

Revisions:

Rev. 00 18.02.2009 First edition

Rev. 01 08.10.2009 Aquastop error E7 has been added to error code page E17
and explanations of E18 errors have been updated.

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Listen to customer's complaint.

Close machine door if open. Go to service mode. To enter service mode, change program selection knob position to Cottons while On/Off is in Off position. Then, press and hold START/PAUSE button and turn on On/Off. Front lid will be locked in service mode.

Is display screen energized when the machine is turned on?

No

Is there 220 VAC between noise filter ends 1 and 2 (brown-blue)?

No

Check power cable and fuses. Change power cable if defective.

Yes

Is front door locked? Check by trying to open the door. Lock icon on display screen will appear in steady state when front door is locked.

No

Check if there is power on On/Off button. PICTURE: first_1

No

Check cable between noise filter and On/Off button; ensure that sockets are fitted well.

Yes

Change control board.

See error code. Is there E9 error code?

No

Safety switch cannot be locked. Check cabling between control board and safety switch.

Replace safety switch. Try again.

Yes

Door triac open circuit. Change control board.

Is there error code?

No

1) Keep on testing machine functions in service mode.

OR
2) To find the error code that complies with customer complaints, go to error codes page.

Yes

Go to relevant error code page. Perform controls related to the error code.

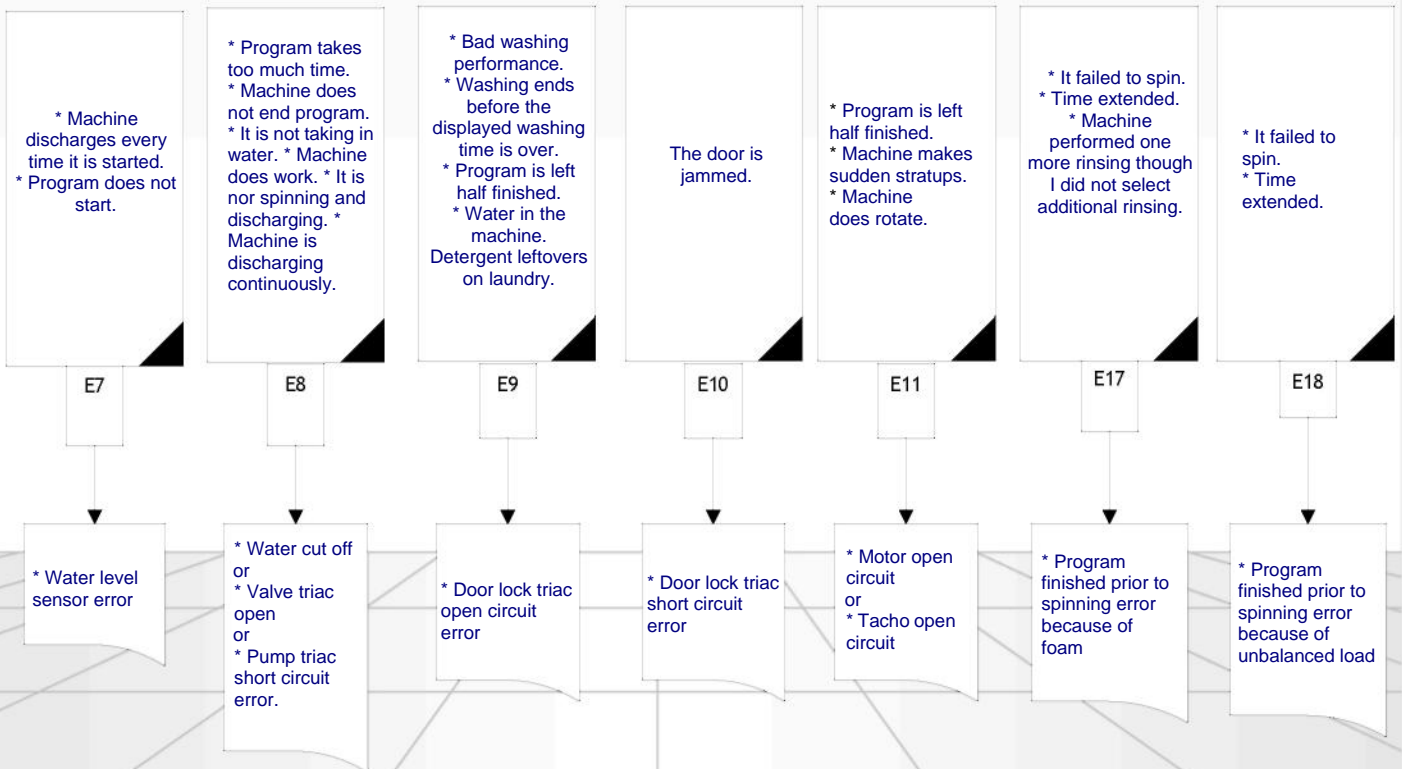
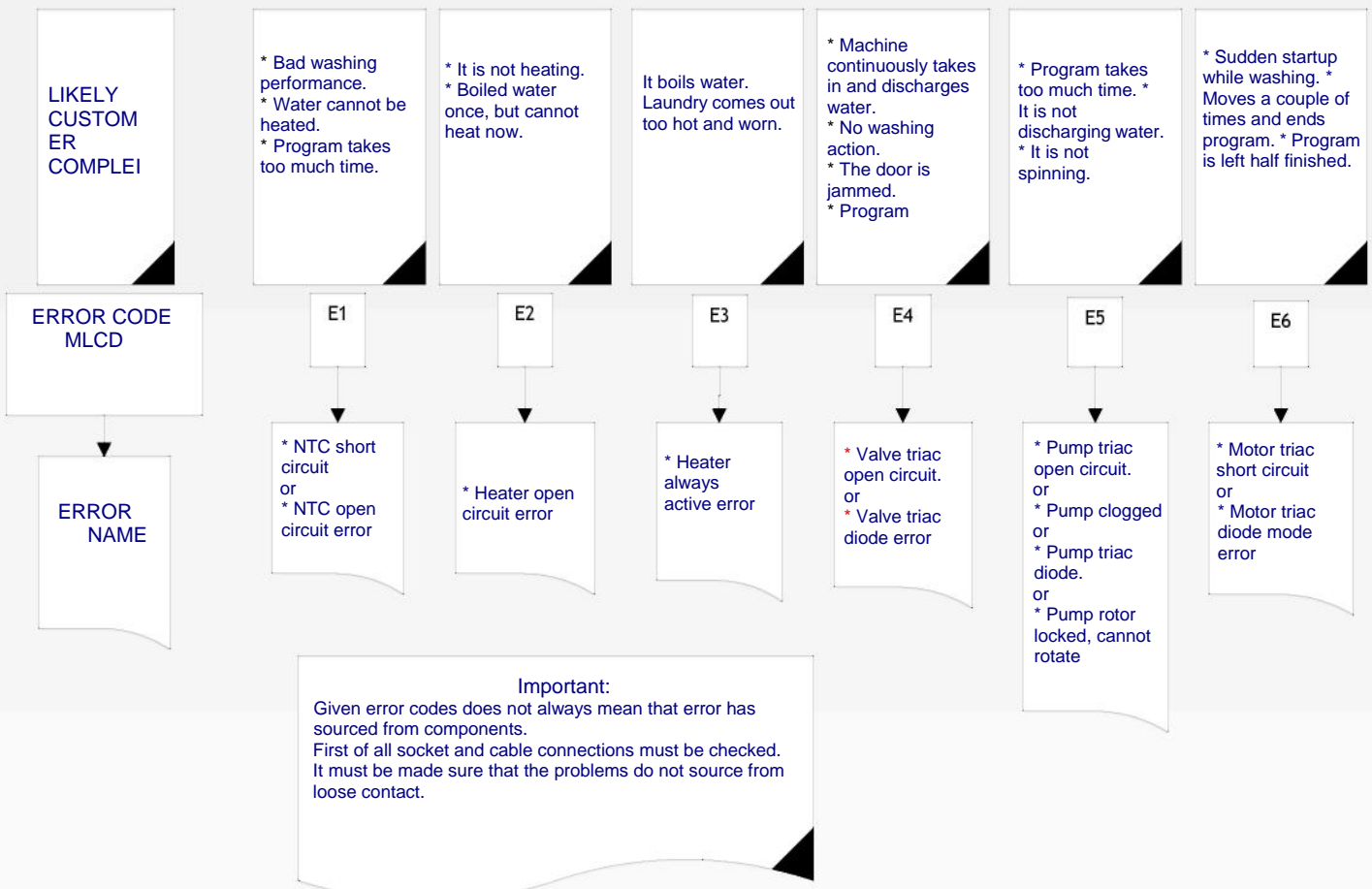
OR
3) Switch the machine to customer mode again and start. Wait until the error which caused problem to the customer occurs. Try to see the error code when program is running.

Error Code Reading Method:
Error code on display; it is shown as (E..) on display screen. Error code may be accessed in 2 different ways.

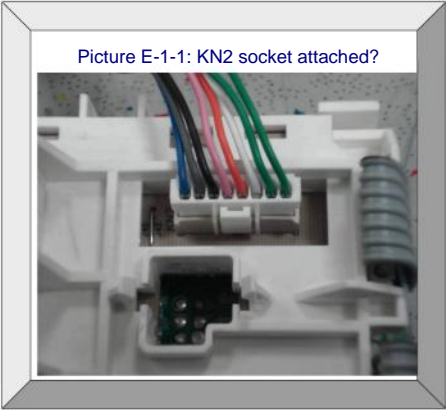
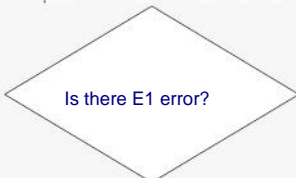
1) Error code is displayed on the screen at the beginning of function test until 'Start/Pause' button is pressed second time. Even if a new program has been started, the error code herein is not deleted; code of the last occurred error is always shown here.

2) YF1 buttons are pressed for 3-5sec concurrently to read the error code.

Error is cleaned when machine starts new program; when speed and YF1 buttons are pressed, error code is not seen again.



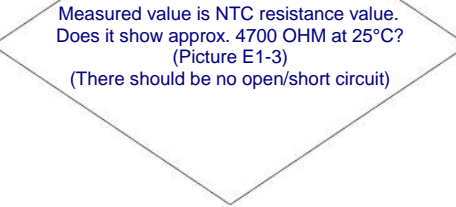
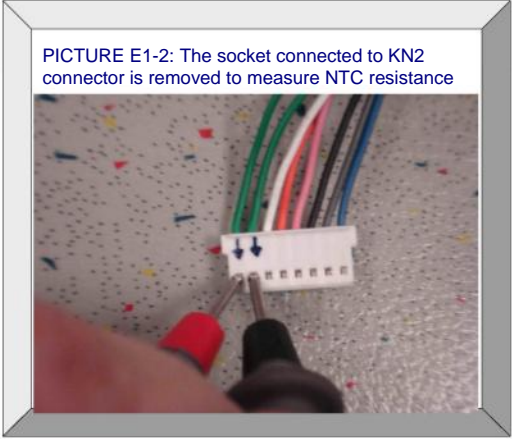
* Bad washing performance.
 * Water cannot be heated.
 * Program takes too much time.



Attach K2 socket. (Picture EM)



Remove K2 socket and measure resistance between 1st (green) and 2nd (green) pins over socket. (Picture E1-2)

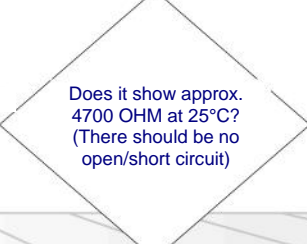


Replace control board.

Open the rear door of machine. After removing NTC socket on heater, measure NTC value directly via NTC. (Picture E1-3)

Important:
 In cases of washing machine NTC open circuit / short circuit and heater open circuit, i.e., if there is E1, E2 or E3 error, machine will make cold washing and end program without the heater having been activated.

As the value measured via control board is erroneous, cabling is defective; check it. There should not be any loose contact or damaged cable or socket.

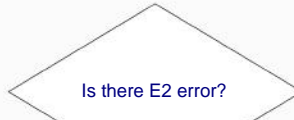


INFO: NTC resistance decreases as its temperature increases.
 E.g., shows 9500 Ohm resistance under 10 C, and 1700 Ohm resistance under 50 C. These values are not incorrect.

Replace NTC. Reattach the removed sockets back to their places.

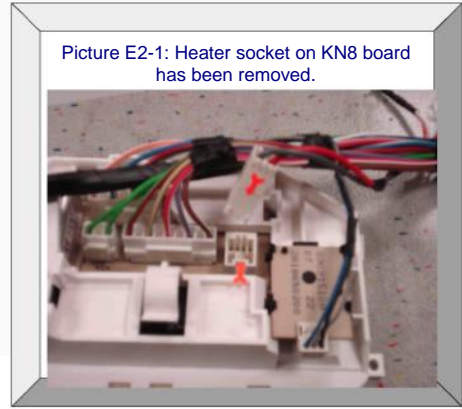
* It is not heating. *
Boiled water once,
but cannot heat
now.

Important:
In cases of washing machine NTC open
circuit / short circuit and heater open circuit,
i.e., if there is E1, E2 or E3 error, machine
will make cold washing and end program
without the heater having been activated.



Yes

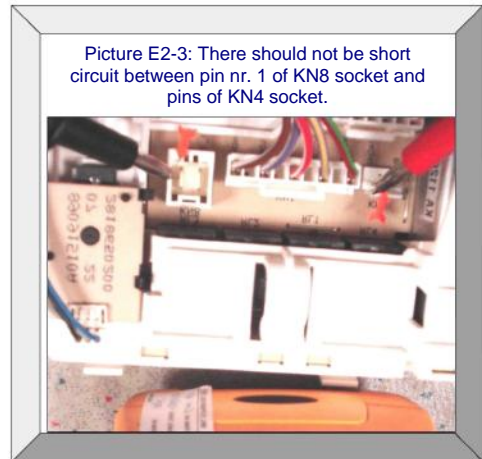
Take out panel for easy measuring. Take out KN8 (Picture E2-1) Heater socket and KN4 (Picture E2-2) Tacho socket.



No

Is there short circuit between first pins of both connectors? Check! (Picture E2-3)

Replace control board.



Open the rear door of machine. Take out at least one of heater ends and measure heater resistance. Is the resistance 25 Ohm? (Picture E2-4)

No

Replace heater

Is the heater working although there is no water?

No

You may start washing program.

Yes

Check water level sensor. When empty machine is energized, measure the frequency between pins no: 1 and 3. It must be around 25560 Hertz. (Picture 2-5)

Picture E2-5: Water level sensor is being controlled



PICTURE E2-4: One of the cables (left one) on the heater has been removed and heater resistance is being measured.



It boils water.
Laundry comes
out too hot and
worn.

E3

* Heater always
active error

Is there E3 error?

Take out panel for easy
measuring. Take out KN8
(Picture E3-1) Heater socket
and KN4 (Picture E3-2) Tacho
socket.

Is there short circuit between first pin of KN8
connector and both pins of KN4 connector?
Check!
(Picture E3-3)

Is the heater working
although there is no water?

Yes

Yes

Replace control board.

Check water level sensor.
When empty machine is
energized, measure the
frequency between pins no: 1
and 3. It must be around 25560
Hertz. (Picture E3-5)

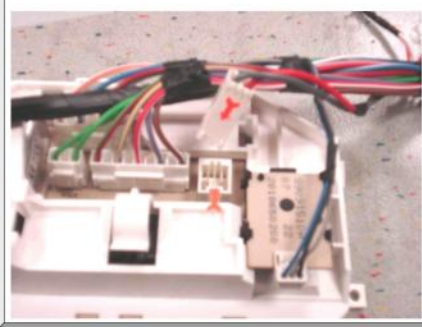
Open the rear door of machine.
Take out at least one of heater
ends and measure heater
resistance. Is the resistance 25
Ohm? (Picture E3-4)

No

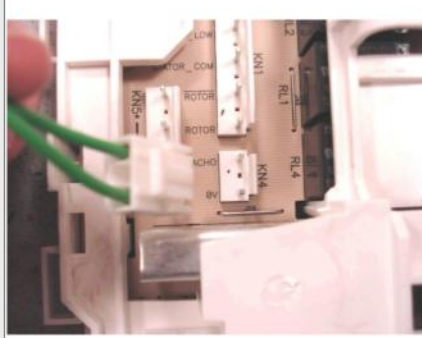
Replace heater

Important:
In cases of washing machine NTC open circuit
/ short circuit and heater open circuit, i.e., if
there is E1, E2 or E3 error, machine will make
cold washing and end program without the
heater having been activated.

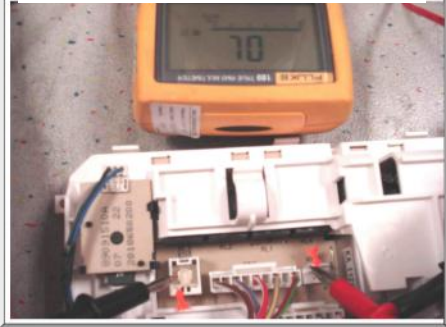
Picture E3-1: Heater socket of KN8 connector.



Picture E3-2: Remove KN4 Tacho connector.



Picture E3-3: Short circuit measurement
between first pin of KN8 connector and both pins
of KN4 connector.



Picture E3-4: Heater Resistance measurement



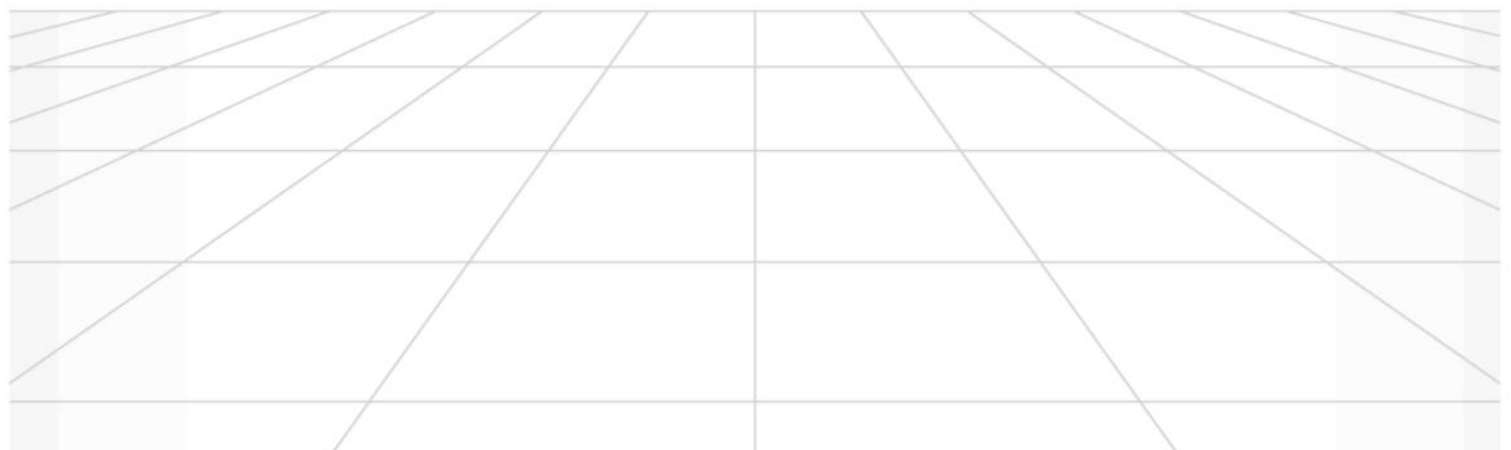
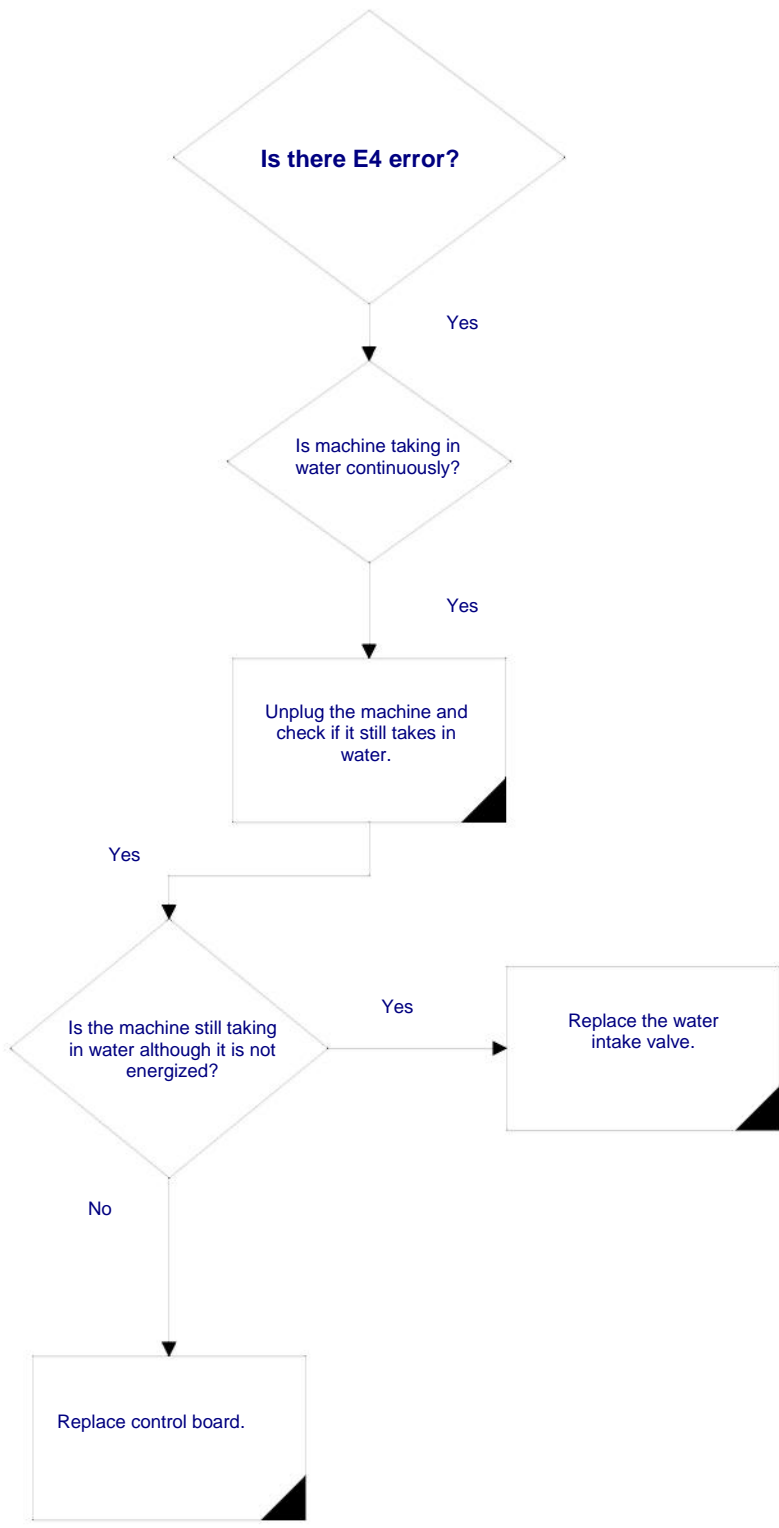
PICTURE E2-5: Water level sensor is being controlled



* Machine continuously takes in and discharges water.
* No washing action.
* The door is jammed.
* Program cannot be finished.

E4

* Valve triac open circuit.
or
* Valve triac diode error



* Program takes too much time.
 * It is not discharging water.
 * It is not spinning.

E5

* Pump triac open circuit.
 or
 * Pump clogged
 or
 * Pump triac diode.
 or
 * Pump rotor locked, cannot rotate

Is there E5 error?

Yes

Check machine supply voltage. If supply voltage is low, pump will not work.

Start the machine by taking it to pump program.

Is pump motor functioning?
 (This can be understood by touching the filter cover.)

Yes

* Check and clean the pump filter.
 * Check if the drain hose is of appropriate height and length; correct as necessary.
 * Make sure that the drain hose is not bent or kinked.
 Discharge water and restart pump program.

No

Can the pump discharge water? (pump triac may be diode) Even though the pump creates vibration, it cannot pump.)

When pump program is running, check the control board and if there is 220VAC between KN7 (purple)(pin 6) and KN7 (red white)(pin 3) without taking out any socket. Picture E5-1

Is there 220 VAC voltage?

No

Replace control board.

Yes

Turn off machine and dismount machine's front panel to control pump coil resistance. There must be approx. 147 Ohm resistance between two pins of pump connector. Picture E5-2 Check. There should be no open/short circuit

Is the pump resistance correct?

No

Replace the pump.

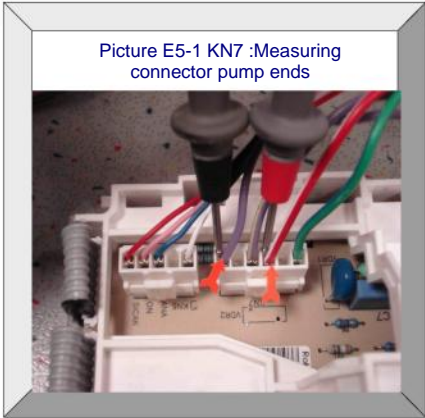
Yes

Is there loose contact or break at connections between the control board and pump motor, and on socket ends?

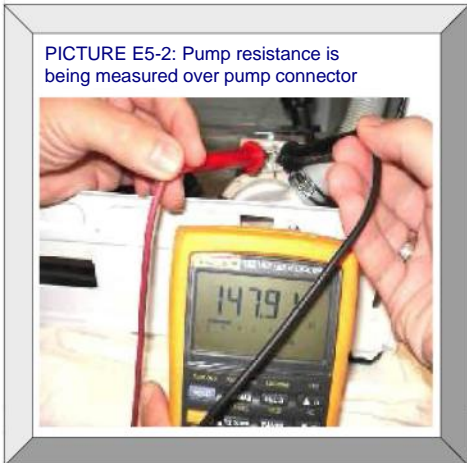
No

Repair cables and/or cable ends.

Group and restart the machine.



Picture E5-1 KN7 :Measuring connector pump ends

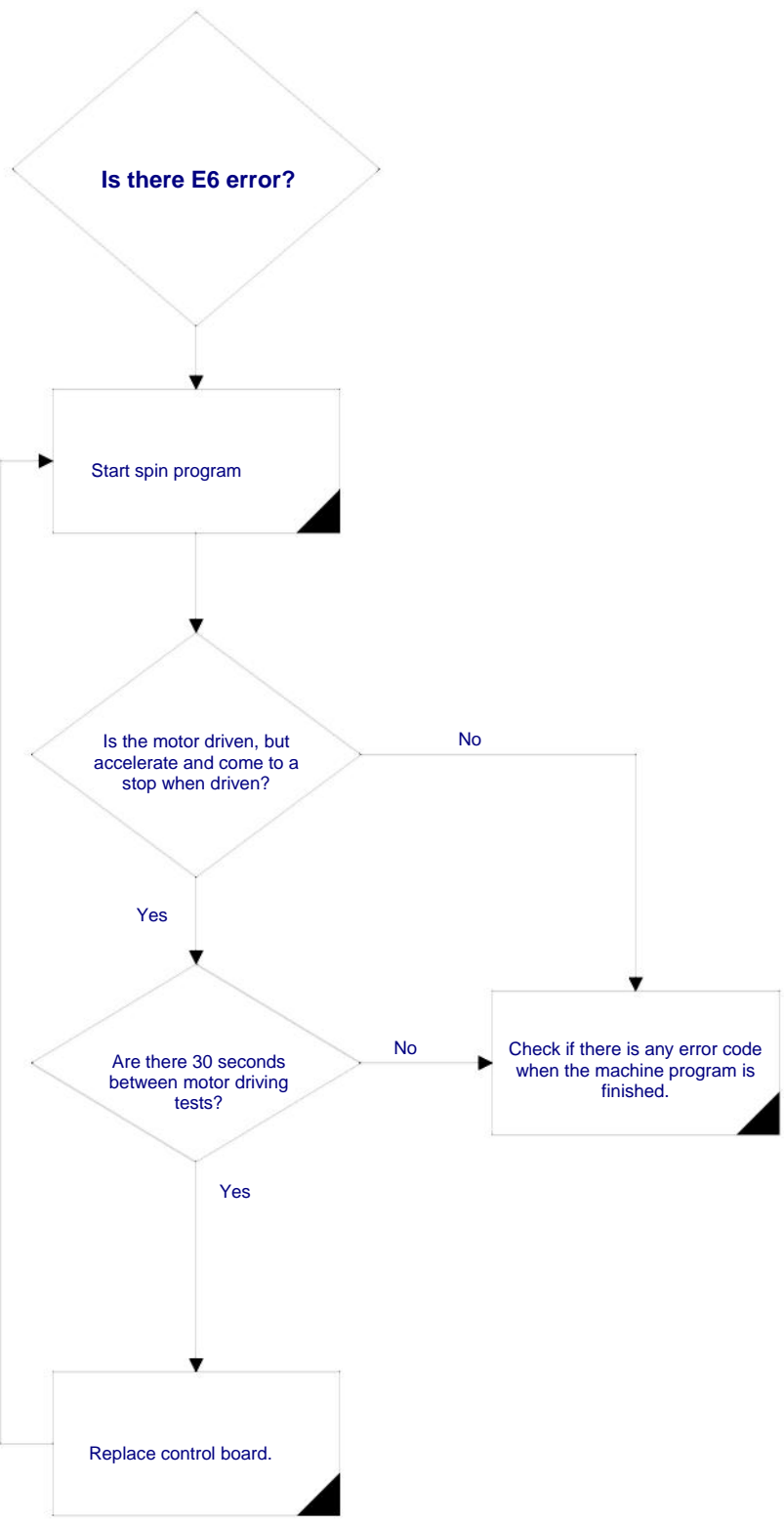


PICTURE E5-2: Pump resistance is being measured over pump connector

* Sudden startup while washing.
 * Moves a couple of times and ends program.
 * Program is left half finished.

E6

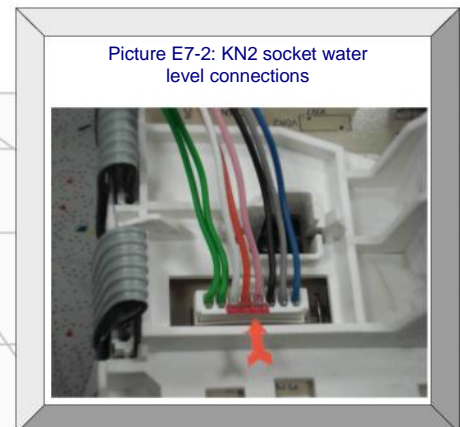
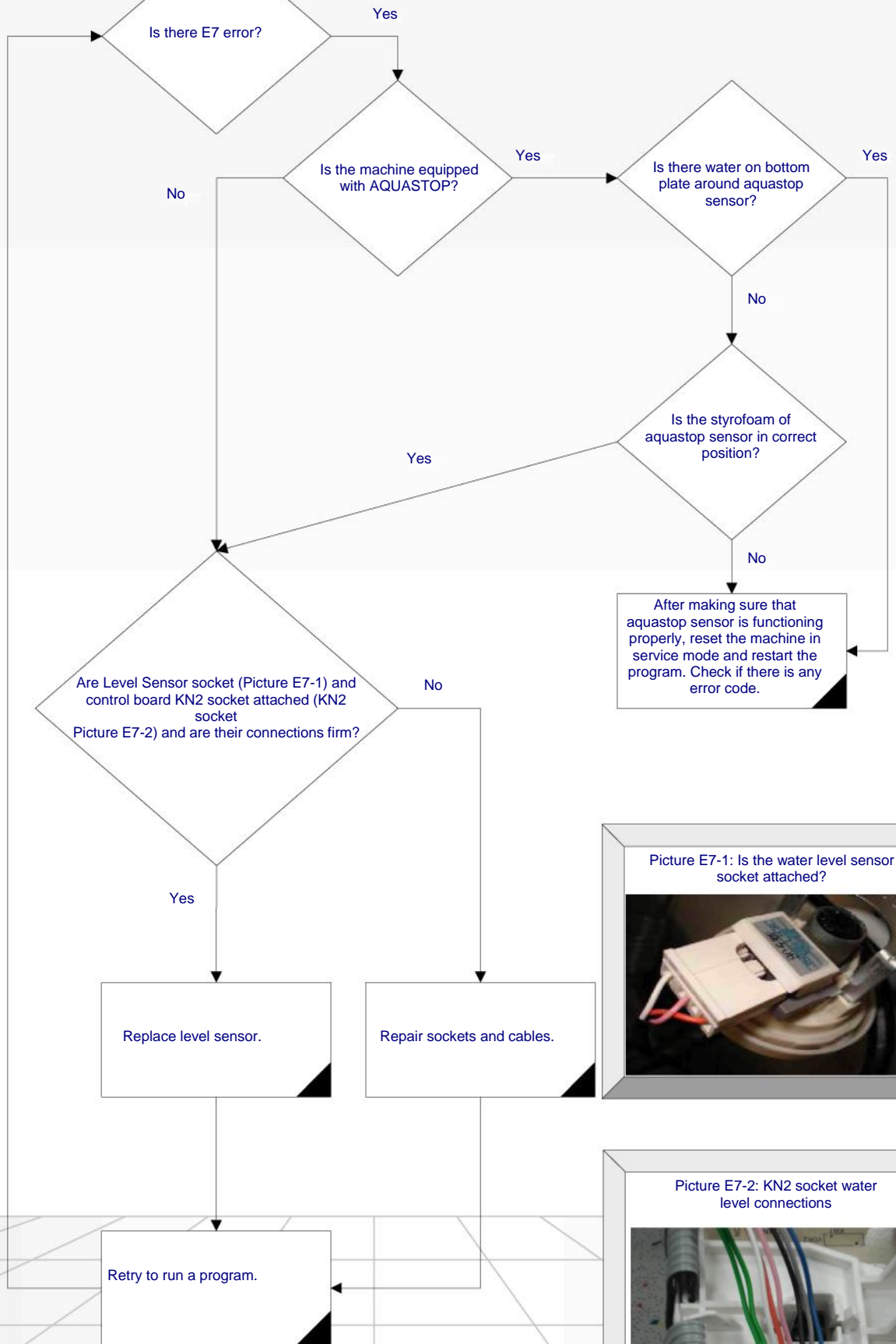
* Motor triac short circuit
 or
 * Motor triac diode mode error



* Machine discharges every time it is started.
* Program does not start.

E7

* Water level sensor error

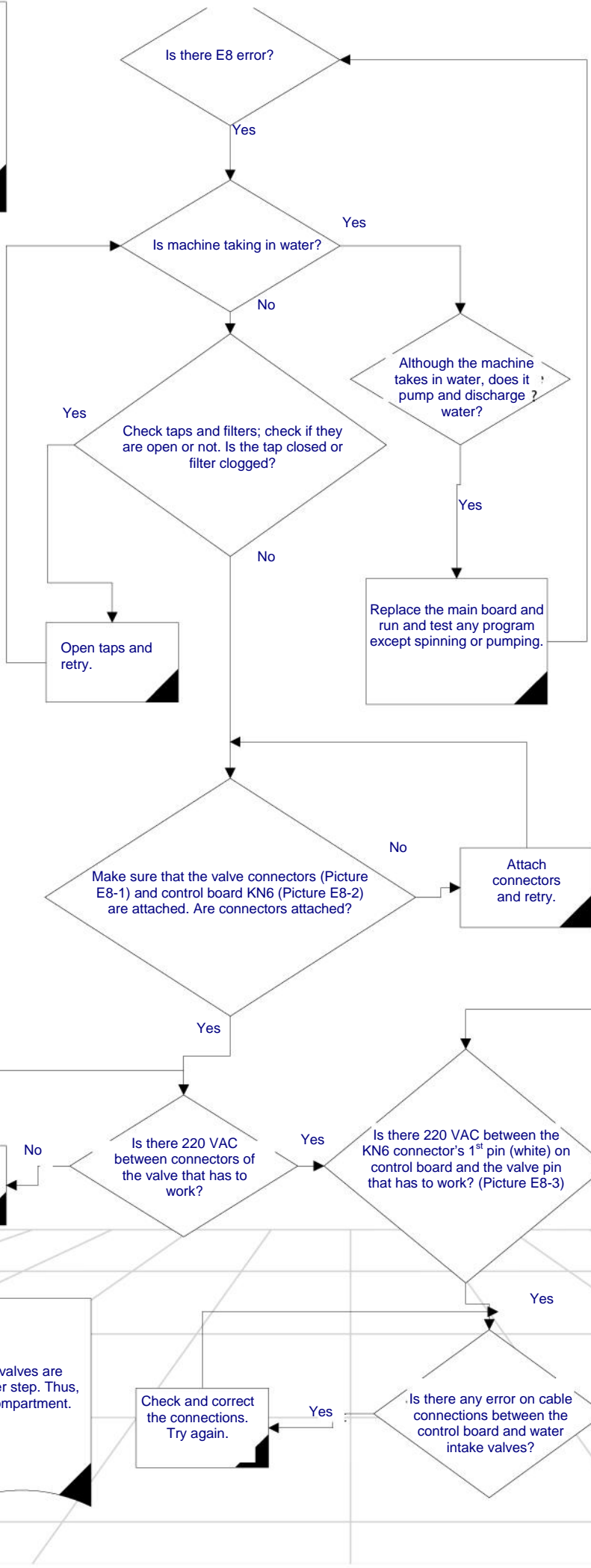
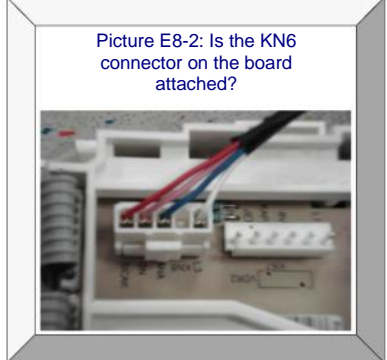


Important:
In mini led washing machines with aquastop, the aquastop circuit is connected to level sensor cable. If the aquastop buoy detects water level for whatsoever reason, it will detect it as machine level sensor error.

* Program takes too much time.
 * Machine does not end program.
 * It is not taking in water.
 * Machine does work.
 * It is not spinning and discharging.
 * Machine is discharging continuously.

E8

INFO:
 Main wash pin 3 blue Prewash
 pin 4 pink Hot washing pin 5
 red



* Water cut off or
 * Valve triac open or
 * Pump triac short circuit error.

Replace the main board and run and test any program except spinning or pumping.

Open taps and retry.

Attach connectors and retry.

Replace the valve and retry.

Replace the control board and retry.

Important:
 Prewash and main wash valves are activated together in softener step. Thus, water is sent to softener compartment.

Check and correct the connections. Try again.

* Bad washing performance.
* Washing ends before the displayed washing time is over.
* Program is left half finished.
* Water in the machine.
Detergent leftovers on laundry.

E9

* Door lock triac open circuit error

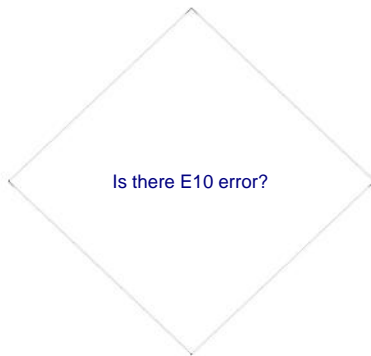


Replace the control board and retry.

The door is jammed.

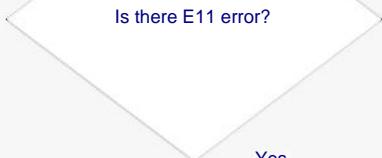
E10

* Door lock triac short circuit error



Replace the control board and retry.

* Program is left half finished.
 * Machine makes sudden strappings.
 * Machine does rotate.



E11

Start spin program

* Motor open circuit or
 * Tacho open circuit

Machine shall be turned off.
 1) Resistance value is measured between the 3rd and 4th pins of KN1 socket which was removed from the board. Resistance value is approximately 1.5 Ohm. There should be no open or short circuit. (Picture E11-2)
 2) Resistance value is measured again between the 1st and 2nd pins of KN1 socket; there should not be any open circuit. (Picture E11-3)

Is the motor moving and stopping suddenly?

Cont'd from E11_3B-B

Are both measured values correct?

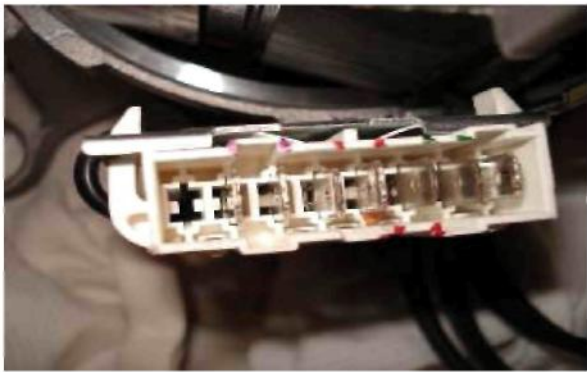
Is there a DC module in the machine?

Cont'd from E11-2 A-A

Replace DC module. Replace control board. Start spin program again

Replace control board. Start spin program again

PICTURE E11-12: 8-pin motor connector

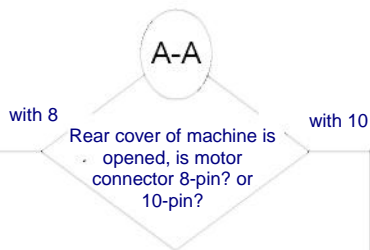
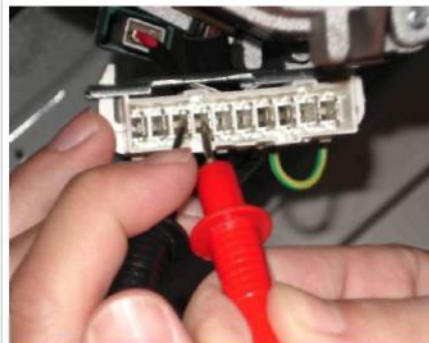


IMPORTANT: First connector on 8-pin motor connector is empty. This connector is also counted. Picture E11-12

PICTURE E11-4: Motor coil resistance is being measured over 8-pin motor



PICTURE E11-6: Motor coil resistance is being controlled over 10-pin motor



1) Motor socket is removed. Resistance value passing between 2nd and 3rd pins of motor connector is measured. Resistance value is approx. 1.5 Ohm. There should be no open or short circuit. (Picture E11-4)

2) Resistance value is measured between the 4th and 5th pins of motor connector; there should not be any open circuit. (Picture E11-5)

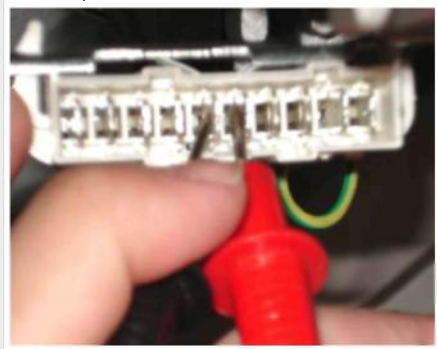
1) Motor socket is removed. Resistance value passing between 3rd and 4th pins of motor connector is measured. Resistance value is approx. 1.5 Ohm. There should be no open or short circuit. (Picture E11-6)

2) Resistance value is measured between the 5th and 6th pins of motor connector; there should not be any open circuit. (Picture E11-7)

PICTURE E11-5: Motor rotor is being controlled over 8-pin motor



PICTURE E11-7: Motor rotor is being controlled over 10-pin motor



Are both measured values correct?

Yes

No

Check and correct the cabling between the board and motor
Start spin program again

Replace the motor. Start spin program again

Cont'd from

Are there 120 seconds between motor movements?

No
Yes

Check error code again when the machine program is finished.



Machine is turned off and KN4 connector on the Board is removed to check if the resistance between Tacho ends is approximately 80 Ohms or not. (Picture E11-8VX))

Yes

Replace control board. Start spin program again

No

Rear cover of machine is opened, is motor connector 8-pin? or 10-pin?

with 8

with 10

Motor connector is removed to measure resistance between Tacho ends. Pin6, Pin7 (Picture E11-9). Tacho resistance must be 80 Ohms.



Motor connector is removed to measure resistance between Tacho ends. Pin7, Pin8 (picture E11-10) Tacho resistance must be 80 Ohms.



Are the measured values correct?

No

Yes

Replace the motor. Start spin program again

Check Tacho cable. Start spin program again

* It failed to spin.
 * Time extended.
 * Machine performed one more rinsing though I did not select additional rinsing.

E17

* Program finished prior to spinning error because of foam

Is there E17 error?

Yes

Check if main wash and prewash valves are properly connected to the related compartment of detergent drawer or not. If prewash is selected, water fills in prewash compartment when taking in the first water. If prewash is not selected, first water is taken from the main wash compartment. Is that correct?

No

Flatten the water intake hoses.

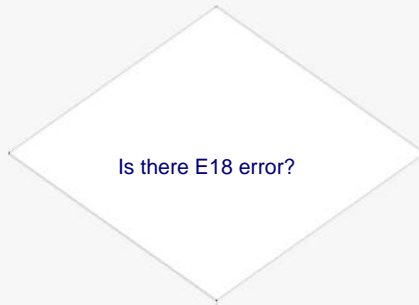
Event

Explain the following anti-foam methods to the customer.

Reasons and prevention methods of foam formation.

- 1) If detergent is added in the prewash compartment although prewash cycle is not selected, detergent is taken from this compartment when rinsing and this causes foam formation.
- 2) You should use laundry detergents for automatic machines.
- 3) Excessive amount of detergent may be left on the laundry. You should try to use adequate amount only.
- 4) Keep your detergent in closed and dry places.
- 5) For lacy laundry you should use less amount of detergent than you generally use.
- 6) You should not use too much softener.

* It failed to spin.
* Time extended.



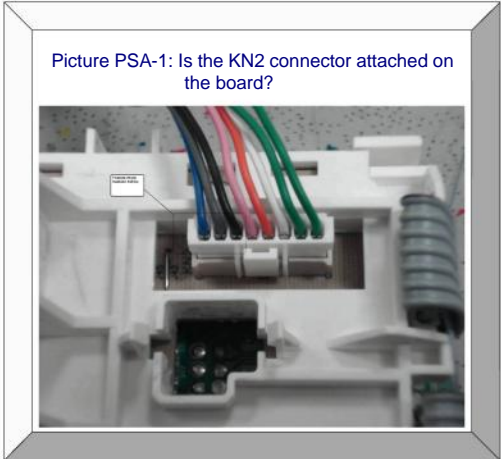
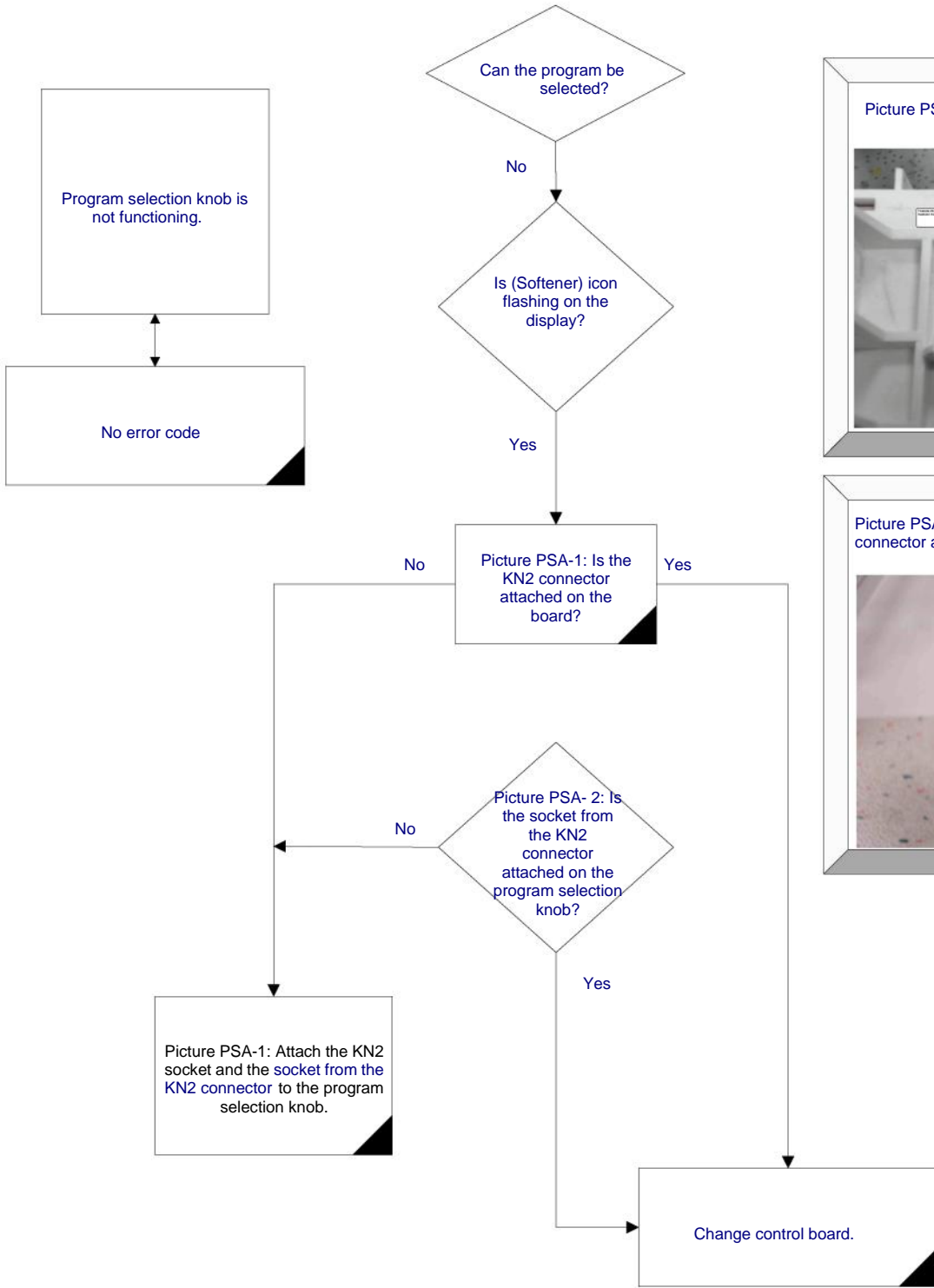
E18

Explain the customer following methods for prevention of unbalanced load.

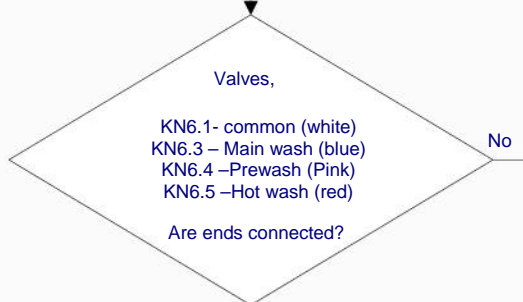
* Program finished prior to spinning error because of unbalanced load

Reasons for terminating the program before spinning as a result of unbalanced load detection.

- 1) When you use the machine with less quantity of laundry, it may pile up at one side of the drum. When high speeds are reached under an unbalanced load, washing machine will likely be damaged. For this reason, when the unbalanced load in the machine is calculated as more than the limit value, it will not spin for safety purposes.
- 2) When the machine is operated with only one pullover, bathrobe or towel, piling up probability of the laundry at one point in the drum is quite high. Try not to wash such laundry as one piece as much as you can.

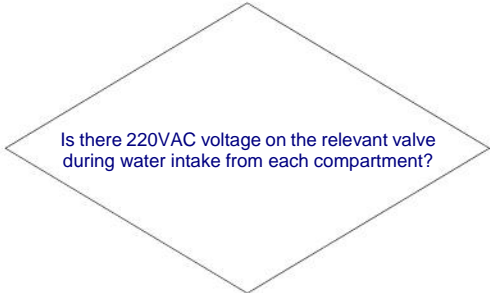


Water intake from defective detergent compartment



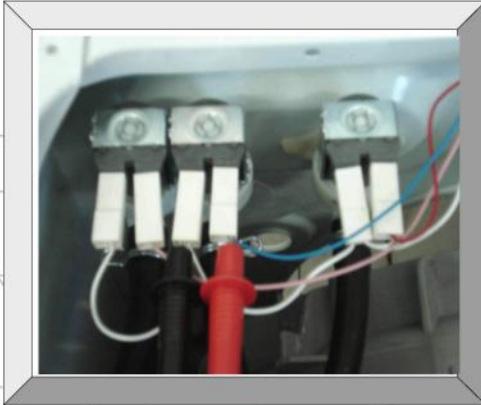
Correct the connections. Check by function test.

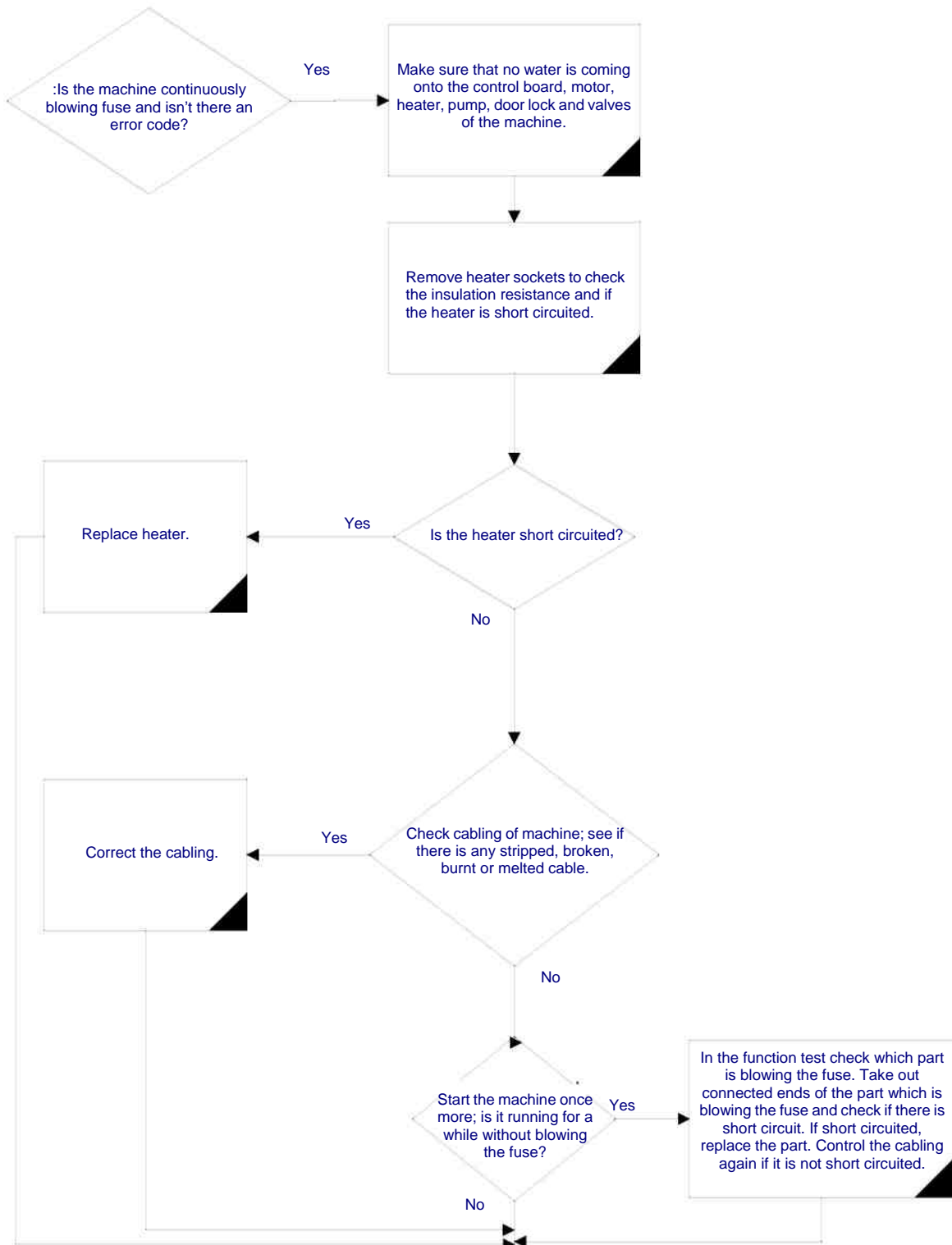
Check detergent box compartments by conducting function test on the machine. Check if there is 220 VAC on the valve during test steps



Replace the valve.

Change control board.





Error code to be displayed when entered into service mode	ERROR
E01	* Heater ntc open circuit error or * Heater ntc short circuit error
E02	* Heater open circuit error
E03	Heater always active error
E04	* Valve triac short circuit or * Valve triac diode error
E05	* Pump triac open circuit or * Pump clogged or * Pump triac diode or * Pump rotor locked, cannot rotate error
E06	* Motor triac short circuit or * Motor triac diode mode error.
E07	* Water level reading error
EOS	* Water cut or *Valve triac open or Pump triac short circuit error
E09	* Door lock triac open circuit error
E10	* Door lock triac short circuit error
E11	* Motor open circuit or *Tako open circuit
E17	*Washing machine detected foam 5 times or more; this is a WARNING, not error
E18	* Program finished without spinning because of unbalanced load. This is a WARNING, not an error.

