve on (0.3 sec)
Pump Motor on (0.3 sec)
Motor Left (0.5 sec)
Motor Right (0.5 sec)
Heater Relay (0.3 sec)
Door Open

Cycle repeated if door closed

Thermistor Test

Enter the test mode as previous but don’t press the “Start button.

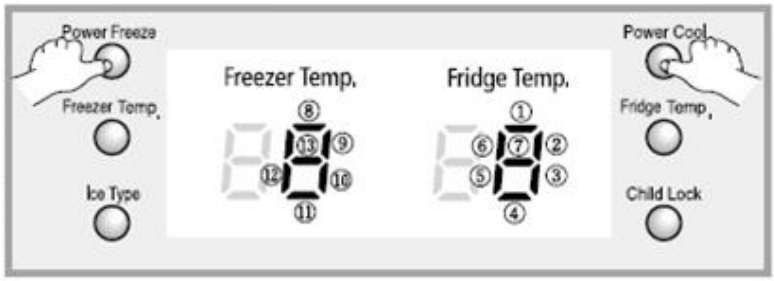
Press the Wash button and the display will show “t2”
Press the “Start” button and the display will show the current water temperature.

Cancel by pressing the power button.

Samsung RS21 Series US Style Fridge Freezers

NO	Error
①	ICE-MAKER SENSOR
②	R-SENSOR
③	R-DEF-SENSOR
④	R-FAN ERROR
⑤	I/M function error
⑥	CoolSelect Zone™ SENSOR
⑦	R-DEFROST ERROR
⑧	EXIT-SENSOR
⑨	F-SENSOR
⑩	F-DEF ERROR
⑪	F-FAN ERROR
⑫	C-FAN ERROR
⑬	F-DEFROST ERROR

Press both buttons simultaneously for 8 seconds



If any LEDs blink, the corresponding sensors and components must be checked for an error.

Serial Number Explanations

Example serial number given below

527	S/						00002
7	N:	9	1	C	N	7	4P
AAA	S/						
A	N	B	C	D	E	F	GGGGGG

AAAA	Model Number
B	Division
C	Plant of Manufacture
D	Manufacture Line
E	Year of Manufacture
F	Month of Manufacture
GGGGGG	Serial Number

Model Number is not used by some divisions
Division is listed in table
Plant of Manufacture is listed in table
Manufacture Line will be A for A-line etc
Year of Manufacture is listed in table
Month of Manufacture is listed in table
Serial Number will end in letter check digit (A-Z)

Division

AV	1	Audio Visual
VD	3	Visual Display
REF	4	Refrigeration
W/H	5	Washing Machine
Video	6	Video Player
MWO	7	Microwave Oven
VC	8	Vacuum Cleaner
PC	9	PC & NotePC
FP	B	Fax & Printer
DISPL AY	H	Monitors
HA	P	Home Audio
HHP	R	Mobile Phone

Plant of Manufacture

	1 - 9
Korea	A
India	A
China	A
Taiwan	A
Brazil	B
China	B
Mexico	C
China	D
Thailand	D
Turkey	F
China	F
Mexico	G
Hungary	G
Phillipines	G
Hungary	H
India	H
Phillipines	H
UK	J
Indonesia	K
Spain	K
Indonesia	L
Japan	L
Mexico	M
Malaysia	M
China	Q
Indonesia	R
Taiwan	R
Slovakia	S
Brazil	S
China	T
Uzbekistan	T
China	U
Russia	U
Colombia	U
India	V
China	V
China	W
Taiwan	W
India	W
Brazil	X
Vietnam	Y
India	Z

Year of manufacture

1991	A
1992	B
1993	C
1994	D
1995	F
1996	G
1997	H
1998	J
1999	K
2000	N
2001	R
2002	T
2003	W
2004	X
2005	Y
2006	L
2007	P
2008	Q
2009	S
2010	Z

Month of Manufacture

January	1
February	2
March	3
April	4
May	5
June	6
July	7
August	8
September	9
October	A
November	B
December	C

Servis UK

Servis UK is actually made by a company called Antonio Merloni, the brother of Vitorio Merloni who owns Indesit.

The washer dryers especially are seen on a fair range of brands including Hygena and Diplomat sold through Howdens Joinery and, obviously MFI stores. In addition a lot of Hygena, Diplomat and Schrieber refrigeration is Antonio Merloni produced.

Many of the new machines are seen sold under the Electra brand name.

Servis Quartz

F1 Water temp fault shows after wash prog
F2 Times out on fill
F3 Times out on drain
F4 Motor fault
F5 Heater fault (shows during wash prog)

Test Cycle
This is a special programme to be used only by service engineers in conjuction with their specialised test equipment.

Fault Diagnosis
A unique capability of your SERVIS QUARTZ PLUS is the ability to diagnose its own faults should they occur.

All the functions and operations that make up each programme are continually monitored and should any fault develop, the machine will display a fault code and in some places will stop the programme. The fault code will consist of the letter 'F' and a number flashing alternately.

The fault codes are primarily intended for the guidance of the service engineer but, in some cases, there may be some corrction you, the customer, can make. This is indicated in the list below. If however, it is necessary to report a fault, please state the machine model number and the fault code. See your Consumers Charter for service addresses and telephone numbers.

F1
THE WATER TEMPERATURE CIRCUIT IS FAULTY - Call the engineer.
NOTE: The fault code will not appear until the programme is finished.

F2
THE MACHINE TAKES TOO LONG TO FILL.

Customer Action:
1. Check that the taps are turned on fully.
2. Check the filler hose - if it is kinked, reposition it to remove the kink and reselect the programme.
3. It may be that your house water pressure is low. If so, switch off electricity, switch on again and reselect proigramme to continue filling process. If fault persists call the engineer.

F3
THE MACHINE HAS FAILED TO PUMP OUT THE WATER BEFORE SPINNING THE CLOTHES DRY.

Customer Action:
Check outlet hose - if it is kinked reposition it to remove the kink. Press 'CANCEL' button to remove the water then follow up with 'H' for normal fabrics or 'L' for delicate fabrics.

F4
THE MOTOR IS RUNNING TOO FAST OR TOO SLOW.

Sometimes this code may appear during the final spin of a very heavy load, for example; absorbant cotton towels, duvets or sleeping bags.

Customer Action:
1. Press the 'CANCEL' button and hold until all the water is pumped out.
2. Select 'H' FAST SPIN ONLY, press the start button. If F4 is repeated, call the engineer.

F5 and F6
THERE IS A FAULT IN THE HEATER CIRCUIT - Call the engineer. If the programme stops and you wish to take the clothes out hold the 'CANCEL' button in for 1 imnute, then release The clothes can then be removed when the door light glows.

Single Bar Sign
The single bar sign - which appears when the door is open may remain when you close the door. If this happens, it signifies that the door is not properly closed. Push the door fully home until it clicks and the Zero sign '0' appears on the display.

Servis dishwashers

Including Built in M4905 and Freestanding M4605
Flashing program LED signifies fault code
LED E1 on left

E1 Water supply/pressure switch/Aqua stop or pressure switch problem..
E2 Heater/ntc fault. Signals at end of wash prog.
E3 Heater/micro switch on flow switch/safety stat. Only during manual test program.
E4 Leak/blocked grill. Signals at end of wash prog.
E5 Pressure switch/blockages/pump. Signals at end of wash prog.

During 2007 Servis UK are rumoured to be introducing a range of machines fro which specialist diagnostic equipment is required to effect a repair!

Which they did and it was known as Janus, then Servis went bust.

Without the Janus programmer it is not possible to reprogram some modules and the machine is rendered unrepairable.

How To Find The Date Code

Servis UK
993602571/20042708439
99 or 2004...year of manufacture
next 2 numbers...month
rest of numbers just SUK reference, on some indicates date of month

Rob

Siemens

WFF2000 Range

Fault No.	Spin LED	Rinse LED	Wash LED	Fault detected	Remarks	What happens
1				Door open after program started	Detected after 1 minute	Program halts and can be restarted
2				Water intake takes more than five minutes. Error after more than 10 minutes.	Water tap closed Filters blocked Water pressure low	Program halted Pump starts after ~5 minutes Program can be restarted
3				Heating time exceeds 105 minutes	Failed to reach temp Heater or heater wiring faulty Low voltage Calcified heater	Continues to end with no heat
4				Takes longer then 6 minutes to drain down	Has not reached level over 1 Blocked sensor (pressure switch) Pressure switch fault Faulty or blocked drain pump	Program aborted “fatal error” without pumping
5				Fault in motor/drive circuit	No tacho signal Triac fault, short Reverse relay faulty	Continues to try to start motor After several attempts, program aborted with fatal error
6				Unexpected heating	Machine heats at a stage where t should not do so	
7				NTC failure open/short	Faulty NTC Faulty wiring to NTC	No heat but completes program

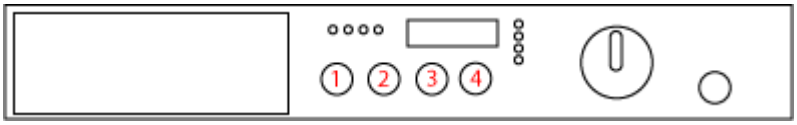
NOTE: The codes for the WFF range of Bosch machines differs from the Siemens ones, please see the Bosch section for the appropriate codes for those machines.

Smeg

Late Smeg washing machines and washer dryers (2003)

Also covers Smeg manufactured rebadged machines

E1	Water loss safety device
E2	Anti-spilling device (only outside washing program)
E4	NTC water in short circuit or interrupted
E5	No load
E6	No drain
E10	Motor over current
E11	Motor control triac in short circuit or interrupted
E12	Tachometer
E13	PTC door block
E14	NTC dryer in short circuit or interrupted
E -	Interface communication problem – mother board
E -	Card hardware malfunctioning



Test Sequence

To setup for test make sure that the machine has power and water connected okay then set the dial to position 9 for drain and spin. The general control panel should be off and the door closed.

After this proceed with the test as follows:

- Power up by holding option button 2 depressed
- From power on you have 30 seconds to press button 3 four times and all the LEDs should light
- Within 20 seconds press button 1
- Machine will fill from the prewash valve
- Press button 2 and the machine will fill from the main wash valve
- Press button 2 again and both main wash and hot valve fill
- Press button 2 again and the wash valve stops
- Once filled to level the motor turns clockwise
- Press 2 and the bleaching valve energises, cuts after 90 seconds with no operator action
- (If water stop is fitted you must activate this for a few seconds and verify the drain pump is okay)
- Press 2 and heat starts and motor runs to exit move the selector to a different position. The machine will advance when it reaches 80°C or 90 minutes without any intervention. It is recommended that at least five turns is run on this phase to check for any leaks.
- Press 2 again and the machine will drain then spin to 100rpm. 10 seconds at 500rpm and 240 seconds at maximum speed. Press the **spin speed** button to check the speed reduction function. To exit turn to “no Spin”

Washer Dryer Additional Tests

- Press button 2 and the condensate valve is energised
- Press 2 again to bring on the dryer fan
- Press 2 again to activate the fan and drying heater
- Press again to end

Once finished all LEDs should be on or, if the machine has a display, “**END**” should be displayed.

Smeg dishwasher error codes

For fully integrated dishwashers with display. (Not the latest type)

E2 Over fill detected
E3 Not heating
E4 Thermistor disconnected or o/c
E5 No water fill
E6 Heating detected with no water present
E7 Not draining
E8 Read error, rest and try again
E9 Pause in test programme, not a fault code

SMEG dishwasher error codes LED type

E1	1st flashing, 5th lit	Flood protection system activated
E2	2nd flashing, 5th lit	Safety pressure switch activated
E3	1st, 2nd flashing, 5th lit	No heat in time allowed
E4	3rd flashing, 5th lit	Temperature sensor fault
E5	1st, 3rd flashing, 5th lit	No fill
E6	2nd, 3rd flashing, 5th lit	No drain in time allowed
E7	1st, 2nd, 3rd flashing	Flow meter detected when not fitted reset required
E9	same code as E1	

Smeg 3 Button With LCD Display

E1 Overfill detected
E2 Water level fault
E3 Not heating
E4 Temperature probe or thermostat failure
E5 No fill
E7 No drain
E9 As E2

E1, 2 and 3 will abort the program while E5 and 6 will not cause the machine to halt. Reset by opening and closing the door or pressing the start button.

Smeg 5 Button With LCD Display

E1 Overfill detected
E2 Water level fault
E3 Not heating
E4 Temperature probe or thermostat failure
E5 No fill
E6 No drain
E7 Turbo drying system failure
E8 Changeover/alternating valve faulty where fitted
E9 Overfill for versions with turbo drying

E1, 2, 3, 4, 5. 8 and 9 will abort the program while E5, 6 and 7 will not cause the machine to halt. Reset by opening and closing the door or pressing the start button.

Test Procedure

To engage the test cycle open the door and apply power then press the program button four times within three seconds. Once the test cycle is ready to start the display will show “F1”.

	Description of test	Display
1	**Start of test** Close the door and the machine will fill, if the motor is faulty this will halt prematurely.	**F1** **C1**
2	**Fill Check** As the machine fills open the door then close it again. The machine will continue after about five seconds	**C1**
3	**Dispenser Check** After the fill is completed the soap dispenser will energise for about one minute On this stage the lower spray arm is operational	**C2**
4	**Heating Phase** Heat to 50°C. Upper spray arm operational at this point	**C3**
5	**Engineer Intervention** Once temperature is reached the machine will buzz and stop. To continue the test press the Start button.	**C6**
6	**Pressure Switch Test** Wash motor stops and machine fills to safety level On 45cm models you need to manually trip the base safety float to continue	**C8**
7	**Engineer Intervention** Once the safety level is reached press the Start button	**C9**
8	**Drain** Machine drains and the regeneration valve is energised	**C9**
9	**End** After drained the machine stops. Check that the soap dispenser has operated correctly	**CF** **F1**

Smeg LS6000 Series Electronic Dishwashers

Control panel looks like shown above

E1 Anti-flood device activated
E2 Safety level fault
E3 Not heating
E4 Temperature probes or thermostat failure
E5 Not filling
E6 Water tank not filling
E8 Changeover/alternating valve faulty where fitted
E9 As E2

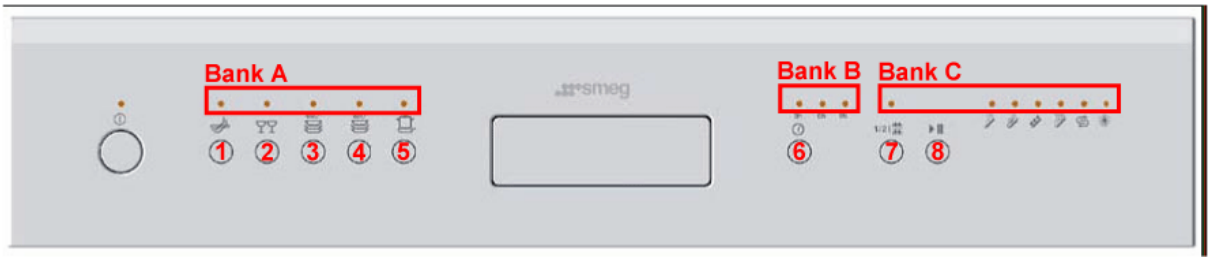
E1, 2 and 3 will abort the program while E5 and 6 will not cause the machine to halt. Reset by opening and closing the door or pressing the start button.

Test Procedure

Open the door and within three seconds press the “start/Pause” button twice, the display should now read “CO”

	Description of test	Display
1	**Start of test** Press the start button for about one second and after a few second the machine will start to fill. Open the door to interrupt the test, press start and close the door. The program will restart.	**C1**
2	**Soap dispenser check** As the machine reaches fill level the detergent dispenser is energised	**C2**
3	**Heating Phase** Heat to 50°C. Verify the regeneration.	**C3**
4	**Engineer Intervention** Once temperature is reached the machine will buzz and stop. To continue the test press the Start button.	**C4**
5	**Upper Section Fill** Upper half fills for five seconds and wash pump energised then a five second pause.	**C4**
6	**Lower Section Fill** As above for the lower section.	**C5**
7	**Regeneration** After a short wash the regeneration valve is energised for about 10 seconds with the wash motor running	**C7**
8	**Pressure Switch Test** Wash motor stops and machine fills to safety level	**C8**
9	**Engineer Intervention** Once the safety level is reached press the Start button	**C9**
10	**Drain** Machine drains and the regeneration valve is energised	**C9**
11	**End** After drained the machine stops. Check that the soap dispenser has operated correctly	**C-**

Test Cycle For Freestanding And Built In E5 Generation



Before starting ensure that the dishwasher is empty by cancelling the program down, do this by holding down button "1" until the first three LEDs in Bank 1 light. That machine will then drain down and you will se that the program has ended when the first four LEDs on Bank C flash.

Starting The Test

Close the door and select the "soak" program, to do this press button "1" and the fist LED on Bank 1 will light.

Press "Start/Pause", button "9" and the second (program indication) LED in Bank C will start to flash. Then hold down the "Start/Pause" until the LED becomes steady and the buzzer sounds, this should take about thirty seconds. Release within three seconds when this happens.

Press the "Start/Pause" again to confirm that you wish to run the test cycle and the following program LEDs will flash to confirm the operation as shown below:

Normal Wash system

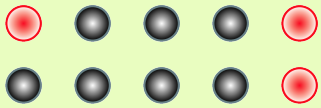
Alternate Wash system

If the LEDs do not shows as above then the test procedure has not been correctly initiated and you will have to start again.

To exit the test cycle simple power the machine off.

The following page details what happens during the test cycle.

Status is shown on the program indication lights in Bank C

1	2	3	4	5	What's happening	Alternating valve position (where fitted)
					**Waiting To Start** Door closed and the machine is ready to start the test cycle Indicator LEDs light as noted on previous page.	
					**Test Start** Press **Start/Pause** until the leftmost LED in the program indicators (Bank C) starts to flash. After a few seconds the machine will start to fill and then the main wash pump will rum	Lower basket
					Detergent Dispenser Test The detergent compartment is energised as soon as the fill level is reached and the pressure switch signals to halt filling	Upper Basket
					**Heating** The dishwasher heats to 50°C **(NOTE: Cancel heating by pressing the Start Pause button and move on to the next phase of the test)**	Upper Basket
					**Regeneration** With the temperature reached the machine will lock and the buzzer will sound. The regeneration valve is now energised. **(NOTE: To continue press the Start Pause button and move on to the next phase of the test)**	
					**Safety Level Check** After the **Start/Pause** has been pressed from the last phase the machine will again start to fill until the safety level is reach. During this phase the main wash pump is not operational.	
					**Pause And Drain** As soon as the safety level is reached the buzzer will sound and the machine will start to drain **(NOTE: To continue press the Start Pause button and move on to the next phase of the test)**	
					**Drain And Drying Fan** The machine will continue to drain after the **Start/Pause** button is pressed and, at the same time, the regeneration valve is energised. Once empty the drying fan will be energised as the pressure switch detects that the tub is empty.	
					**End Of Test** After draining is completed the machine will show the program lights as indicated to signal that the test has ended Check the detergent compartment has operated correctly and is now open.	

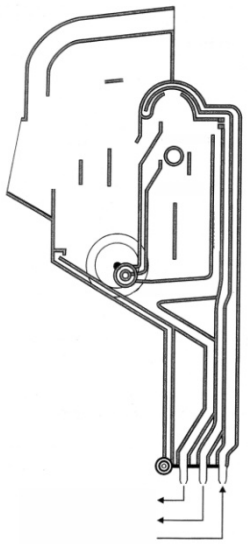
NOTE: If the door is opened whilst on test you can continue on reclosing the door and pressing the **Start/Pause** button, but the phase that you were on will be skipped.

Fault Codes For E5 Generation

Alarm	Problem	LED	LED	LED	LED
E1	Anti-flood activated	●	○	○	○
E2	Water safety level activated	○	●	○	○
E3	No heat	●	●	○	○
E4	Temperature probe not detected	○	○	●	○
E5	No fill	●	○	●	○
E6	No Drain	○	●	●	○
E7	Failed turbine flow meter	●	●	●	○
E8	Fault with alternating valve where fitted	○	○	○	●
E9	Fill level exceed (flow meter)	●	○	○	●

The Famous ‘‘E2’’ Error

Smeg tells us that this error is caused by “breakdown water level”, very helpful.



From UK Whitegoods articles written by Chris Chantrell:

E2 specifically means that the water level safety system has been activated. In plain English, this means an overfill, and the secondary water level switch has been activated.

To explain the problem fully, a brief description of how the fill system works follows.

Water is introduced to the machine via a solenoid controlled water valve. This is switched initially by the computer board (“Timer” in SMEG-ese). The water is routed through a fill matrix on the right hand side of the appliance. This contains various channels and chambers which may be filled as the programme requires; the rest of the water being allowed to run down and through a transfer tube into the sump of the machine (the area covered by the filters). As the water level rises, air is displaced from two “collecting chambers”. One of these acts as the displacer to the water level control switch, the second is the safety, or overfill switch. The switches are operated by air pressure.

The problems arise because food deposits build up initially in the transfer tube, and latterly in the fill matrix itself. This restricts the free flow of water into the machine and causes water to back up and operate the safety system. There is no circulation pressure in this particular water circuit, so there is nothing to wash the detritus away.

In my experience, 9 out of 10 instances of the “E2” problems can be solved by identifying the transfer tube and cleaning it out. Looking into the sump area without the filters, you should spot a tube with a black rubber flap at the end. This is the one to be cleaned out. Methods which have been discussed include long stout Tyraps, skinny long-handled bottle brushes and blasting water or air down the tube through a fine hose. The net result is a surprising amount of crud arriving in the sump of the machine. This is actually a good sign as it indicates that deposits are being removed.

However, on occasion, the fill matrix itself can become choked. It can be removed and to our certain knowledge people have used garden hoses, even jet washers to try and dislodge the goo, with varying degrees of success. The only guaranteed repair at this point is to replace the matrix and ensure that crockery is rinsed of any heavy detritus before washing to ensure that there is no repetition.

However, in experience as a Smeg and MFI agent for many years we have found that in 9/10 cases the side fill chamber, or matrix, will be blocked. Often this can be cleaned with some really hot water and a good flexible bottle brush however, if that fails to clear the fault then the matrix will likely need replaced.

Access the matrix by removing the right hand side panel (looking from the front).

The list of possible failures, given by Smeg, are as follows:

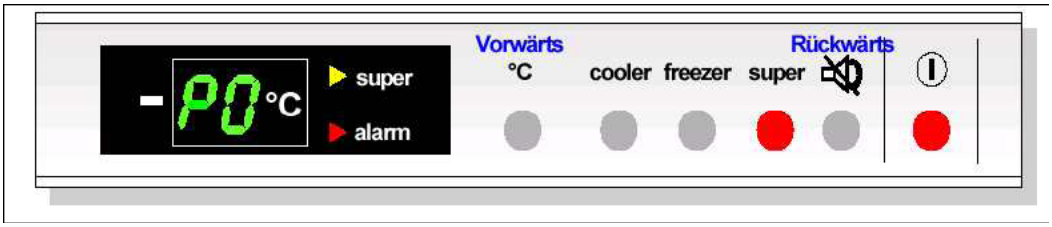
- pressure switch level defective
- rubber pressure switch bad positioned (LS97)
- difficulty of starting or pump washing breakdown
- presence of water in the tube safety pressure switch
- loading electric valve with elevated course
- electronic card that doesn't succeed in reading the signal of height

This advice will also apply to machines produced by Smeg for the likes of Teka, Hygena, Diplomat and so on.

Smeg Fridge Freezer (Bosch Made)

Fault	Sensor	Temperature	What happens
E1	Fridge air sensor	>50°C or <44°C	Cold into fridge, 7minutes on Compressor on, fan on 30 minutes off
E2	Freezer Air Sensor	>50°C or <44°C	Continued compressor functioning Defrost not affected
E3	Evaporator Sensor	>50°C or <44°C	On defrost evaporator and drain channel elements active for 25 minutes After defrost fan activated immediately

Test Program



Press and hold the **Super** button as you apply power
After about five seconds the Super LED lights
Release the **Super** button
Display read "P0" (P zero)

Us the **temperature selection** button to select mode and the **Super** button to start the test of each area:

Program	Functions
P0	Compressor activated Compressor activated without protective reactivation
P1	Freezer fan activated
P2	Condensate channel heater activated
P3	Evaporator heater activated
P4	Fridge Fan activated
P5	Freezer compartment sensor value Recording of absolute temperatures
P6	Evaporator sensor value Recording of absolute temperatures
P7	Fridge air sensor value Recording of absolute temperatures
P8	Warning buzzer test
P9	Contact button status for freezer door
PA	Button and door status for fridge door
PB	Defrosting cycle tested

Tricity AW1400

(Other Electrolux, Zanussi & Tricity models Unknown Presently)

Press & hold start/pause and any other option button

Turn dial 1 step clockwise lights should start to flash after 2 secs

Each turn clockwise operates a function :

1. Step
2. Door lock water thru wash
3. Water thru pre wash
4. Water thru conditioner
5. No visible function
6. Heating max 10 mins
7. Checks tub for leaks, 55rpm clockwise· 55 anti ·250 rpm spin
8. Drain & spin

turn to position ten (10) to display fault code

Titan Washing Machine

When the machine faults you need to press the following sequence of keys to reveal the fault code as noted:

Prewash> Extra rinse> Prewash> Extra rinse> Prewash> Extra rinse> Prewash> Extra rinse>

So basically press the “prewash” then “extra rinse” four times each alternately.

Deciphering the codes

Each button represents a value as shown in the table below, add up the values to get the fault as shown in the list below the examples shown in the table.

Prewash	Speed Wash	Extra Rinse	Rinse Hold	What the example means
8	4	2	1	Numerical value of lit LED
				“4” lit so the problem is fault code 4, the drain pump
				“8”, “4” and “1” are lit, so the fault code is 13, motor problem
				“4” and “2” are lit, giving a value of 6 which indicates a problem with the hot solenoid

1	EOL Test
2	Fill overheat
3	Level fault
4	Drain pump
5	Clear
6	Hot solenoid
7	Cold Solenoid
9	Overfilling
11	Heater
13	Motor
15	Interlock

If the door lock fails to lock or unlock after two attempts the fault may be shown as a flashing door locked LED.

Whirlpool

Whirlpool (Fisher & Paykel) Dish Drawer Appliances

F1	Flood protection activated
F2	Circulation motor(s) not running
F3	Water temperature exceeds 85c
F4	No heat detected
F9	Electronics (EEPROM error)
U1	No fill in time allowed.

Whirlpool Dolphin Dishwasher Fault Codes

If no LCD display count the flashes on start LED
For example 4 flashes then 1 second pause = F4

F1	1 Flash	NTC Failure
F2	2 Flashes	Water Leakage
F3	3 Flashes	Heating System
F4	4 Flashes	Draining Failure
F5	5 Flashes	Rotor Blocked
F6	6 Flashes	Water Tap Closed
F7	7 Flashes	Flow Meter Failure
F8	8 Flashes	Water Level Failure
F9	9 Flashes	Continuous Water Inlet
F0	10 Flashes	Sensor Failure (Only displayed in .test program)
FA	11 Flashes	Optical Water Indicator
FB	12 Flashes	Motorised Diverter Valve
FC	13 Flashes	Water Hardness Sensor

Also see "CDA" fault codes for full diagnostic and explanations

Whirlpool Dolphin Range of Dishwashers: Diagnostics

- Make sure the machine is empty before doing this.
- Select the first program, normally rinse.
- Switch off.
- Press and hold the start button and switch back on.
- Light will start to flash, release button.
- Press the start button and close the door.
- Machine will now go through a diagnostic by filling, washing, heating and draining.
- Any errors will be shown by the start button light flashing a code.

Whirlpool Dishwashers with 2 Digit Display.

H1/ Eeprom error. This can be temporary.
H2/ Turbidity sensor error - can be sensor or connections.
H3/ Water variator valve error - can be valve or connections.
H4 + H7/ No heat detected in the time allowed. Heater, NTC, connections, relay on PCB, underfilling all possible.
H5/ Constant fill. Valve failure, T7 triac failure on PCB.
H6/ No pulses from flow meter. Valve failure, flow meter failure, wiring.

Overflow. There is no code shown, but drain pump may run constantly. Also, drain pump, flow meter, valve and wiring failures possible.

Function Test
Press and hold "Start" and "Programme Select", switch on. After a few seconds, all LEDs should light briefly. Press "Start" to run test sequence. Any error detected will be displayed as above.

Whirlpool Oven Codes

F01 Open or short circuit temp probe Replace temp probe
F02 Overheating of the oven Replace oven power unit
F03 Oven power unit not configured Replace oven power unit
F04 WISP protocol doesn't work Replace oven power unit or hob control unit

Whirlpool Steam Chef Codes

Fault Code	Meaning	Check:
F0	Wrong value of cavity sensor	**Ω** - Sensor or cable has shorted or OC, RAST loose or control unit faulty
F1	Food probe registers incorrect value	**Ω** - Sensor or cable has shorted or OC, RAST loose or control unit faulty
F2	Steam chamber NTC registers wrong value	**Ω** - Sensor or cable has shorted or OC, RAST loose or control unit faulty
F3	Climate sensor registers wrong value	**Ω** - Sensor or cable has shorted or OC, RAST loose or control unit faulty
F4	Flap motor registers wrong value	**Ω** - Sensor or cable has shorted or OC, RAST loose or control unit faulty
F5	Failure to back up EEPROM	Control unit damaged, electronics zapped by EMF, control unit faulty
F7	No or poor increase of water temperature	Sensor or cable has shorted or OC, RAST loose or control unit faulty, heating element or wiring to it faulty, NTC faulty.
F8	Water detected after drain by level sensor	Drain pump faulty, kinked hose, blockage. RAST loose or control unit faulty
F9	Climate sensor detects	Too much cold food in the oven. Door not sealing airtight. RAST loose or control unit faulty
None	Oven does not heat	Element fault or cable/connector damaged. Safety stat tripped or possible control unit fault.

Ω - check resistance values

Whirlpool Ceramic Induction Hobs

If anything goes, tell the customer to call Whirlpool as the parts are ludicrously expensive, more than a new appliance in some cases, and all mean that you have to replace the internals of the unit pretty much.

Whirlpool washing machine codes

FH	No water inlet
FA	Aqua stop failure
FP	Drain failure
F05	NTC failure
F06	Tachometer failure (no motor movement detected)
F07	Triac short circuit detection (motor control module)
F09	Overflow
F10	Motor control unit failure
F11	Communication error (control unit)
F13	Dispenser circuit error
F14	EEPROM failure (control unit)
F15	Motor control unit error
F16	Control unit failure
F18	Control unit failure
F20	Control unit failure
F21	Control unit failure
F22	Control unit failure
FDL	Door lock error
FDU	Door unlock error

How To Find The Date Code

Whirlpool 12 digit serial numbers
500302123456
50 = factory code
03 = year (2003)
02 = week number

Albert

Whirlpool W/M AWO/D series

[F00]pump triac failure
[FH] no water inlet
[FA]aquastop
[FP]drain failure
[F5] ntc
[F6] tacho (no motor action)
[F7] triac short
[F8] heater o/c
[F9] overflow
[F10] motor control thermal
[F11] comunication
[F12] element short
[F13] dispensor circuit failure
[F14] eeprom failure

Whirlpool Side-By-Side US Styled Fridge Freezers

Diagnostics information to help with fault finding on US-styled Whirlpool fridge freezers.

Test Procedures

Normally when the freezer door is opened the receiver will flash twice, pause for a second then repeat. This would indicate that the optical system is okay and working as it should be.

Diagnostic Mode

- Turn the machine off at the mains and leave off for at least 60 seconds
- Close the freezer door for the duration
- Power the machine back up from the mains
- Open the freezer door and observe the LED and it should operate as detailed above indicating normal operation of the system
- If you push on the emitter flap door and the optical path is clear then the LED should light solid indicating that there is no fault.

From power up you have 60 seconds to run the diagnostic before normal operation is resumed.

Diagnostic mode cannot be entered while the icemaker is in its ice-making cycle. To see if this is the case simply press the emitter flap door and look at the status LED as it will flash on/off at intervals of one second, if this is the case then diagnostics will not work.

Error Code Flashes

Three flashes, delay of two seconds then repeated

Icemaker fault – replace icemaker

Four flashes, two second delay then repeated

Infrared receiver relay is fault – replace IR receiver PCB

Two flashes, two second delay then repeated

Infrared receiver optics faulty – replace the IR receiver PCB

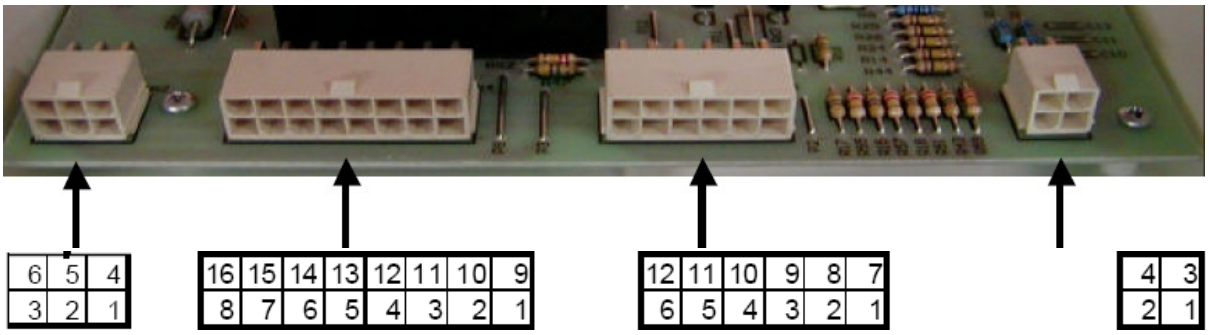
Five second solid

No faults present on system

NOTE: Only the first fault will be displayed if there are multiple failures you must repair the first fault before any further failures are shown.

Pin-outs

The pin outs are as shown below to the board



Connector		Terminal	Component	Resistance	Voltage	Detail
12	Evap Fan	8		229	230	Evaporator fan neutral
12	Bi-metal Stat	1		0.33		Bi-metallic stat feedback neutral Measure to connector 16-14
12	Evap heater & fuse	1		85	230	Bi-metallic stat feedback neutral Measure to connector 16-1L
6	Iced water valve	1		666K	230	Live
	Black	4				Neutral
6	Cool water valve red	2		961K	230	Live
		5				Neutral
6	Condenser fan	3	2	5.56	230	Live
		6	1			Neutral
3	Compressor	1				Check overload continuity
		2				
16	Damper Motor	4	2		230	Check continuity
			1			Measure to connector 12-7N
16	Receiver - ice maker	3	11		230	Receiver line L
		15	4			Icemaker and receiver neutral

16	Emitter	11	4	230	Emitter neutral N
			1		Measure to connector 12-6L
16	Damper motor and heater	4	2	230	Damper line L
		16			(Only) 6th sense neutral
16	Water micro s/w and wiring	9		230	When micro switch operated
					Measure to connector 12-10N
16	Fridge lamp	7		230	When door open
	Lamp load	13			
16	Circuit	6		230	When freezer door open
		16			(Only) 6th sense neutral
16	Lamp circuit	5			Lamp line L
		16			(Only) 6th sense neutral

Emitter	Receiver	3	1	3 to 1 checks continuity
		2	2	2 to 2 checks continuity

Receiver	Ice maker		8	
			4	8 to 4 checks continuity
Receiver	Ice maker		4	
			3	4 to 3 checks continuity

4	Fridge Sensor	1	7916	+2
		3	7164	+4
			6491	+6
	Freezer Sensor	2	32668	-24
		4	23063	-18
			16467	-12

Zanussi

Zanussi Washing Machine Error Codes

Most models with the single control/display (EWM1000) PCB. The EWM2000 PCB is used on the AEG machines and there is very probably a huge crossover in the information between these two.

NOTE: These are the engineer codes displayed after entering the configuration/diagnostics mode.

To enter diagnostics:

1. Switch off the appliance.
2. Press and hold down **START/PAUSE** and any one of the option buttons simultaneously.
3. Holding down both buttons switch the appliance on by turning the programme selector one position to the right (clockwise).
4. Continue to hold down the **START/PAUSE** and **option** buttons until the LED begins to flash (at least 2 seconds).

In the first selector position, the operation of the buttons and the relative Led's is checked; turning the selector knob clockwise activates the diagnostics cycle for the operation of the various components and displays any alarm conditions.

E11 Difficulty in filling during wash phase
E13 Water leakage.
E21 Difficulties in draining.
E23 Malfunction of drain pump triac.
E24 Sensing circuit of the component (triac) that controls the drain pump faulty
E33 Incongruence between closure of anti-boiling and 1st level contacts of pressure switch
E35 Water level too high
E36 Sensing circuit of anti-boiling pressure switch faulty
E37 Sensing circuit of 1st level pressure switch faulty
E39 HV sensing circuit of anti-overflow pressure switch faulty
E40 Door open, Interlock, wiring or main PCB
E41 Door open
E41 Problems with aperture of door
E42 Problems with aperture of the door
E42 Problems with aperture of the door
E43 Problems with the triac which actions the door interlock
E43 Problems with the triac which actions the door interlock
E44 Door closure sensing circuit faulty
E45 Problems with the sensing circuit of the triac that actions the door interlock
E51 Motor power triac short-circuited
E52 No signal from the motor tachometric generator
E52 No signal from the tachometric generator
E53 Problems with the sensing circuit of the triac which powers the motor
E54 Motor relay contacts sticking
E61 Insufficient heating during washing
E62 Overheating during washing
E66 The contacts of the heating element power relay are always closed
E71 NTC washing sensor faulty.
E82 Error in reading the RESET/OFF position of the programme selector.
E83 Error in reading the programme selector code
E93 Incorrect machine configuration.
E94 Incorrect configuration of washing cycle
E95 Communications error between microprocessor and the EEPROM
E96 Incongruence between control panel version and configuration data
E97 Incongruence between selector version and configuration data
EA1 Drum positioning system (DSP) faulty (top-loaders only)
EB1 Incorrect mains frequency

EB2 Mains voltage too high
EB3 Mains voltage too low

Chinese Zanussi ZWG1120,1140 etc (Little Swan Production)

E10 Fill overtime. No water level change in 3 minutes during filling the water. Check the water inlet valve, air pipe get broken or bad airproof. Check to have hung up the drain hose

E11 Lots of water in the tub. The water level is higher than the overflow water level when the washing machine at power on, delay, fault or running condition. Check the water inlet valve, the drain pump and the PC board

E12 Overflow The water level is higher than the overflow water level. The water inlet valve has failed.

E20 Bad connection of the drain pump. The PC board can not get the drain pump signal. Check the drain pump wire connection

E21 Drain overtime. The water level does not change in 3 minutes during drain. Check the drain pump.

Check the filter of the drain pump to prevent jam. Check the drain hose to prevent jamming. E30 Can not lock the door lock. Fail to lock the door lock for 6 times when the PC board tries to lock the door lock after you press the START key. Check the door hook and the door lock to get correct location

E31 Can not unlock the door lock. Fail to unlock the door lock for 6 times Check the door lock

E33 Water level sensor fail. The frequency of the water level sensor is out of the spec. Check the water level sensor

E34 Temperature sensor fail. Temperature sensor (NTC) get broken. Check the temperature sensor (NTC)

E60 The motor can no drive. The motor fail to drive for 3 times. Check the PC board and the motor

E61 No speed feed back signal. The PC board can not get speed feed back signal when the motor drive. Check the speed feed back line of the motor to prevent fall off

E62 The speed feed back signal abnormality. Triac get broken

Zanussi Washers, IZ style many models

Push button control models with or without digital display FLE14... etc

Press both start & skip buttons (square & triangle)

switch on holding start& skip for 4 seconds

Display board is checked by lighting each led in sequence.

Each press of the fabric button tests functions.

1. Fill main
2. Fill pre wash
3. Fill conditioner
4. Hot fill if applicable
5. Heating (with circ pump if applicable) max 10 minutes
6. Checks tub for leaks 250 rpm spin
7. Drain and spin to max
8. Dry if applicable
9. End

Zanussi washing machines FJS 1025W/1225W/1425W

E10 Water supply.
E20 Draining.
E40 Door open.
EF0 Filter clogged.

How To Find The Date Code

Electrolux Group serial numbers (Zanussi, Tricity Bendix, AEG etc)
First digit = year of manufacture, next 2 digits = week of manufacture, rest are just general factory numbers.
34900122 = 2003 week 49

Pre 1987 Zanussi machines, first 2 digits = year, next 2 digits = month
8607 = July 1986

Farmboy

Zanussi, Electrolux & Tricity Bendix Dishwashers

From UK Whitegoods by Chris Chantrell

There are two common types of fill systems used by the Electrolux group of dishwashers and both are discussed frequently on UK Whitegoods.

Both systems utilise displacement of air to operate pressure switches, which will cut off the electrical supply to the water valve and thus the supply of water into the machine. They each also have a flood protection system to prevent overfilling should the primary control system become inoperative. This works by diverting air into a pressure cut-off on the water inlet valve, which will remain electrically activated.

The Blue Tubes

This is the early system and may be easily identified by looking at the large filter in the appliance. If it has a large dome in the moulding at the 3 o'clock position, you have the early system. This is a very simple set-up and, barring a mechanical failure of the pressure switch itself, is always repairable.

Remove bottom basket, rotor and large filter. This will reveal a translucent dome at the 3 o'clock position, retained by a single screw on the top. When undone, the dome can be removed and will reveal the two blue tubes, and a cranked spout. Lift all three out and clean thoroughly, jetting water through the tubes until clear. 75% of the time, this will clear the problem. However, if on re-assembly the machine will fill once and then not refill, you will need to clean out the transfer hose. This is a horseshoe shaped hose mounted in a bracket on the underside of the machine. With the power off and the machine tipped back, remove the hose and flush out. Don't forget to clean out the spigots which the hose mounts onto.

The IWMS System

This is the later set-up and the one which causes all the headaches. In theory, the system is very simple. The IWMS is a large plastic moulding housed under the left hand side of the dishwasher. It comprises a series of chambers which are filled and emptied as the programme requires, and a "main channel" which allows the water to run down into the machine for circulation in the wash programmes. The water passes from the IWMS through two tubes – ones is a rigid plastic moulded pipe, the other a flexible plastic one. Both are prone to choking with food detritus, and need to be cleaned out from time to time. They may be identified as passing across the front underside of the tub and curving round to the sump area. If flushing these tubes out does not restore correct fill function, the IWMS will be at fault. Viewed from the side of the machine, the lowest parts of the moulding frequently appear to be black in colour – this is food detritus which will have built up over time. Theoretically the moulding can be removed and an attempt made at cleaning it out; however because of the myriad of narrow channels contained within, this rarely works. The only practical solution is a replacement IWMS and in future ensuring that crockery has had any heavy deposits thoroughly rinsed off before insertion into the dishwasher. There is no circulation through the IWMS area, and the water enters the machine under gravity, so over time sedimentation can and will occur.

Zanussi Dishwasher Codes:

Codice Leds
SAFETY DEVICE POSSIBLE CAUSES
WATER FILL TIME-OUT
The correct level is not reached.
The pressure switch does not
switch to FULL (1-3) within 4
minutes after activation of the
solenoid valve

[AL 5] [LD9]PRESSURE SWITCH ON “EMPTY” (1-2) When the level has been reached, the pressure switch does not
return to 1-3 within the maximum time of 60 secondsc
a) The tap on the fill hose is closed.
b) Mains water pressure <3 bar.
c) The anti-flooding device has intervened.
d) Fill solenoid/connections disconnected.
e) Pressure switch faulty/Loose connections.
f) Obstructions / Leakage from the tube connecting the
IWMS to the pressure switch.
g) Central filter clogged.
h) Excessive foam.
i) Dishes upside-down.
j) Siphon effect in drain hose.

AL 6] [LD10[/b][/b][/b][/b]] DRAIN TIME-OUT
a) Domestic drain unsuitable (blocked)
b) Motor faulty (pump unit / drain impeller)
c) Pressure switch faulty (blocked on 1-3)
d) Obstruction in connection between IWMS and
pressure switch
e) Obstruction in tube between IWMS and sump
f) Control board (relay interrupted)

[AL 4] [LD9] +[LD10]
INTERVENTION OF ANTIFLOODING
DEVICE
a) Leakage from the various connections
b) Floating sensor blocked mechanically
c) Float microswitch faulty
*) [AL 3] [LD11]
WATER HEATING TIMEOUT
The correct temperature is not
reached within 45 minutes after the
heating element switches on
a) Heating element interrupted
b) Safety thermostat open
c) Electrical connections interrupted / loose
d) NTC sensor faulty / Poor thermal contact

e) Insufficient water circulation in tub
f) Motor faulty (pump unit / washing impeller)
NTC SENSOR SHORTCIRCUITED
Range < 450 Ω
a) Temperature sensor faulty (short-circuited)
b) Electrical connections short-circuited
*) [AL 1/2] c) Temperature too high (>90°C) [LD9] +
[LD11] NTC SENSOR OPEN
Range > 26.700 Ω
a) Temperature sensor faulty (open)
b) Electrical connections interrupted/disconnected
c) Temperature too low (< -10°C)

[AL 7] [LD10] +[LD11] MOTOR INOPERATIVE
a) Motor winding interrupted/short-circuited
b) Electrical connections loose / interrupted
c) Motor jammed (foreign bodies/pump unit)
d) Tachymetric sensor interrupted/short-circuited

[AL 8][LD9] +[LD10] +[LD11]MOTOR TRIAC SHORTCIRCUITED
a) Control board (Triac short-circuited)
In alarm conditions - [AL4], [AL5], [AL6], [AL7], [AL8] Dishwasher stopped – the corresponding LEDs flash
_ To cancel the alarm condition Press (S0) to switch the dishwasher off.
_ When the dishwasher is switched on again The cycle resumes from the point at which it was interrupted.
*) In alarm conditions - [AL1/2], [AL3]] The cycle is completed, and no alarm is displayed to the user; the
condition is simply stored in memory for inspection

Handy General Tips

Diamond H Wiring Reference

Pilot = S
Line = P1
LoadA = 2
Neutral = P2
LoadB = 4

33ER3HT and 43ER105B1

Pilot = S2
Line = P1
Load A = 2
Neutral = 4
Load B = P2
Link wire for Pilot wire fits between P1-S1 NOT P1-4 as additional wiring diagram suggests

Dave Conway

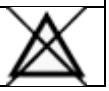
Standard Thermostats For Refrigeration

VT9's will fit LEC fridges with an exposed evaporator, for wet wall use a VX0 which is basically the same but has a lower cut out temperature, this applies to Candy/Kelvinator as well

A top six thermostats suggestion:
VT9
VC1
VS5
VX0
VT93/VT3
VP4/VL4

Dave Conway

Laundry Symbols Quick Reference

Wash at a maximum temperature of 30°C	
Wash at a maximum temperature of 40°C	
Wash at a maximum temperature of 50°C	
Wash at a maximum temperature of 60°C	
Wash at a maximum temperature of 95°C	
Suitable for cotton wash with maximum agitation	
The dash underneath the tub shows that a reduced level of agitation is required to prevent damage to the article, typically used to indicate a synthetic wash	
The double dash indicates a gentle or wool wash is required to prevent damage	
Hand wash only	
Not suitable for a washing machine or do not wash	
Chlorine bleach can be used	
Do not bleach	

Contacts

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Kilmarnock
KA1 2NP

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Fax:	0845 172 8003
Website:	www.ukwhitegoods.co.uk
Email:	admin@ukwhitegoods.co.uk

ISE Limited
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KA1 1RQ

Phone:	0845 250 8699
Fax:	0845 250 8698
Website:	www.iseappliances.co.uk
Email:	admin@iseappliances.co.uk

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